

**School of Population Health**

**Faculty of Health Sciences**

**Development, Implementation and Evaluation of a Nutrition  
Education Program for Parents of 0–5 Year Olds Living in  
Areas of Disadvantage in Western Australia.**

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**This thesis is presented for degree of**

**Masters of Philosophy**

**of Curtin University**

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## **Declaration**

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material that has been accepted for any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number HRE2019-0167. The work described in this thesis was undertaken by the author and is original. The study design, ethics approval, data collection and analysis, writing of manuscripts for publication, and writing of the thesis were conducted under the supervision of Associate Professor Andrea Begley, Professor Jonine Jancey and Emeritus Professor Jane Scott.

Jennifer Tartaglia

6 October 2022

# **Abstract**

## **Aim**

The aim of this research was to develop, implement and evaluate a nutrition education program for parents of children aged 0–5 years that was delivered in socially disadvantaged areas throughout Western Australia. The research aimed to explore the challenges and potential program curriculum to provide healthy diets for 0–5-year old children and to identify effective elements in parent nutrition education interventions, which were fundamental to inform the design and the development of the program.

The parent nutrition education program was the first of its kind reported in Australia that comprehensively included the combination of food literacy and positive parent feeding practices. The program incorporated all domains of food literacy into the design, which supported parents with the knowledge and skills to effectively plan, manage, select, prepare and eat healthy food. The *Food Sensations*® for Parents program supported parents to feed children through integrating parent feeding practices and aimed to improve parents' own dietary behaviours, with the assumption it would have a positive flow on effect and positively influence children's eating behaviours.

## **Background**

Parents play a fundamental role in forming good eating habits in their children. A healthy diet during childhood provides children with an optimal opportunity for growth and development. A healthy diet also reduces the risk of obesity and provides children with the life skills for healthy eating into adulthood. There is a strong relationship between a child's early health and their wellbeing in later life with the first 1000 days, from conception to 24 months, playing an important role in growth and development. Early childhood is a crucial time when flavour preferences are developed, and positive eating habits and patterns can be established that can track into later life.

Interventions that have focused on supporting families to improve their food literacy and positive parenting feeding practices have resulted in positive

effects on children's food intakes, however the combination of these two competencies being comprehensively covered within interventions in Australia is limited.

## **Methods**

A mixed methods approach was undertaken with four research phases:

1. scoping review (systematic search and summary)
2. qualitative inquiries Study 1 (parent focus groups) and Study 2 (stakeholder interviews)
3. program development Stage 1 (triangulation) Stage 2 (stakeholder forum) and Stage 3 (program development and piloting)
4. program implementation and evaluation.

## **Results**

*Food Sensations for Parents* was a 5-week program, which consisted of weekly workshops, each with a specific focus. Each workshop included 60 minutes of hands on learning activities, 60 minutes of cooking and then 30 minutes of eating with participants. Children were encouraged to taste the prepared foods in a social environment after each workshop. The program was delivered within community-based parenting organisations with 5–12 participants and were facilitated by qualified public health nutritionists. A total of 44 programs were delivered, comprising 32 in-person and 12 online programs. Of these, 41 were evaluated involving 302 participants. There were 224 matched pre- and post-questionnaires available for analysis with a response rate of 74.2% of total participants. The program resulted in statistically significant changes in all food literacy and positive parent feeding practices, and a mean increase in parents' daily vegetable intake. The program framework and curriculum were found to be an effective model that enabled behaviour change over a relatively short time frame (5 weeks).

## **Conclusion**

Conducting formative research with parents and stakeholders was crucial to inform the development of the program and its success. The research informed the development of a parent nutrition education program, which

filled a gap in program delivery throughout disadvantaged areas of the Perth metropolitan area and targeted parents in these areas who are considered a high priority group by the Western Australian Government (Department of Health, 2017b).

Future considerations to strengthen the effectiveness of the program include: undertaking co-design with priority groups such as Culturally and Linguistically Diverse (CALD) participants to determine their unique barriers to feeding children and tailoring the program to those groups; investigate multi-modal delivery to extend the reach of the program; advocate for policy and regulation that support parents' adherence to dietary guidelines; and pre-screening participants to tailor and provide for the needs of the group, including participants that may be experiencing food insecurity.

Investigating the extension of program duration may increase the program's effectiveness in improving all food literacy domains and confidence, and provide more time and support for parents in improving their parenting feeding practices. These results strengthen the case for the proposition that parent programs that emphasise parents' own dietary choices while incorporating food literacy and positive parenting feeding practices, such as responsive feeding methods, can be successful in modifying behaviours and practices.

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## List of Peer-Reviewed Publications as Part of This Thesis

The following two publications support the findings of this thesis. Copies of the publications are provided in sections 2 and 4 of the results.

**Tartaglia, J., McIntosh, M., Jancey, J., Scott, J., & Begley, A. (2021).** Exploring Feeding Practices and Food Literacy in Parents with Young Children from Disadvantaged Areas. *Int J Environ Res Public Health*, 18(4). doi:10.3390/ijerph18041496

**Tartaglia, J., Jancey, J., Scott, J., S., Dhaliwal, & Begley, A. (2022).** Effectiveness of a food literacy and parenting feeding practices program for parents of 0–5-year olds in Western Australia (Under review by a peer reviewed journal).

## Attribution Statement

This research was conducted within the School of Population Health at Curtin University, and funded by the Western Australian Health Promotion Foundation, Healthway. The researcher was the manager of the project and active in conceptualising the study design; developing and implementing the research; and the collection, analysis, and interpretation of data. The researcher was responsible for writing all publications presented as part of the thesis, with input from co-authors as follows.

**Associate Professor Andrea Begley**, School of Population Health, Curtin University: contributed as primary supervisor and provided close and ongoing support and involvement throughout the study. She contributed to the conceptualisation of the study designs and data collection methods, provided feedback on research findings and structure of publications, and read drafts and provided suggestions for improvement for both publications. Andrea was the external evaluator for the *Food Sensations* for Parents program.

**Professor Jonine Jancey**, School of Population Health, Curtin University: contributed as co-supervisor and provided close and ongoing support and involvement throughout the study. She contributed to the conceptualisation of the study designs and data collection methods, provided feedback on research findings and structure of publications, and read drafts and provided suggestions for improvement for both publications.

**Emeritus Professor Jane Scott**, School of Population Health, Curtin University: contributed as co-supervisor and provided close and ongoing support and involvement throughout the study. She contributed to the conceptualisation of the study designs and data collection methods, provided feedback on research findings and structure of publications, and read drafts and provided suggestions for improvement for both publications.

**Michelle McIntosh**, Foodbank of Western Australia: assisted with the data collection in phases 2 and 3, contributed to the first publication, and contributed as the program team lead and facilitator during Phase 4.

**Emeritus Professor Satvinder S. Dhaliwal**, Curtin Health Innovation Research Institute, Faculty of Health Sciences: provided guidance and contributed to the statistical analysis and by co-developing the multivariate logistics regression analysis for the second publication. He read and approved the final manuscript for the second publication.

The contribution of each co-author as stated in each of the published papers is located in Appendix A. Signed statements, where possible, of the contribution of each of the co-authors are included in Appendix A.

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Publication: **Tartaglia, J.**, McIntosh, M., Jancey, J., Scott, J., & Begley, A. (2021). Exploring Feeding Practices and Food Literacy in Parents with Young Children from Disadvantaged Areas. *Int J Environ Res Public Health*, 18(4). doi:10.3390/ijerph18041496

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## **Acknowledgment of Country**

We acknowledge that Curtin University works across hundreds of traditional lands and custodial groups in Australia, and with First Nations people around the globe. We wish to pay our deepest respects to their ancestors and members of their communities, past, present, and to their emerging leaders. Our passion and commitment to work with all Australians and peoples from across the world, including our First Nations peoples, are at the core of the work we do, reflective of our institution's values and commitment to our role as leaders in the reconciliation space in Australia.

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## List of Abbreviations

|        |  |
|--------|--|
| ADG    | Australian Dietary Guidelines                                    |
| AGTHE  | Australian Guide to Healthy Eating                               |
| CALD   | Culturally and Linguistically Diverse                            |
| EBFBCP | Eat Better Feel Better Cooking Programme                         |
| FBWA   | Foodbank of Western Australia                                    |
| FSA    | <i>Food Sensations</i> for Adults                                |
| FSP    | <i>Food Sensations</i> for Parents                               |
| IFG    | Infant Feeding Guidelines  |
| InFANT | Infant Feeding Activity and Nutrition Trial                      |
| RCT    | Randomised Control Trial   |
| SCT    | Social Cognitive Theory  |
| sDOR   | Satter Division of Responsibility of feeding framework           |
| SEIFA  | Socio-Economic Indexes for Areas                                 |
| SMART  | (goals) Smart, Measurable, Achievable, Realistic, Timely         |
| SMILE  | Study of Mothers' and Infants' Life Events affecting oral health |
| WA     | Western Australia  |

## List of Defined Terms

**Aboriginal** – Within Western Australia, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia.

**Centre** – setting where community-based parenting organisations work with parents and children

**Stakeholders** – health professionals, early childhood education experts and people working with families

**Parents** – parents or carers or grandparents or legal guardians of children

**Program** – refers to community-based nutrition education interventions in the context of the *Food Sensations* for Parents program

**Target group** – parents of children aged 0 to 5 years

**Food Literacy** – the scaffolding that empowers individuals, households, communities, or nations to protect diet quality through change and strengthen dietary resilience over time. It is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet [dietary] needs and determine intake (Vidgen & Gallegos, 2014, p. 124).

**Parent Feeding Practices** – are the specific strategies and actions (the “when, what and how”) of child feeding that shape a child’s attitudes, beliefs and behaviours around food (Vaughn et al., 2016). Positive parent feeding practices are evidence based strategies that support health and wellbeing at the parent, child and family levels including responsive feeding (Daniels, 2019).

**Responsive feeding** – responsive feeding creates a supportive environment that values a child’s ability to self-regulate eating and develop autonomy, and provides positive parenting responses that are appropriate to a child’s development and competence including their level of maturation and development stage (Cormack, Rowell, & Postăvaru, 2020).

**SEIFA** – is a suite of four indexes developed from a set of socioeconomic factors collected from Australian Census data, which ranks geographic areas based on their relative advantage and disadvantage (Australian Bureau of Statistics, 2018). The Index of Relative Socioeconomic Disadvantage (IRSD) was the specific index used as it measures different aspects of socioeconomic conditions by geographical areas as each area is given a SEIFA decile which shows how relatively ‘disadvantaged’ that area is compared with other areas in Australia. Components of the index include

internet connection, occupation, post-school qualifications, income, marital status, proficiency in English, Indigenous status, employment status, family composition, whether have a car, long-term health condition or disability and need assistance, renting from the government or community, low rent payments and whether additional bedrooms are needed (Australian Bureau of Statistics, 2008).

**Priority populations** – or priority communities are “*those that need particular attention or focus in the way of investment and resources to create a more equitable health status*” (Munari, Wilson, Blow, Homer, & Ward, 2021, p. 198).

# Chapter 1 Introduction

## **Early nutrition intervention**

Optimal nutrition is vital for children to support growth and health. A healthy diet improves quality of life and wellbeing and reduces the risk of being overweight or obese, which is a major risk factor for a number of major chronic diseases later in life (Department of Health, 2021; National Health & Medical Research Council, 2012). The World Health Organization has identified early childhood as one of three critical periods for intervention, as it presents a crucial opportunity to shape and develop taste preferences, healthy eating behaviours and promote health into adulthood (United Nations Children's Fund, World Health Organization, World Bank Group, 2018b).

There is a strong relationship between a child's early health and their wellbeing in later life, with the first 1000 days, from conception to 24 months, playing an important role in growth and development (Mameli, Mazzantini, & Zuccotti, 2016). There have been recent calls for an extension to the importance of early intervention to the first 2000 days of a child's life for obesity prevention (from conception to 5 years) (Skouteris et al., 2020).

## **Importance of good nutrition for children**

Good nutrition during childhood has been recognised as a key indicator for optimal health, growth and cognitive development (Black et al., 2013; Langley-Evans, 2015). The Australian Government's Infant Feeding Guidelines (IFG) have been developed to provide consistent evidence based advice to professionals about feeding children from birth to 2 years of age. The Australian IFG recommends infants be exclusively breastfed until around 6 months of age when solid foods are introduced. It is further recommended that breastfeeding be continued until 12 months of age and beyond, for as long as the mother and child desire (National Health & Medical Research Council, 2012). Breastfeeding has health, nutritional and developmental benefits for infants that carry into later childhood and beyond. The Australian Dietary Guidelines (ADG) recommend that from the age of 2 years, children should eat sufficient nutritious foods from all five food groups every day to

meet energy requirements and to enable them to grow and develop (National Health & Medical Research Council, 2013). The guidelines promote a whole family approach to healthy eating and physical activity, and aim to promote health and wellbeing to reduce the risk of diet related conditions and chronic disease.

The period when solid foods are being introduced to infants is an important stage in the development of appropriate eating habits, as early eating patterns and flavour preferences developed during childhood can track into later life (Birch, Savage, & Ventura, 2007; Horta, Loret de Mola, & Victora, 2015; Mennella & Bobowski, 2015). The transition from milk to solid foods is an important developmental stage as it may affect the acceptance of food (Mennella & Bobowski, 2015). Research has shown that during infancy repeated flavour experiences promotes the willingness for children to eat a variety of foods and be more accepting of novel flavours, which may lead to a lifelong intake of fruits and vegetables (Mennella & Trabulsi, 2012).

### **What are children eating in Australia?**

Most Australian children are not meeting the dietary guidelines (Australian Bureau of Statistics, 2017). The Australian Health Survey, which reported on children 2 years and older, found 1 in 5 (21%) 2–3-year olds were overweight or obese (Australian Bureau of Statistics, 2014). The survey found 1 in 6 (18%) 2–3-year olds consumed sugar sweetened drinks, such as cordials and soft drinks and 30% of this age group's energy was from discretionary foods (Australian Bureau of Statistics, 2017). The survey also found children aged 2–3 years only consumed around half of the recommended daily serves of vegetables, grain foods and meat and alternatives (Australian Bureau of Statistics, 2014). For example, only 18% of 2–3-year olds achieved their daily recommended serves of vegetables. The introduction of complementary (solid) foods is recommended by the National Health and Medical Research Council at around 6 months of age, with infants being exclusively breastfed up until that time (National Health & Medical Research Council, 2012).

In Australia there is currently no ongoing large scale national data collection on infant feeding. The most recent national data available is the 2010



Australian National Infant Feeding Survey, which collected data during the period 2010–2015 (Australian Institute of Health and Welfare, 2011) and the 2011–12 Australian Health Survey (Australian bureau of Statistics, 2012). Both surveys reported on the prevalence and duration of breastfeeding and the age of the introduction of complementary foods, but these surveys did not collect information on foods children eat as they transition from breastmilk and/or formula to the family diet. A recommendation from the Council of Australian Government's (2019) Australian National Breast Feeding Strategy is to commission a baseline infant and toddler feeding survey and repeat the survey every 5 years to monitor and report on the adherence to dietary guidelines.

From the limited research available in Australia about the diets of children less than 2 years of age, what is known is there is a lack of adherence to the national IFG (Australian Institute of Health and Welfare, 2011), including the early introduction of solids (less than the recommended 6 months of age) (Scott, Binns, Graham, & Oddy, 2009). The Healthy Smiles Healthy Kids Study, in Sydney, Australia, reported 80% of mothers had introduced solids to their babies before 6 months of age (26 weeks) and 14% had introduced solids before 17 weeks (Arora et al., 2020). Mothers who were less than 25 years of age, single, and fully formula-feeding their infants at 4 weeks of age were more likely to introduce solids very early (Arora et al., 2020). The Infant Feeding Activity and Nutrition Trial (InFANT) study found up to one third of infants and one fifth of toddlers had inadequate iron intakes (Atkins, McNaughton, Campbell, & Szymlek-Gay, 2016). Further, the study of Mothers' and Infants' Life Events affecting oral health (SMILE) found 38% of 2-year olds consumed above the 10% of energy intake recommended for free sugars in their diet (Devenish et al., 2019).

### **Parents' role in children's health outcomes**

Parents play a fundamental role in food selection and promotion of healthy eating behaviours for their children within the home food environment, and are in the most important and influential position to foster positive eating habits within their families (Myers, Gibbons, Arnup, Volders, & Naughton,

2015). Parents have a high degree of control in modelling their children's eating behaviours, which is supported through eating together and the availability and accessibility to the food within the home (Mahmood, Flores-Barrantes, Moreno, Manios, & Gonzalez-Gil, 2021). Through education, parents can be empowered to manage their children's feeding behaviours and gain a better understanding of a healthy diet, and learn practical ways to form healthy dietary behaviours in the early years (Matwiejczyk, Mehta, Scott, Tonkin, & Coveney, 2018).

Parents, as the gatekeepers of the family home environment, play a key role in influencing their children's eating behaviours. In a qualitative review of 88 studies, parents' own food behaviours and feeding strategies were found to be the most dominant contributor to the eating behaviour and food choices of children aged 6 months to 19 years of age (Scaglioni et al., 2018). Parenting practices include both parent behaviours and parent and child interactions, either intentional or unintentional, which influence a child's physical, cognitive, social and emotional development (Vaughn et al., 2016). Food parenting practices consider a parent's feeding style and practices and shape a child's eating and attitudes, behaviours and beliefs towards food (Vaughn et al., 2016). Parenting feeding practice encompass three main constructs including coercive control, structure, and autonomy support (Vaughn et al., 2016).

Research has shown interventions that focus on parent feeding practices can have positive effects on children's food intakes (Johnson, Hendrie, & Golley, 2016). A review of published studies on 4–8-year olds' intake of discretionary foods (Johnson et al., 2016) found the most effective interventions to influence children's discretionary choices were those that focused on parent feeding practices which encouraged lower parental control, and supported parents with the planning and selection of foods that can be consumed outside the home. In addition, interventions that changed parent's attitudes towards the consequences of their children consuming discretionary foods, such as dental health and long-term consequences such as an increased risk of obesity and type 2 diabetes, were also found to be most effective (Johnson et al., 2016).

Parents and children living in areas of social disadvantage are a high priority target group, because socioeconomic status is a contributing determinant in health inequalities in children (World Health Organization, 2018a). Children from Australian families classified as low socioeconomic are at greater risk of persistent and late-onset childhood overweight than children living in higher levels of advantage (Jansen, Mensah, Nicholson, & Wake, 2013).

Furthermore, the ability to access, understand and apply information from early childhood services has shown to be a barrier for socially disadvantaged families to obtain the assistance they need about healthy eating, and to put the health advice into practice (Myers et al., 2015).

Food literacy is defined as “the scaffolding that empowers individuals, households, communities, or nations to protect diet quality through change and strengthen dietary resilience over time. Food literacy is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet [dietary] needs and determine intake” (Vidgen & Gallegos, 2014, p. 54). Dietary resilience is explained as the ability to maintain a healthy pattern of eating when circumstances change (Vidgen & Gallegos, 2014).

Nutrition interventions – which aim to improve knowledge, skills and attitudes towards healthy eating that include supportive information resources and active parental engagement, such as attending education sessions and active hands on activities such as cooking – have been associated with more positive outcomes (Myers, Riggs, Lee, Gibbons, & Naughton, 2019; Overcash et al., 2018). In addition, the effectiveness of interventions are enhanced when they are underpinned with theoretical frameworks (Black, D'Onise, McDermott, Vally, & O'Dea, 2017; Jancey et al., 2014; Matwiejczyk et al., 2018; Myers et al., 2019). Although programs that focus on a food literacy model have been shown to be effective (Begley, Paynter, Butcher, & Dhaliwal, 2019a), there have been few programs in Australia that aim to improve the food literacy of parents (Jancey et al., 2014) and no programs that comprehensively include both food literacy and positive parenting feeding practices.

This present research informed the development of a new parent nutrition education program that filled a gap in the delivery of a food literacy and parenting feeding practices programs for parents of 0–5-year olds in disadvantaged areas, who are considered a high priority group. The research investigated the needs of the target group and developed a program that aimed to improve both food literacy skills and parenting feeding practices, with the view to improving children’s diets and ultimately achieving the long-term goal of improving health outcomes of children.

## **Background**

Part of this research investigated how Foodbank WA’s existing food literacy programs could inform the development of a new statewide food literacy program for parents of 0–5-year olds. A background to the development and overview of these programs is essential in understanding how these programs impacted and informed the development of the new *Food Sensations* for Parents program.

Based in Western Australia (WA), Foodbank WA is the largest national hunger relief organisation in Australia and has an extensive track record of successfully working with groups at risk of experiencing economic and social disadvantage. Foodbank WA recognised the role of nutrition education in supporting priority groups and incorporated food literacy programs into its core food bank business by establishing the Healthy Food for All business unit in 2007 (Butcher et al., 2014). In August 2022, the team’s name changed to the Nutrition Education Team to better reflect their role within the *Feed, Educate, Advocate* purpose of the Foodbank WA strategic plan. The Nutrition Education Team is a comprehensive statewide, school and community-based unit, including the School Breakfast Program and *Food Sensations*<sup>®</sup> programs, which are designed to promote healthy nutrition to groups at risk of experiencing economic and social disadvantage populations – a major target group of food banks.

Since 2010, Foodbank WA has delivered food literacy programs to over 62,000 Western Australians at risk of experiencing economic and social disadvantage (Butcher, Platts, et al., 2021). Food literacy programs have

been shown to be an effective strategy in addressing health inequalities, therefore Foodbank WA advocates for investment in food literacy programs to improve health outcomes of priority groups (Begley, Butcher, Bobongie, & Dhaliwal, 2019).

In 2018, Foodbank WA was successful in obtaining a 3-year health promotion funding grant to develop and implement a parent nutrition education program. This present research was carried out as part of that Healthway funding grant (Healthway Health Promotion Grant #32978, 2019–2021).

In 2015, Foodbank WA developed four one-off nutrition education and cooking workshops for parents of 0–5-year olds in the East Pilbara region of WA, which includes the towns of Port Hedland and Newman, and a number of Aboriginal communities that are classified as remote or very remote (Australian Bureau of Statistics, 2011).

The Pilbara workshops were developed to specifically cater to the needs of the parents living in this region. The Pilbara region has a high Aboriginal population (16% compared to the state average 3.8%) and has one of the most disadvantaged levels of socioeconomic status (Australian Bureau of Statistics, 2016), assessed using the Socio-Economic Indexes for Areas (SEIFA) indicator. Furthermore, the East Pilbara region has a high rate of teenage birth, low breastfeeding initiation rates (18.9%) and a high level of children with developmental challenges (47%) (Foodbank of Western Australia, 2016; Rural Health West, 2015; Springall, McLachlan, Forster, Browne, & Chamberlain, 2022). Formative development of the Pilbara workshops focused on how to engage Aboriginal families in the program, and overcome the unique barriers reported by stakeholders in the region that included: the transient nature of Aboriginal people, lack of transport, very low literacy, and cultural barriers such as a reluctance to engage in the education session. The workshops utilised experiential learning activities and cooking to engage parents (Foodbank of Western Australia, 2016). The development of the workshops included an online survey for experts in the field – such as

dietitians, health promotion officers, and people working with the target group – and consultation with East Pilbara stakeholders.

Content from the Pilbara workshops included an introduction to the Australian Guide for Healthy Eating (National Health & Medical Research Council, 2013), label reading, addressing fussy eating, healthy food choices, and food safety. Process and qualitative evaluation undertaken for the Pilbara workshops found a high level of delivery satisfaction among participants and improvement in participants' understanding and nutrition knowledge of healthy food selections and usage (Godrich et al., 2018).

An evaluation – that included a validated instrument – of Foodbank WA's *Food Sensations* for Adults (FSA) program found it to be an effective food literacy program (Begley, Paynter, Butcher & Dhaliwal, 2019a). The program was shown to improve participants' intake of fruit and vegetables, while improving participants' dietary and food literacy behaviours (Begley, Paynter Butcher, & Dhaliwal, 2019a). The FSA program is guided by the Australian Dietary Guidelines (National Health & Medical Research Council, 2013) and uses strategies based on a food literacy framework (Vidgen & Gallegos, 2014) to build confidence, self-efficacy and motivation of participants. The program was also developed utilising the social cognitive theory (Bandura, 1986) and the health belief model (Janz & Becker, 1984). The FSA food literacy program is delivered in four face to face sessions totalling 10 hours that cover healthy eating, label reading, food selection, meal planning, budgeting, food safety, food preparation and cooking. Participants are provided a range of resources including recipe booklets, meal planners/shopping lists, and portion plates to support their learning.

This thesis will report on the development, implementation and evaluation of a new parent nutrition education program called *Food Sensations* for Parents (FSP).

## **Personal Background**

I am passionate about health and nutrition, enjoy cooking and have a love of food, particularly Italian food. I am dedicated to improving the health of

people at risk of experiencing economic and social disadvantage through my work, which is underpinned by health promotion principles. Since graduating in 2008 with a Bachelor's degree in Health Science (major in health promotion and nutrition) from Edith Cowan University (ECU), I have worked in several roles. I began my professional career in a research role as the Fieldwork Coordinator for the Child and Adolescent Physical Activity and Nutrition Survey through ECU, followed by research assistant roles with the Health Promotion Evaluation Unit at the University of Western Australia. I commenced working at Foodbank WA in January 2011. As a public health nutritionist at Foodbank, I have worked in various roles including Physical Activity Promotion Coordinator, *Food Sensations* School Team Lead and *Superhero Foods* Coordinator.

My work has centred on improving the dietary intakes and health outcomes of children. I enjoy working on projects that require creativity and collaboration and provide opportunities to inspire people of all ages to get excited about healthy eating and cooking. My aim is to help people make positive changes to their behaviours and improve their dietary intake so it can lead to their better health now – and in their future.

Through my role at Foodbank, I have had the privilege and opportunity to develop the *Superhero Foods* initiative. *Superhero Foods* are a unique suite of cartoon-based food characters and messages that aim to increase the dietary intake of school-aged children in accordance with the Australian National Dietary Guidelines (National Health & Medical Research Council, 2013). The initiative encompasses a suite of nutrition resources that support schools, educators and health professionals to deliver nutrition, and promote healthy eating to children in a fun and engaging way. The concept has been evolving since 2013, when breakfast placemats incorporating *Superhero Foods* and healthy eating messages were developed initially to be used in over 400 schools involved in Foodbank WA's School Breakfast Program. The initiative now encompasses more than 80 characters and a range of supporting resources located on a dedicated website [superherofoodshq.org.au](http://superherofoodshq.org.au). The resources include recipe booklets for children (Let's Cook), lesson plans, a community tool kit, activity books, a *Superhero*

*Foods* handbook, posters, collectable game cards, a healthy eating plate for children, and newsletter inserts. A web-based application targeting 5–12-year olds features fun games, activities, videos and step by step recipes. I have written two children’s story books for the project: *Joe’s Epic Breakfast Adventure* and *Let’s Eat*. I also undertook a project to develop culturally appropriate food literacy resources for Aboriginal children, incorporating *Superhero Foods* themes and messaging (Tartaglia, Giglia, & Darby, 2022).

My work at Foodbank and the implementation of the *Superhero Foods* projects has led me to working with parents and this present research. As parents are the gatekeepers to food within the family home, it is vital they are supported with the knowledge and skills to feed their families. As a parent of two children myself, I am aware of the amount of time and energy it takes to feed children and provide a nutritious diet for the whole family. I am passionate about helping parents navigate feeding their own families and to provide their children with the best start in life.



## **Research Aim**

The aim of this research was to develop and evaluate a nutrition education program for parents of children aged 0–5 years to be delivered to parents living in socially disadvantaged areas in WA.

## **Research Objectives**

1. Identify effective elements in parent nutrition education, food literacy and parent feeding practices interventions.
2. Explore the challenges and potential program curriculum to provide healthy diets for 0–5-year old children.
3. Develop, implement and evaluate a parent nutrition education program incorporating food literacy and positive parenting feeding practices.

## **Study Overview**

This research comprised four phases:

Phase 1: scoping review (systematic search and summary).

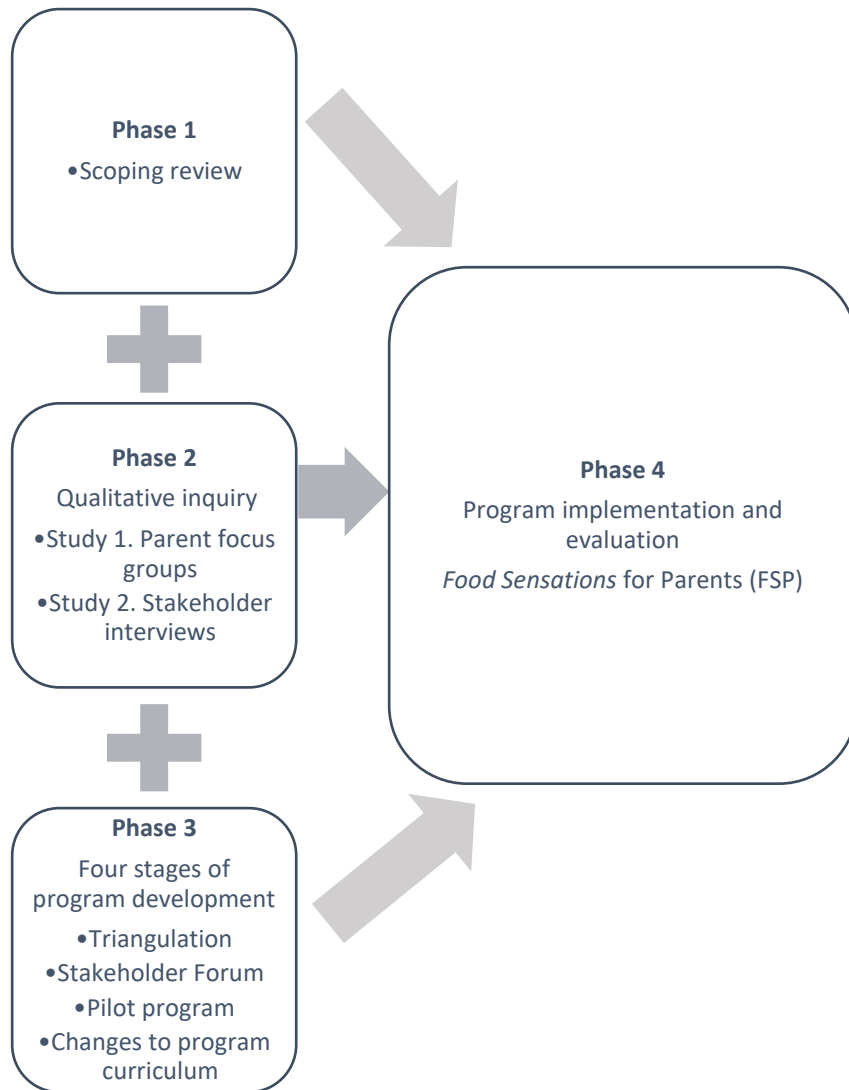
Phase 2: qualitative inquiries Study 1 (parent focus groups) and Study 2 (stakeholder interviews).

Phase 3: program development Stage 1 (triangulation), Stage 2 (stakeholder forum), and Stage 3 (development and piloting of program), Stage 4 (changes to program curriculum).

Phase 4: program implementation and evaluation.

An overview of the study components is provided in Figure 1.

Figure 1. Overview of Study Components



## Objectives of Research Phases

### Phase 1 Scoping Review

1. Describe and compare intervention design characteristics and outcomes.
2. Identify effective intervention design characteristics and strategies that aim to improve dietary behaviours and food literacy skills and/or parent feeding practices.

3. Identify reported study recommendations for improving intervention outcomes that can inform a parent nutrition education program incorporating food literacy and positive parenting feeding practices.

## **Phase 2 Qualitative Inquiry**

### **Study 1 Parent Focus Groups**

1. Assess challenges with feeding and strategies used by parents (Publication 1).
2. Identify barriers to food planning, selection and preparation (Publication 1).

### **Study 2 Stakeholder Interviews**

1. Identify food and nutrition experiences with parents of children aged 0–5 years.
2. Determine the barriers and enablers to engaging parents in parenting workshops or programs from past experiences.
3. Identify perceived gaps in parents' knowledge or skills around feeding children aged 0–5 years.

## **Phase 3 Program Development**

1. Design and pilot a nutrition education program for parents of 0–5-year olds living in disadvantaged areas in Western Australia, integrating the concepts of food literacy and positive parenting feeding practices.

## **Phase 4 Implementation and Evaluation**

Determine if the *Food Sensations* for Parents (FSP) program:

1. increased the target groups' food literacy behaviours
2. increased the target groups' parenting feeding practices to support healthy eating (Publication 2)
3. is suitable for different demographic characteristics of the target group living in disadvantaged areas.

# Thesis organisation

This thesis contains the present researcher's peer reviewed publication, one manuscript that is under review, and supporting academic works and activities. The publications inform two of the study components: Phase 2 (Study 1) and Phase 4 (program implementation and evaluation). The thesis has five chapters. The contents of the chapters are explained below.

## Chapter 1: Introduction

The content of Chapter 1 (this chapter) introduces the reader to the research and includes background information, aims and objectives.

## Chapter 2: Research methods

The research methods of each of the research phases are presented in this chapter.

**Phase 1** Scoping review

**Phase 2** Qualitative inquiry

Study 1 – parent focus groups

Study 2 – stakeholder semi-structured interviews

**Phase 3** Program development

Forum

Pilot program (version 1)

**Phase 4** Program implementation and evaluation

## Chapter 3: Results

The research findings and results of each of the research phases are presented in this chapter.

**Phase 1** Scoping review

**Phase 2** Qualitative inquiry

Study 1 – parent focus groups (Publication 1)

Study 2 – stakeholder semi-structured interviews

**Phase 3** Program Development

Stage 1 Triangulation of Phase 1 and 2 (version 1) of program

Stage 2 Stakeholder Forum

Stakeholder online survey

Forum – confirmation and consensus outcomes

Stage 3 Pilot Program Development

Stage 2 Pilot program (version 2)

Stage 3 Pilot development and implementation

Stage 4 Changes to program curriculum

**Phase 4** Program implementation and evaluation (Publication 2)

#### **Chapter 4: Discussion**

The content of this chapter reflects on each of the objectives and the strengths and limitations of the four research phases.

#### **Chapter 5: Implications and conclusions**

This final chapter discusses the implications for the study and makes concluding statements.

# Chapter 2 Methods

This chapter describes the methods undertaken for each of the four phases of this study. They were:

- Phase 1 scoping review (systematic search and summary)
- Phase 2 qualitative inquiries Study 1 (parent focus groups) and Study 2 (stakeholder interviews)
- Phase 3 program development: Stage 1 (triangulation), Stage 2 (stakeholder forum), and Stage 3 (program development and piloting)
- Phase 4 program implementation and evaluation.

The methods described here for the qualitative inquiry (Study 1: parent focus group) and Phase 4 (program implementation and evaluation), build on and supplement the information provided in Publication 1 (peer reviewed and published) and Publication 2 (under review for a peer reviewed journal).

## 2.1 Phase 1 Scoping Review

**Research aim** – Explore interventions that include food literacy and positive feeding practices for parents with children aged 0–5 years, to inform the development of evidence based strategies for a parent nutrition education program incorporating food literacy and positive parenting feeding practices.

### **Objectives:**

1. Describe and compare intervention design characteristics and outcomes.
2. Identify effective intervention design characteristics and strategies that aim to improve dietary behaviours and food literacy skills and/or parent feeding practices.
3. Identify reported study recommendations for improving intervention outcomes that can inform a nutrition education program incorporating food literacy and positive parenting feeding practices.

A scoping review was undertaken to summarise the existing literature and identify parent nutrition education programs and interventions as part of the formative research, in order to develop a parent nutrition education program incorporating food literacy and positive parenting feeding practices (*Food Sensations* for Parents of 0–5-year olds) for parents living in disadvantaged areas of Western Australia. Of particular interest for this review are parent interventions that aim to improve dietary behaviours by increasing the use of food literacy skills and positive parent feeding practices.

The advantage of a scoping review is that it sets out to identify all relevant literature regardless of the study design. In addition, a scoping study can provide a rigorous and transparent method for mapping areas of research. The method described by Arksey and O'Malley (2005) was undertaken in this review which involved: identification of the research question and relevant studies; selection of the interventions included in the results; charting the data and collation; summarising and reporting the results.

The scoping review aimed to identify types of interventions, and effective design characteristics and strategies to inform the FSP program design. A scoping review is a systematic process to identify and map intervention duration, objectives, behaviour change theories, curriculum content, delivery mode, types of facilitators and their training, process, and impact evaluation. Scoping reviews provide an opportunity to compare and comprehensively map intervention design characteristics and strategies. Unlike systematic reviews, scoping reviews do not aim to evaluate the quality of studies included (Arksey & O'Malley, 2005).

An initial scoping of the literature was carried out using relevant key words to locate (a) parent focused interventions and (b) parenting feeding practices and mealtimes. Search terms included: parent AND child\* OR infant OR toddler OR preschool AND food literacy OR food skills OR food resource management OR nutrition OR diet OR eating OR feeding AND intervention OR workshop OR education; parent AND child\* or infant OR toddler OR

preschool AND feeding AND feeding practices AND parental feeding AND mealtimes.

Following this, a comprehensive search strategy was developed using the PICO concept (Patient/Problem, Intervention, Comparison and Outcome). The refined search terms are listed in Table 1. The searched data bases were Medline (Ovid) and ProQuest, and included peer reviewed articles published between 2011 and (December) 2021. The time period selected was to ensure interventions identified in the scoping review were current studies that integrated the evolution of evidence available on positive feeding parenting practices.

The search was re-run in March, 2022. Most articles were found using a Boolean search that used the search terms described in Table 1.



Table 1. Literature Search Strategy

|                              | CONCEPT 1  | CONCEPT 2  | CONCEPT 3   | CONCEPT 4  |
|------------------------------|--|--|---|--|
| <b>Key Terms</b>             | “food literac*” or<br>“nutrition* literac*” or<br>“feeding practice*” or<br>“feeding<br>intervention*” or<br>“feeding behaviour*”<br>or “feeding<br>behavior*”<br><br>ADJ3<br>(program* or educat*<br>or project* or<br>initiative* or<br>intervention* or<br>practice*) | parent* or<br>mum or mom<br>or mother or<br>dad or father<br>or caregiver*<br>or “care giver*” | child* or<br>toddler* or<br>infant* or baby<br>or babies or<br>preschool* or<br>“pre school*” | “developed<br>countr*” or “high<br>income countr*”<br>or<br><br>Australia or<br>“United States”<br>or “United<br>Kingdom” or<br>“New Zealand”<br>or Canada |
| <b>Medline</b>               | feeding behavior/ or<br>food literacy/   | exp parents/ or<br>caregivers/ or<br>parenting/  | child,<br>preschool/ or<br>exp Infant/  | developed<br>countries/  |
| <b>MESH subject headings</b> |  |  |   | exp Australia/<br>exp United<br>States/<br>exp United<br>Kingdom/<br>New Zealand/<br>exp Canada/   |
|                              | <b>Limiters</b> – 2012–current, English  |  |   |  |
| <b>Proquest</b>              | Keywords only  |  |   |  |
|                              | <b>Limiters</b> – <b>NOFT</b> , scholarly journals, 2012-current, English  |  |   |  |

### Inclusion criteria

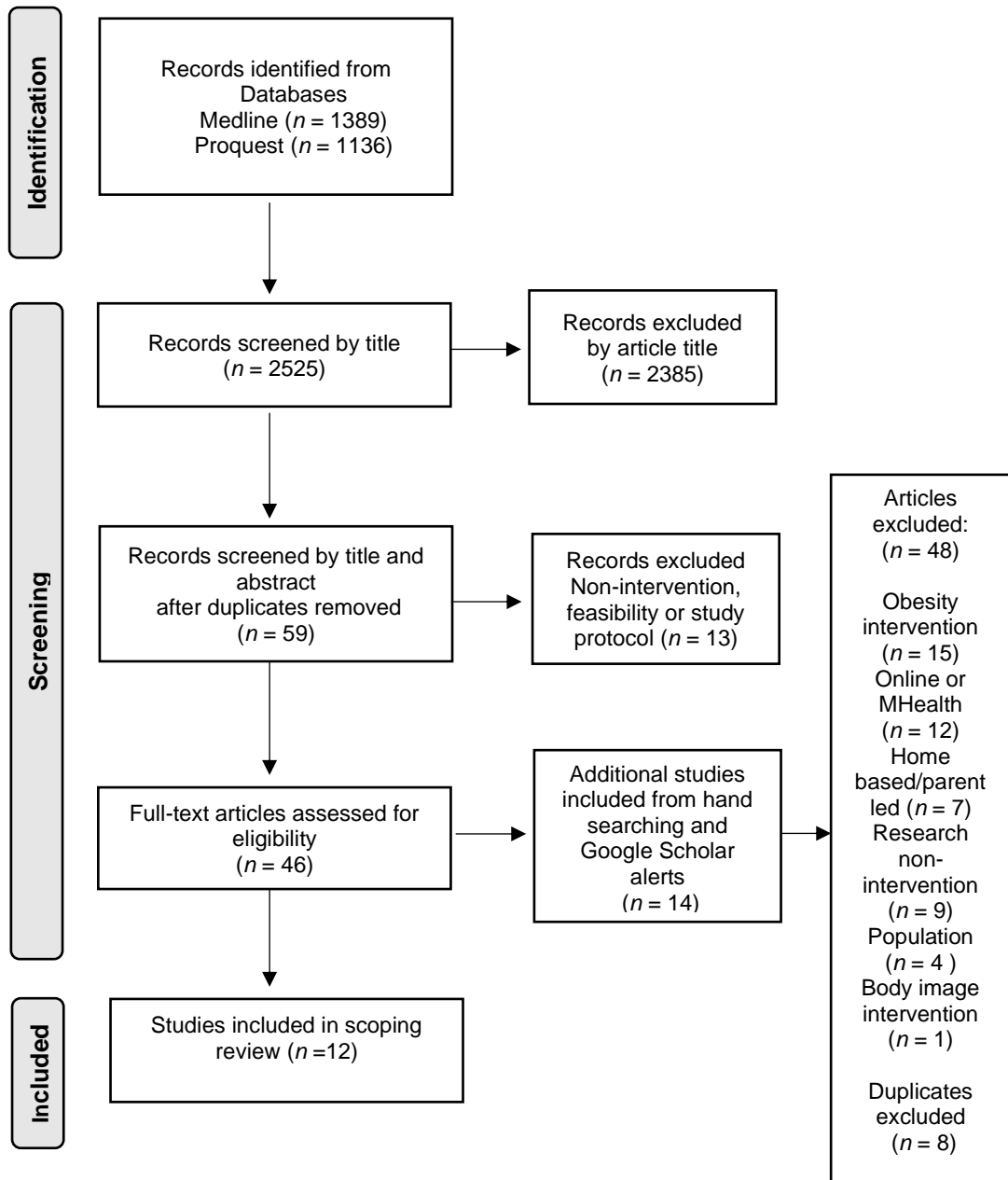
Included studies were with parents of children aged 0–5 years; and a food literacy and/or a parenting feeding practice component, with a focus on improving dietary behaviours. Other lifestyle factors such as physical activity and sleep in conjunction with food literacy and/or parent feeding practices were included together with community-based research interventions. The inclusion and exclusion criteria are provided in Table 2. Studies had to focus on short term results, that is, within the intervention period rather than long-term follow up studies reporting results over several years. Randomised control trials and experimental studies were included. Studies were limited to high income countries. A manual search of the reference list of the identified

articles was conducted to capture additional articles. The search process for the identification of relevant papers is shown in Figure 2.

*Table 2. Inclusion and Exclusion Criteria of Scoping Review*

| <b>Inclusion Criteria</b>   | <b>Exclusion Criteria</b>  |
|---|--|
| 1. Aimed to improve dietary behaviours of parents and or children       | 1. Not in English  |
| 2. Population study parents of children 0–5 years                       | 2. Published prior to 2012   |
| 3. Interventions conducted in high income countries                     | 3. Not in scholarly journals   |
| 4. Included a food literacy and/or parenting feeding practice component | 4. Children primary target audience (minimal parent involvement or none) |
| 5. Community-based intervention evaluations                             | 5. Obesity interventions targeting overweight children or parents        |
| 6. Combination of other health behaviours (e.g., physical activity)     | 6. Exclusively Online or mHealth interventions                           |
| 7. Face to face delivery method   | 7. Interventions established with research as primary aim                |

Figure 2. Preferred Reporting Items for Systematic Reviews and Meta-analyses Diagram of the Scoping Review of Food Literacy and/or Feeding Practices Interventions Targeting Parents with Children aged 0 to 5 years up to March 2022



## **2.2 Phase 2 Qualitative Inquiry**

### **2.2.1 Study 1 Parent Focus Groups – Publication 1.**

Objectives:

1. Assess challenges with feeding and strategies used by parents.
2. Identify barriers to food planning, selection and preparation.

#### **Study 1**

A qualitative inquiry was undertaken with parents to explore the challenges experienced in providing healthy diets for children aged 0–5 years and to gain insight into parents' own experiences. Understanding parents' experiences with feeding young children was crucial in developing insight into the barriers that parents face.

The following methods are reported in Publication 1.

#### **Design**

A qualitative methodological approach with a general inductive inquiry was used for this study. Focus groups were chosen as they provided interaction among participants to explore ideas and values and provide a deeper understanding of how attitudes and factors influence feeding children (Draper & Swift, 2011; Willis, Green, Daly, Williamson, & Bandyopadhyay, 2009). Focus groups enable researchers to explore how social or external concepts, such as child feeding recommendations, shape feeding and food literacy behaviours (Draper & Swift, 2011).

#### **Recruitment**

Purposeful and snowball sampling was used to recruit parents of at least one child aged 0–5 years. Recruitment focused on parents living in socially disadvantaged metropolitan Perth. The SEIFA was used as a proxy measure of socioeconomic status. SEIFA is a suite of four indexes developed from a set of socioeconomic factors collected from Australian census data, which ranks geographic areas based on their relative advantage and disadvantage (Australian Bureau of Statistics, 2018). The Index of Relative Socioeconomic Disadvantage (IRSD) was the specific index used as it measures different

aspects of socioeconomic conditions by geographical areas as each area is given a SEIFA decile which shows how relatively disadvantaged that area is compared with other areas in Australia. SEIFA index indicates low, middle or high using the decile rankings, where low corresponded to deciles 1 to 4, middle to deciles 5 to 7, and high to deciles 8 to 10 (Australian Bureau of Statistics, 2008).

To access the target group, community-based parenting organisations were identified. These organisations enabled access to community child health services, supported parents through the delivery of parenting programs, and provided social activities such as playgroups within their centres. Five organisations located in socially disadvantaged areas (deciles 1–4) were contacted via email and telephone, provided with information about the study, and invited to assist with recruitment. Convenience sampling of parents within the target group occurred with the assistance of organisational staff who displayed flyers within their centres. Parents provided their names and contact details on a sign-up sheet that was then forwarded to the research team.

A structured discussion guide with 12 questions and prompts (Appendix B) was developed after reviewing the literature to establish content validity (Begley, Ringrose, Giglia, & Scott, 2019; Dev et al., 2017; Schuster, Szpak, Klein, Sklar, & Dickin, 2019) and to ensure alignment with the research objectives. Development of the guide was informed by focus group research methods as described by Krueger and Casey (2015). Face validity was confirmed through interviews with stakeholders from organisations that provide parent focused services, such as playgroups, parenting workshops and access to community child health nurses. The first focus group was used as a pilot test, and minor amendments were subsequently made to the wording of the discussion guide. Demographic data (sex, age, number and age of children, family role, household composition, level of education, employment status, postcode, being born in Australia, having English as their first language, and identifying as Aboriginal and/or Torres Strait Islander), were collected via a paper-based questionnaire prior to obtaining informed consent.

## **Data collection**

Focus groups were conducted at the parent focused organisation as parents were familiar with the environment and childcare was available for participants' children. Focus groups were conducted by an experienced facilitator and dietitian (Dr Andrea Begley) and the present researcher. A third researcher attended to take notes and monitor recording equipment and time. Parents were allocated to two groups determined by their youngest child's age (Group A: <2 years and Group B: 2–5 years), reflecting the different stages of growth and development. Four focus groups of between eight and 12 parents were conducted within each age group (between 64 and 96 participants in total), based on estimations of saturation in the literature (Onwuegbuzie & Leech, 2007). Focus groups ran for approximately 1 hour and were audio recorded with parents' informed consent. Crèche facilities were provided, where possible, to support participation, and parents received a \$20 voucher as reimbursement for their time.

## **Data analysis**

Responses to demographic questions were entered into an Excel<sup>®</sup> spreadsheet. Postcodes were converted into SEIFA index deciles using data from the 2016 Census of Population and Housing (Australian Bureau of Statistics, 2016). Postcodes in SEIFA index deciles 1–4 were calculated as low, 5–7 as middle and 8–10 as high socioeconomic status. Focus groups were conducted until saturation of ideas was reached (Saunders et al., 2018). Moderator debriefing with the three researchers occurred directly after each focus group. Audio recordings were transcribed verbatim by a professional service and were managed for analysis using QSR International Nvivo<sup>®</sup>12 Pro software. The present researcher and facilitator each made notes of emerging ideas after listening to the audio recordings. Concurrent data collection and analysis was used with an inductive thematic saturation model as the primary analysis (Braun & Clarke, 2006). The saturation model is the extent to which there is non-emergence of new themes and theoretical insights (Saunders et al., 2018). The phases of the thematic analysis involved familiarisation with the data, generating initial codes, searching and reviewing themes, defining and naming themes, and, finally, producing

alignment with the research question and selecting representative quotations (Braun & Clarke, 2006). Secondary analysis was then applied to the emergent themes, with the application of a theoretical lens to explain and link themes for infant and child feeding. The themes were aligned with constructs of the self-determination theory (SDT): relatedness, autonomy, and competence (Di Pasquale & Rivolta, 2018). The quality of all phases of the research was assessed against the Consolidated Criteria for Reporting Qualitative Research checklist to ensure rigour had been achieved when reporting the findings (Tong, Sainsbury, & Craig, 2007). Demographic and other quantitative data was entered into SPSS® statistics software and analysed using descriptive statistics.

### **2.2.2 Study 2 Stakeholder Interviews**

Objectives:

1. Identify food and nutrition experiences with parents of children aged 0–5 years.
2. Determine the barriers and enablers to engaging parents in parenting workshops or programs from past experiences.
3. Identify perceived gaps in parents' knowledge or skills around feeding children aged 0–5 years.

### **Study 2**

A qualitative methodological approach was conducted with stakeholders, who included health professionals and early childhood experts (e.g., early years support worker, paediatric dietitian, community education officer) working in community-based parenting organisations and local government authorities. In-depth interviews were chosen for the stakeholders as they suitably address a clear list of questions, but also allow for flexibility to probe responses (Draper & Swift, 2011).

### **Design**

Stakeholder interviews used a semi-structured interview script (Appendix C). Questions aimed to identify participants' experiences with parents' food practices, barriers and enablers to engaging parents in workshops and

parenting programs, where parents are seeking nutrition information, and also to identify perceived gaps in parents' knowledge of feeding children. In addition, a questionnaire collecting demographic data about the stakeholder and their organisation was developed, such as age, organisation's sector – for example whether not-for-profit or government – job title and role, and number of years working with parents (Appendix D).

### **Recruitment**

Stakeholders were purposively selected from a list of 21 potential community-based parenting organisations and local government authorities identified by Foodbank WA project staff. Coordinators and/or managers of organisations that worked with parents of children aged 0–5 years were invited to participate in the interviews as they had a close working relationship with many families in their catchment area. Snowball sampling was also used, with stakeholders nominating other key stakeholders to provide further information to contribute to this present research.

### **Data collection**

Interviews were conducted either face to face or via telephone from April to July 2019. All stakeholders interviewed worked with parents and families within community-based parenting organisations or local government authorities. Stakeholders provided informed consent and interviews were audio recorded.

An interview guide with 11 questions and prompts (Appendix C) was developed. The guide was informed by previous research conducted with Foodbank WA's existing FSA food literacy program (Begley, Paynter, & Dhaliwal, 2018).

Interviews were initially conducted by an experienced interviewer (Dr Andrea Begley) who trained the present researcher in the processes. Interviews took from 45 to 60 minutes to complete. Telephone interviews were conducted with stakeholders living outside of the Perth metropolitan area. Stakeholders were recruited throughout this phase until saturation was achieved.



## **Data analysis**

Concurrent data collection and analysis was carried out with an inductive thematic saturation model (Braun & Clarke, 2006). The saturation model is the extent to when non-emergence of new themes is identified and new theoretical insights are gained from the data (Saunders et al., 2018). The phases of the thematic analysis involved familiarisation with the data, generating initial codes, searching and reviewing themes, defining and naming themes, producing alignment with the research question, and selecting examples of quotes (Braun & Clarke, 2006). Demographic and other quantitative data was entered into SPSS<sup>®</sup> statistics software and analysed using descriptive statistics.

After conducting the interviews, the researcher made debriefing notes with emerging ideas to assist with capturing observational data and summarising key points of the interview. Audio recordings of the interviews were transcribed verbatim by a professional service and were managed for analysis using QSR International Nvivo<sup>®</sup>12 Pro software. Content analysis of the interview transcripts was carried out with an inductive approach to develop manifest content from codes and key words created through the analysis software program. Content analysis is a scientific way of evaluating data from interviews by identifying key constructs to develop ideas from the textual data (Kondracki, Wellman, & Amundson, 2002). Through the inductive process a number of topic categories were initially developed, as the analysis progressed themes and subthemes were developed to enable the research objectives to be achieved (Fade & Swift, 2011). The insights into the experiences of stakeholders were used to inform a new food literacy program for parents of 0–5-year olds.

## **2.3 Phase 3 Program Development**

### **Objective**

1. Design and pilot a food literacy program for parents of 0–5-year olds living in disadvantaged areas in Western Australia.

### **2.3.1 Stage 1 Triangulation and Program Design**

First, the findings from Phase 1 and Phase 2 of the research were consolidated into appropriate strategies. Second, a review of Foodbank WA's existing statewide adults food literacy program (Begley, Paynter, et al., 2019a) and parent nutrition and cooking program (Godrich et al., 2018) delivered in the Pilbara region of WA was conducted. Effective design characteristics and strategies of these programs, including food literacy as described by Vidgen and Gallegos (2014), were combined with positive parent feeding strategies, including the division of responsibility (sDOR) feeding strategies as described by Satter (2007). The program curriculum was underpinned by both the IFG (National Health & Medical Research Council, 2012) and the ADG (National Health & Medical Research Council, 2013). The pilot program was produced by triangulating (Pilnick & Swift, 2011) the results of the first three phases of this research. A logic model (Table 12) was developed for the pilot program to explain the program goal, objectives and priorities, inputs and outputs. Short, medium and long-term outcomes were also mapped with detailed process, impact and outcome indicators implemented within community parenting organisations. The draft program curriculum was presented for consensus development at a forum, which included nutrition experts and health professionals working with the target group.

### **2.3.2 Stage 2 Stakeholder Forum**

#### **Design**

A half-day forum was held to gain a consensus, using a nominal group process (McMillan, King, & Tully, 2016) to develop the FSP program objectives, the pilot curriculum, to generate ideas, and to determine priorities and gain consensus on the new program content. The results of the qualitative phase were presented during the first part of the forum (Appendix E) and forum participants were walked through an overview of the 5-week draft program including key messages and experiential learning activities. The following methods describe the nominal group process undertaken during the forum.

## **Recruitment**

A range of stakeholders were recruited including those with expertise in nutrition and/or health promotion. Stakeholders who worked with parents of children aged 0–5 years – including stakeholders who were interviewed in Phase 2 of this research – were recruited via an emailed invitation (see Appendix F). Participants who accepted the invitation were sent a participant information statement by email (Appendix G), which explained the research aims and objectives, who was conducting the research, the nature of their involvement, and that the participants were free to withdraw from the study at any time. Participants were also provided with a consent form (Appendix H) which was either signed and sent back to the researcher before the forum or completed at the time of the forum. A sign-in sheet was also completed by forum participants, which also provided an option for them to give consent to use photographs taken during the forum that could be used later in reports.

## **Data collection**

One week prior to the forum, the research question was sent to forum participants via Qualtrics® survey software. Survey responses were aggregated in an Excel® spreadsheet to summarise open-ended responses into categories.

The research question was, *In your opinion...*

*What do you think needs to be covered in a nutrition education program for parents of 0–5-year olds in disadvantaged areas? (Type as much detail into the blank box as you need.)*

### **2.3.3 Forum – Nominal Group Methods**

The following methods that were undertaken at the forum event with stakeholders were adapted from nominal group techniques as described by McMillan (McMillan et al., 2016). The participants were welcomed, and the purpose and procedure of the forum was explained to them. Printed consent forms were provided for each participant in case they did not bring the

emailed copy, and the purpose and process of the research was outlined to them. The present researcher shared the findings from phases 1 and 2 of the research, and participants were invited to ask questions of the facilitators for further explanation, or to get further details if any of the results presented were not clear to them. The facilitators ensured each person was allowed to contribute, and that discussion of all ideas was thorough without spending too long on a single idea. The process was as neutral as possible to avoid judgement and criticism. The group had the opportunity to suggest novel items for discussion and these were combined into categories, but no ideas were eliminated. The preliminary findings were presented to the stakeholders from the online survey question. The researcher then presented the pilot curriculum via PowerPoint® presentation. Stakeholders were given a paper copy of the program outline, which was also used to manually record their feedback on the reverse side. Additional items raised verbally by participants were posted on flip charts during the forum by the researcher and Foodbank WA staff. Additional time was allowed for further group discussion, then participants were asked to write down all ideas that came to mind when considering the question:

*What do you think needs to be covered in a nutrition education program for parents of 0–5-year olds in disadvantaged areas?*

During this period, participants were asked not to consult or discuss their ideas with others, so as to allow for ideas to be generated in silence. Stakeholders were asked to share the ideas generated and the facilitator recorded each idea on a flip chart using the words spoken by the participant. The round-robin process continued until all ideas had been presented. There was no debate about items at this stage, but participants were encouraged to write down any new ideas that may have arisen from what others shared. The process undertaken ensured all participants had an opportunity to make an equal contribution and resulted in a written record of all ideas generated by the group. At the end, a group discussion was carried out to reach a consensus about the program curriculum.

## **Data analysis**

Survey results and additional data collected at the forum were combined into a table and categorised into the following topics: food and nutrition, food literacy, parenting feeding practices, and other considerations for the program. The table provided a clear format to review the data and to consider if the suggested topics were already covered in the draft program curriculum or could be an addition.

Following the forum, the program curriculum was reviewed, and relevant content collected from the forum participants was added. Finally, behaviour change theories and mechanisms of action (Michie et al., 2011) were identified and detailed against program activities. For example, the activity of sharing a meal with children was identified as an opportunity for modelling behaviour, which enables a parent to identify as a role model and an opportunity for social comparison.

### **2.3.3 Stage 3 Pilot Program Implementation**

Pilot programs were implemented to determine the feasibility of the program prior to implementation on a larger scale. Informal qualitative discussion at the conclusion of each session with parents in an interactive process was conducted to finalise the program lesson plans and to determine the suitability of the program. General observations were recorded into a table at the end of each session together with descriptions of what worked well, changes required to lesson plans, and a list of participant questions and comments.

### **2.3.4 Stage 4 Changes to Program Curriculum**

Feedback and recorded observations from the pilot program implementation were reviewed by the researcher and Foodbank project staff and modifications to the pilot program were made based on the feedback. The final program lesson plans were developed ready for program implementation, which commenced at the beginning of 2020.

## **2.4 Phase 4 Program Implementation and Evaluation**

### **Publication 2**

The following methods are reported in Publication 2.

Program Goal: Improve dietary intakes of parents and children 0–5 years in disadvantaged areas in Western Australia

Research Objectives:

Determine if the FSP program:

1. increased parent's food literacy behaviours
2. increased parent's parenting feeding practices to support healthy eating (Publication 2)
3. is suitable for a range of parents living in disadvantaged areas.

Program Objectives:

1. Improve parents' food literacy behaviours and confidence.
2. Increase application of positive feeding parenting practices to support healthy eating.
3. Increase parents' vegetable consumption.

### **Recruitment**

#### **Face to face programs**

Community-based parenting organisations promoted participant recruitment with flyers, discussions directly with parents, and posts on their organisation's Facebook® page for the face to face programs.

#### **Online programs**

Paid advertisements on Foodbank WA's Facebook® account were used to recruit online program participants who were coordinated through an event management software program, Eventbrite®. Participants were required to be over the age of 18 years and a parent of a child aged between 0–5 years.

## Data collection

A pre- and post-intervention design was used to evaluate both the face to face and online program. Face to face program participants were given paper questionnaires and online participants were emailed questionnaires using Qualtrics® survey software (Appendix I).

Baseline data included sociodemographic characteristics, food literacy behaviours and confidence, feeding practice behaviours, and selected dietary information. Knowledge of healthy foods and dietary behaviours was measured using 13 questions from a modified version of the validated published tool for food literacy behaviours and confidence questionnaire (Begley et al., 2018). Use of positive parenting feeding practices was measured using 10 questions selected from published and validated child feeding questionnaires, including the Feeding Practices and Structure questionnaire (Jansen, Williams, Mallan, Nicholson, & Daniels, 2016; Lohse, 2015; Savage, Rollins, Kugler, Birch, & Marini, 2017) that were matched to the objectives of the weekly workshops or sessions. Child feeding questions were aligned with four food literacy domains: planning and management, selection, preparation and cooking, and eating. Responses were recorded on a Likert scale of frequency from *never* coded as 1, *rarely* (2), *sometimes* (3), *most of the time* (4), and *always* (5). Participants with children less than 6 months, or those without children in their current care, were able to select *not applicable*.

Parents were asked about their own typical daily consumption of vegetables for the preceding month. Vegetable serves were provided in one-half serve increments. There were 10 demographic characteristics questions including: sex of parent, age group, relationship to child (i.e., parent or carer), number of children under 18 years, age of children under 5 years, household structure, education level, employment status, post code, English as the first language, and whether they identify as Aboriginal or Torres Strait Islander. Postcodes were converted to a SEIFA index of low, middle or high.

## Data analysis

Data were analysed using SPSS®(IBM) version 26. Results were considered statistically significant if  $p < 0.05$ . Paired t-tests were used for assessing change in food literacy behaviours, positive parenting feeding practices and vegetable intake questions. The five-point Likert scale was also divided into two categories for analyses: *never to sometimes* (1–3) and *most of the time and always* (4–5). McNemar’s test was then used to assess the change from pre- to post-test. A participant shifting from *never to sometimes* (1–3) at pre-program to *most of the time and always* (4–5) post program was classified as improvement for the variable. Conversely, the variable was deemed to be reducing for a participant who went from *most of the time and always* (4–5) at pre-program to *never to sometimes* (1–3) post program. Net improvement was calculated as the difference between the proportion of participants who improved and who did not. Multivariate logistic regression analysis was used to identify demographic variables associated with improved food literacy behaviours and parenting feeding practices. Post program outcomes were assessed with the multivariable logistics regression after adjusting for baseline behaviours. Effects of variables are represented as odds-ratio and associated 95% confidence intervals.



# Chapter 3 Results

This section reports the results from the four phases of this research: Phase 1 scoping review, Phase 2 qualitative inquiry (studies 1 and 2), Phase 3 program development, and Phase 4 program implementation and evaluation.

## 3.1 Scoping review

Objectives:

1. Describe and compare intervention design characteristics and outcomes.
2. Identify effective intervention design characteristics and strategies that aim to improve dietary behaviours and food literacy skills and or parent feeding practices.
4. Identify reported study recommendations for improving intervention outcomes that can inform a parent nutrition education program incorporating food literacy and positive parenting feeding practices.

### Results

A total of 12 articles met the inclusionary criteria and were included in the review. The articles forming this scoping review are summarised in Table 3.

Table 3. Summary Of Parent Food Literacy And/Or Feeding Practices Interventions Targeting Parents With Children Aged 0 To 5 Years

| Author, year, paper title  | Design and sample population   | Study name and objectives   | Food literacy component | Parenting feeding practices component |
|--|--|---|-------------------------|---------------------------------------|
| De Bock, Breitenstein, and Fischer (2012).<br><i>Positive impact of a preschool-based nutritional intervention on children's fruit and vegetable intake: results of a cluster-randomized trial.</i>  | Healthy Children aged 3–6 years.<br>N = 377.<br>Cluster randomised study.<br>Germany.  | 'Komm mit in das gesunde Boot' ('Come aboard the health boat').<br>Assess the short term impact of a nutritional intervention aimed at (long-term goal) reducing childhood overweight in German preschool children.   | ✓                       | ✓                                     |
| Fangupo et al. (2015).<br><i>Impact of an early life intervention on the nutrition behaviours of 2-year old children: a randomized controlled trial.</i>   | N = 666 parents of children from birth to 2 years.<br>RCT.<br>New Zealand.   | To assess the effect of intervention from 0 to 18 months of age on food and nutrient intake, eating behaviours, and parental feeding practices in 18–24-month old children.   | ✓                       | ✓                                     |
| Fisher et al. (2019).<br><i>Efficacy of a food parenting intervention for mothers with low income to reduce preschooler's solid fat and added sugar intakes: a randomized controlled trial.</i>  | N = 59 intervention.<br>N = 60 control.<br>Mothers of 3 to 5-year old children.<br>RCT.<br>USA.                              | Food, Fun, and Families (FFF).<br>To evaluate the efficacy of the 12-week parenting intervention for reducing children's consumption of "empty" calories from solid fat and added sugar (SoFAS).  |                         | ✓                                     |
| Fox et al. (2020).<br><i>Rationale, design and study protocol of the 'Strong Families Start at Home' feasibility trial to improve the diet quality of low income, ethnically diverse children by helping parents improve their feeding and food preparation practices.</i> | N = 15 low income mother child dyads, children aged between 2–5 years.<br>Non-experimental pilot intervention study.<br>USA. | Strong Families Start at Home.<br>Home based pilot intervention aimed to help parents identify and implement positive feeding practices, tailor their feeding practices to their child's unique needs, and utilise healthy food shopping and preparation strategies.<br><br>To determine feasibility and acceptability of intervention and preliminary efficacy of intervention on changes in children's diet quality (primary outcome), parental feeding practices and availability of healthy foods in the home (secondary outcomes).<br>Calculate effect sizes for future randomised controlled trial. | ✓                       | ✓                                     |

| Author, year, paper title   | Design and sample population  | Study name and objectives  | Food literacy component | Parenting feeding practices component |
|---|---|--|-------------------------|---------------------------------------|
| Garcia, Athifa, Hammond, Parrett, and Gebbie-Diben (2020).<br><i>Community-based cooking program 'Eat Better Feel Better' can improve child and family eating behaviours in low socioeconomic groups.</i>                 | N = 516 participants, of which N= 358 (83%) were parents and caregivers of children under 5 years of age.<br>Evaluation of immediate and sustained impacts of program.<br>Scotland U.K. | EBFBCP (eat better feel better cooking programme).<br>Improve family eating and cooking behaviours and child consumption of specific foods, identified as being popular choices consumed by the Scottish population. | ✓                       |                                       |
| Hughes et al. (2020).<br><i>Short term effects of an obesity prevention program among low income Hispanic Families with pre-schoolers.</i>  | N = 112 mother child dyads (urban).<br>N = 143 mother child dyads (agricultural community).<br>RCT.<br>USA.   | SEEDS (strategies for effective eating development).<br>Short term analysis focused on parent feeding behaviours, knowledge and improving self-efficacy of feeding children.   |                         | ✓                                     |
| Jancey et al. (2014).<br><i>Dietary Outcomes of a Community-Based Intervention for Mothers of Young Children: a Randomised Controlled Trial.</i>  | Mothers of children 0–5 years attending playgroups located in 60 neighbourhoods in Perth, Western Australia.<br>N = 249 intervention.<br>N = 272 control group.<br>RCT.<br>Australia.   | Increase the level of fruit, vegetable and fibre intake and decrease the fat and sugar consumption of mothers with young children (0–5 years) via the playgroup setting.   | ✓                       |                                       |
| LoRe, Leung, Brenner, and Suskind (2019).<br><i>Parent-directed intervention in promoting knowledge of pediatric nutrition and healthy lifestyle among low SES families with toddlers: A randomized controlled trial.</i> | Parents of 13 to 16-month old children living in low socioeconomic status (SES) areas.<br>N = 55 intervention.<br>N = 49 control.<br>RCT.<br>USA.                                       | Healthy lifestyle intervention targeting low socioeconomic families.<br>To determine the efficacy of the intervention in improving parental knowledge of paediatric nutrition and healthy lifestyle.                 | ✓                       | ✓                                     |

| Author, year, paper title  | Design and sample population   | Study name and objectives  | Food literacy component | Parenting feeding practices component |
|--|--|--|-------------------------|---------------------------------------|
| Marsh et al. (2020). <i>Results of the 3 Pillars Study (3PS), a relationship-based programme targeting parent-child interactions, healthy lifestyle behaviours, and the home environment in parents of preschool-aged children: A pilot randomised controlled trial.</i> | Parents of children aged 2–4 years whose daily screen use exceeded current recommendations for this age group (i.e., 1 hour/day).<br>N = 54 participants.<br>N = 27 intervention.<br>N = 27 wait list.<br>RCT.<br>New Zealand. | 3 Pillars Study.<br>To promote routines around healthy lifestyle behaviours, including sleep, limited screen use, and family meals, within the context of positive, reciprocal parent-child interactions.  | ✓                       | ✓                                     |
| Miller, Kaesberg, Thompson, and Wyand (2017). <i>“What’s Cooking?”: Qualitative Evaluation of a Head Start Parent-Child Pilot Cooking Program.</i>   | Focus groups.<br>N = 15 participants.<br>Parents and children of Head Start Pre-schoolers.<br>Qualitative evaluation.<br>USA.  | What’s Cooking.<br>Qualitative evaluation of What’s Cooking Pilot Program to better understand parent perceptions of the class experiences, tools, and translation of those experiences at home.<br>Cooking program with inclusion of parenting strategies to enhance health behaviours of parents and children and reduce childhood obesity. Aimed to encourage parents to include children in the cooking process in hopes to initiate and sustain healthy behaviours into the future. | ✓                       | ✓                                     |
| Myers et al. (2019). <i>Confident and understanding parents (CUPs) – a child nutrition and active play pilot intervention for disadvantaged families attending supported playgroups in Victoria Australia.</i>   | Parents of 0–4-year old’s from Culturally and Linguistically Diverse (CALD) backgrounds.<br>N = 9 facilitators.<br>N = 64 parents.<br>Qualitative and quantitative evaluation.<br>Australia.                                   | CUPS (confident and understanding parents).<br>Findings from CUPs pilot intervention to improve child nutrition and active play-related outcomes for children in vulnerable families.  |                         | ✓                                     |

| Author, year, paper title   | Design and sample population  | Study name and objectives   | Food literacy component | Parenting feeding practices component |
|---|---|---|-------------------------|---------------------------------------|
| Roset-Salla, Ramon-Cabot, Salabarnada-Torras, Pera, and Dalmau (2016).<br><i>Educational intervention to improve adherence to the Mediterranean diet among parents and their children aged 1–2 years.</i> | Parents of children from 1 to 2 years of age.<br>N = 78 intervention.<br>N = 103 control.<br>RCT.<br>Spain. | The EniM study (nutritional intervention study among children from Mataró).<br>Evaluate effectiveness of an educational program on healthy food alimentation (availability), and acquisition of healthy eating habits among parents and their children. | ✓                       |                                       |

Design characteristics and strategies were identified and summarised into a table (Table 4) to compare the 12 interventions. Intervention elements identified include: theory or framework underpinning interventions, number of sessions, session length and frequency, skills of facilitator, delivery mode, summary of activities together with key messages or topics (including which components of food literacy and parent feeding practices were included), and setting and duration.

*Table 4. Intervention Design Characteristics Of Parent Food Literacy And/Or Feeding Practices Interventions Targeting Parents With Children Aged 0 To 5 Years*

| Intervention name  | Theory or framework   | # Sessions  | Session length and frequency | Facilitator  | Delivery mode   | Intervention activities/key messages or topics   | Setting & duration   |
|--|---|-------------|------------------------------|--|---|--|--|
| 1. 'Komm mit in das gesunde Boot' ('Come aboard the health boat')(De Bock et al., 2012). | Bandura Social Learning Theory (SLT).<br>Zajonc's Exposure Effect Theory (EET). | 15.         | 2 hours weekly.              | Nutrition expert.  | Face to face. Ten modules only targeted children, another five parents and children or parents exclusively. | Activities included; familiarising different food types, preparation methods, cooking and eating meals together in groups of children, teachers and parents. Healthy drinking behaviours. <b>Food literacy</b> (select, cook, eat) Dietary requirements, preparation and eating Parents and children cooking together. <b>Parent feeding practices</b> Role modelling, children's eating behaviours. | 18 pre-schools in South Germany. Total = 30 hours, over 6-month period.    |
| 2. Fangupo et al. (2015).  | Not provided.   | 8 contacts. | Not provided.                | Trained research staff under guidance of nutritionists and paediatricians. | Face to face contacts and one group session.  | Mothers were allocated to one of four study groups. Topics included; interactive stations targeting healthy snack and drink ideas, healthy food shopping, and basic food label reading skills. <b>Food literacy</b> (select) Food groups, variety. <b>Parent feeding practices</b> Family meals, role modelling, authoritative feeding style.  | Home setting over 18-month period.<br><br>Length of sessions not provided. |

| Intervention name                                    | Theory or framework   | # Sessions  | Session length and frequency | Facilitator   | Delivery mode  | Intervention activities/key messages or topics   | Setting & duration   |
|--|---|-------------|------------------------------|---|--|--|--|
| 3. Food Fun and Families (Fisher et al., 2019).      | Authoritative parenting practices.  | 12.         | 1 hour weekly.               | Graduate-level interventionists who received training from clinical psychologists, with expertise in behavioural interventions. | Face to face.  | Group discussion and collective (group) problem solving. Interactive demonstrations and setting goals. \$400 provided to each family as incentive to attend.<br><b>Parent feeding practices</b><br>Feeding practices to promote structure, establishing eating routines, setting limits, and providing children with guided choices. Weekly goals.   | University clinic setting over 12 weeks.<br><br>Total = 12 hours.                            |
| 4. Strong Families Start at Home (Fox et al., 2020). | Social cognitive theory (SCT), self-determination theory (SDT), and self-perception theory (SPT). | 3 contacts. | Not provided.                | Community health worker (CHW) trained in motivational interviewing.   | Face to face visits in the home.<br>Text messaging.<br>Mailed materials. | Pilot intervention, delivered in both English and Spanish. Phase 1 (first 3 months) parents received three x monthly home visits and text-messages twice a week. Video feedback, home motivational interviewing and tailored feedback around home mealtime practices. In home food preparation and cooking demonstration and training. Phase 2 parents received monthly mailed materials, text-messages twice a week, and monthly phone calls to support and reinforce the healthy eating knowledge and behaviours gained in the first 3 months.<br><b>Food literacy</b> (plan, cook)<br>Preparation of family meals | Home based intervention delivered over 6-month period.<br><br>Length of visits not provided. |



| Intervention name                | Theory or framework        | # Sessions | Session length and frequency | Facilitator                | Delivery mode | Intervention activities/key messages or topics  | Setting & duration  |
|----------------------------------|----------------------------|------------|------------------------------|----------------------------|---------------|---|---|
| 5. EBFBCP (Garcia et al., 2020). | Not reported.              | 6.         | 2 hours weekly.              | Community trained chefs.   | Face to face. | <p><b>Parent feeding practices</b><br/>Establishing routines, family meals. Goal setting and weekly planning. Cooking class with healthy eating education elements and practical activities.</p> <p><b>Food literacy</b> (select, cook, eat)<br/>Eat well guide informed healthy eating messages, label reading, understanding traffic light system, healthy breakfasts, packed lunches and takeaway foods.</p>   | Community centres.<br><br>Total = 12 hours.                   |
| 6. SEEDS (Hughes et al., 2020).  | Self-determination theory. | 7.         | Not provided.                | Trained group facilitator. | Face to face. | <p>Both parent and child curriculum. Parent sessions and separate child sessions (held separately but simultaneously) and a family session (parent and child together). Video based instruction demonstrating common family scenarios and experiential activities for participants.</p> <p>Child activities focus on play centred activities including exploring and trying new foods and recognising internal cues of hunger and fullness.</p> <p><b>Food literacy</b> (select, cook, eat)<br/>Parent and children eat a meal at the conclusion of each lesson. Improve knowledge of best practice feeding and increase parents' self-</p> | Pre-schools held after school times, for low income families. |

| Intervention name        | Theory or framework                                | # Sessions | Session length and frequency | Facilitator                         | Delivery mode                        | Intervention activities/key messages or topics   | Setting & duration                 |
|--------------------------|--|------------|------------------------------|-------------------------------------|--------------------------------------|--|------------------------------------|
|                          |  |            |                              |                                     |                                      | <p>efficacy regarding feeding their children.</p> <p><b>Parent feeding practices</b><br/>           Teach parents and children to pay attention to children's internal cues of hunger and fullness.<br/>           Teach parents to help their children learn to explore and try novel foods such as fruits and vegetables.<br/>           Encourage children to explore and try new foods, use more responsive or child-centred feeding practices (e.g., being responsive to fullness cues) and less parent-centred feeding practices (e.g., pressure to eat), provide more mealtime structure, and show more authoritative feeding styles.</p> <p>Topics included;<br/>           Parental strategies to promote appropriate child portion sizes, structure and routines in the family environment, and dealing with outside influences on child eating.</p> |                                    |
| 7. Jancey et al. (2014). | SCT, Transtheoretical model (Stages of Change TTM) | 5.         | 30 minutes. Monthly sessions | Final year health science students. | Face to face and home self-learning. | Multi-strategy physical activity and nutrition program at playgroups. Participants provided with a comprehensive information booklet,  | Home based and within a playgroup. |

| Intervention name      | Theory or framework               | # Sessions  | Session length and frequency                  | Facilitator          | Delivery mode | Intervention activities/key messages or topics   | Setting & duration  |
|------------------------|-----------------------------------|-------------|---|----------------------|---------------|--|---|
|                        | and motivational interviewing.    |             | delivered during weeks 1, 5, 9, 13,17 and 21. |                      |               | menu planner, nutritional information panel guide, guidelines for the formulation of a shopping list, recipe booklets and bi-monthly 'chatty' newsletter providing health information.<br><b>Food literacy</b> (plan, select, cook)<br>Nutrition content based on Australian Dietary Guidelines, family dinner planning, menu planning, shopping, label reading, modifying recipes, healthy cooking methods.   | setting over 6 months.<br><br>Total = 2.5 hours.  |
| 8. LoRe et al. (2019). | Theory of Behaviour Change (TBC). | 12 modules. | Length not provided. Weekly.                  | Trained facilitator. | Face to face. | Home visiting intervention using one on one education sessions. 12 modules, topics included;<br><b>Food literacy</b> (plan, select, manage, cook)<br>Meal planning, grocery shopping on a budget, increasing, reading nutrition labels and incorporating five food groups into diet. Cook fresh food at home and avoiding processed foods. Maximising healthy and minimising unhealthy nutrients in diet.<br>Strategies to save money while food shopping. Limiting intake of sugary drinks and drinking more water.<br>Selecting healthy options from fast food and restaurant menus. | 6-month online curriculum (videos) delivered via 12 x weekly home visits.<br><br>Length of visits not provided. |

| Intervention name                        | Theory or framework   | # Sessions | Session length and frequency | Facilitator          | Delivery mode                                  | Intervention activities/key messages or topics  | Setting & duration                                   |
|--|---|------------|------------------------------|----------------------|--|---|--|
| 9. 3 Pillars Study (Marsh et al., 2020). | Attachment Theory (AT). Based on the Connecting Activities, Routines, and Environments (CARE) framework, (1) coordinated routines | 1.         | One half-day workshop.       | Trained facilitator. | Face to face. 6 weeks access to study website. | <p>Food preparation safety, allergies, and choking hazards. Strategies to plan and prepare meals amid busy schedules.</p> <p><b>Parent feeding practices</b><br/>Empowering parent as role models for healthy lifestyle development. Positive food socialisation behaviours while introducing new foods. Curriculum emphasised parent knowledge of child healthy habit development and their influence on this development.</p> <p><b>Others</b><br/>Ways to incorporate and promote physical activity with child. Promoting appropriate dental health hygiene. Physical activity with limited facilities.</p> <p>Pilot study conducted to assess the effectiveness of a 6-week program. Topics covered three 'pillars', including sleep, family meals, and free play.</p> <p><b>Food literacy</b> (plan, select)<br/>Meal planning, planning meals for busy nights, adding vegetables and fruit to meals.</p> <p><b>Parent feeding practices</b></p> | Workshop at the University of Auckland over 6 weeks. |

| Intervention name                         | Theory or framework   | # Sessions | Session length and frequency | Facilitator  | Delivery mode | Intervention activities/key messages or topics   | Setting & duration   |
|---|---|------------|------------------------------|--|---------------|--|--|
| 10. What's Cooking (Miller et al., 2017). | (2) harmonious communication<br>(3) mutual co-operation<br>(4) emotional ambience<br>SCT. | 4.         | Two hours Monthly.           | Dietitians from community nutrition organisations. | Face to face. | Family meals, repeated exposure, responsive feeding.<br><br>4-week program weekly meetings (parents and children together). Families learned a health topic, cooked a meal based on topic and participated in an engaging group physical activity.<br><b>Food literacy</b> (select, cook, eat)<br>Parent and child cook together. Included take home cooking equipment cup measures, measuring spoon set, grocery cards, wire whisk, children activity buckets, mixing bowl, recipe ingredients.<br><b>Parent feeding practices</b><br>Family meals, role modelling. | Head Start Pre-schools locations in underserved, low income communities.<br><br>Monthly for 7 months, over 1 year.<br>Total = 8 hours. |

| Intervention name   | Theory or framework  | # Sessions | Session length and frequency        | Facilitator   | Delivery mode                          | Intervention activities/key messages or topics   | Setting & duration  |
|---|--|------------|-------------------------------------|---|--|--|---|
| 11. CUPS (Myers et al., 2019).  | Socio-Economic Model of Health.  | 6.         | 2 hours Weekly.                     | Supported Playgroup facilitators trained to deliver messages. | Face to face.                          | Over 6-week period supported playgroup facilitators selected six (from 10) evidence based nutrition and active play messages to discuss with parents during 2 hour SP session.<br>Messages included;<br>1. Play outside every day.<br>2. Turn off the TV.<br>3. Eat fruit and vegetables.<br>4. Develop routines for eating, sleep and play.<br>5. Let children feed themselves.<br>6. Use a cup.<br>7. Enjoy home cooked foods with your children.<br>8. Start food at around 6 months.<br>9. Breastfeed your baby.<br>10. Use local children's services.<br><b>Parent feeding practices</b><br>Develop routines, let children feed themselves. | 6 x supported playgroups in two disadvantaged locations in Victoria.<br><br>Total = 12 hours. |
| 12. EniM study (Roset-Salla et al., 2016). (nutritional intervention study among children from Mataró). | Model of participatory-active education was used to achieve practical skills in addition to nutritional knowledge. | 4.         | 90 minutes. Frequency not provided. | Workshops delivered by nurses trained in nutrition.           | Face to face. Maximum 15 participants. | Topics included; food groups, Mediterranean diet (MD), food labels & physical activity. Progressive introduction of food groups to children.<br><br><b>Food literacy</b> (select, cook)  | School setting.<br><br>Total = 6 hours.   |

| Intervention name | Theory or framework | # Sessions | Session length and frequency | Facilitator | Delivery mode | Intervention activities/key messages or topics | Setting & duration |
|-------------------|---------------------|------------|------------------------------|-------------|---------------|--|--------------------|
|-------------------|---------------------|------------|------------------------------|-------------|---------------|--|--------------------|

Food groups, food labels, appropriate foods for infants/children. Cooking and recipes.

## Interventions

Seven interventions (58%) described research of randomised control trials (RCTs) (Fangupo et al., 2015; Fisher et al., 2019; Hughes et al., 2020; Jancey et al., 2014; LoRe et al., 2019; Marsh et al., 2020; Roset-Salla et al., 2016). In addition there was one cluster randomised study, (De Bock et al., 2012) one feasibility study (Fox et al., 2020), and three program evaluation papers (Garcia et al., 2020; Miller et al., 2017; Myers et al., 2019). Sample sizes ranged from 15 (Fox et al., 2020; Miller et al., 2017) to 666 participants (Fangupo et al., 2015). Interventions ranged from 2.5 hours (Jancey et al., 2014) to 30 hours (De Bock et al., 2012), with most interventions having 12 hours face to face contact with participants (Fisher et al., 2019; Garcia et al., 2020; Myers et al., 2019). Two studies were conducted in Australia (Jancey et al., 2014; Myers et al., 2019). The remaining studies were conducted in the USA, (Fisher et al., 2019; Fox, Pac, Devaney, & Jankowski, 2004; Hughes et al., 2020; LoRe et al., 2019; Miller et al., 2017) Germany, (De Bock et al., 2012) United Kingdom, (Garcia et al., 2020) Spain (Roset-Salla et al., 2016) and New Zealand (Fangupo et al., 2015; Marsh et al., 2020).

Nine interventions incorporated food literacy skills (De Bock et al., 2012; Fangupo et al., 2015; Fox et al., 2020; Garcia et al., 2020; Jancey et al., 2014; LoRe et al., 2019; Marsh et al., 2020; Miller et al., 2017; Roset-Salla et al., 2016). Three of these interventions incorporated a cooking component (De Bock et al., 2012; Garcia et al., 2020; Miller et al., 2017) of which two interventions had both parents and children cooking together (De Bock et al., 2012; Miller et al., 2017). Only two studies described interventions that were developed specifically for parents to improve their own dietary behaviours (Jancey et al., 2014; Roset-Salla et al., 2016). Most interventions had a focus on parenting feeding practices ( $n = 10$ ). There was variation in the behaviour change theories used in the studies with the social cognitive theory (SCT) being reported in three studies (Fox et al., 2020; Jancey et al., 2014; Miller et al., 2017). Other theories or frameworks reported included social learning theory (De Bock et al., 2012), self-determination theory (Fox et al., 2020; Hughes et al., 2020), trans theoretical model (Jancey et al., 2014), theory of behaviour change (LoRe et al., 2019), attachment theory (Marsh et al., 2020)



and others. Interventions were delivered within a number of settings including pre-schools (De Bock et al., 2012; Hughes et al., 2020; Miller et al., 2017), within the home (Fangupo et al., 2015; Fox et al., 2020; LoRe et al., 2019), university clinics (Fisher et al., 2019; Marsh et al., 2020), playgroups (Jancey et al., 2014; Myers et al., 2019), within a school (Roset-Salla et al., 2016), and a community centre (Garcia et al., 2020). Seven interventions (58%) recruited participants who were classified as low income (Fisher et al., 2019; Fox et al., 2020; Hughes et al., 2020; Miller et al., 2017) or described recruiting parents from low socioeconomic areas (Garcia et al., 2020; LoRe et al., 2019) or disadvantaged areas (Myers et al., 2019).

The reported outcomes of each intervention together with the effective design elements and strategies and authors recommendations are described in Table 5.

Table 5. Intervention Reported Outcomes, Effective Intervention Elements, Strategies And Recommendations

| Intervention name   | Reported outcomes (impact evaluation)  | Effective elements, strategies and study recommendations  |
|---|--|---|
| 1. 'Komm mit in das gesunde Boot' ('Come aboard the health boat') (De Bock et al., 2012). | <p><b>Diet</b><br/>Children's fruit and vegetable intakes increased significantly.<br/>Increase in fruit and vegetable intake of children by 0.23 and 0.15 portions daily.<br/>No significant changes in the consumption of water, sugared drinks or anthropometric measurements were noted.</p>   | <p>A high percentage of children and parents reached and authors recommended pre-schools as an ideal setting to target parent and children interventions.<br/>Targeting children early when eating behaviours are easier to change may reduce risk of being overweight or obese.</p>  |
| 2. Fangupo et al. (2015).   | <p><b>Diet</b><br/>Intervention showed no effect on the food, energy, and nutrient intakes or eating behaviours of 2-year old children.<br/><b>Parent feeding practices</b><br/>Only minimal effects on a limited number of parental feeding practices. Small significant difference was found at 18 months of age.<br/>Intervention parents allowed children greater control over eating and exerted less pressure on children to eat at mealtimes.<br/>At 24 months of age, parents were more likely to encourage consumption of nutrient-dense foods.</p> | <p>Small changes to parental feeding practices were seen however, authors reported developing a different intervention design for future interventions. They concluded early life interventions that focus on parent education and support do not appear to be sufficient to modify parent feeding and infant eating.</p>   |
| 3. Food Fun and Families (FFF) (Fisher et al., 2019).                                     | <p><b>Diet</b><br/>At post-intervention, FFF children consumed ~ 94 kcal or 23% less daily energy from solid fat and added sugars (SoFAS) than children in the control group.<br/><b>Parent feeding practices</b><br/>Adjusting for baseline levels FFF mothers also displayed a greater number of authoritative parenting practices when observed post-intervention with their child at a buffet-style meal.</p>  | <p>Addressing parenting strategies and skills are important for achieving nutritional targets.<br/>Formative work to align intervention goals with maternal goals for parenting and feeding children may be important for engaging mothers for this target group.<br/>May be benefits of aligning nutritional and feeding recommendations with broader maternal goals around child development and the parent-child relationship.</p> |

| Intervention name                                    | Reported outcomes (impact evaluation)  | Effective elements, strategies and study recommendations  |
|--|--|---|
| 4. Strong Families Start at Home (Fox et al., 2020). | <p><b>Parent feeding practices</b></p> <p>Pre-pilot study results – mothers reported a decrease in the use of controlling food parenting practices, <i>pressure to eat</i> and <i>food as a reward</i>. Mothers also reported an increase in the use of supportive food parenting practices, <i>involvement</i>, <i>environment</i> and <i>modelling</i>.</p>  | <p>For families that have a lack of cooking facilities program incentives could include kitchen supplies.</p> <p>The use of innovative meal video recording and hands on home based approach was a successful strategy for busy families (rather than face to face intervention).</p> <p>Parents need tailored, not generic advice. Using smart phones to video record meals was convenient and realistic and could easily be scaled-up given smart phones are so widely used across income groups (than using video equipment).</p>  |
| 5. EBFBCP (Garcia et al., 2020).                     | <p><b>Diet</b></p> <p>The immediate effects were families ate less takeaway/fast foods (10% reduction) and ready meals (15% reduction). Children’s consumption of discretionary food/drinks was significantly reduced after the intervention for sugary drinks (10% reduction), savoury snacks (18%), biscuits (17%), sweets/chocolates (23%) fried/roasted potatoes (17%) and savoury pastries (11%). The number of fruit and vegetable portions increased and the number of biscuit portions decreased. Improvements in child fruit &amp; vegetables, decrease in discretionary foods and convenience foods.</p> <p><b>Parent feeding practices</b></p> <p>Intervention had positive impacts to family eating practices.</p> | <p>Using smart phones for meal video recording and text messaging was a novel way to use technology and served as a personal and relevant starting point for a discussion about parental feeding practices.</p> <p>The intervention was tailored to the child’s appetitive traits (e.g., satiety responsiveness (sensitivity to internal satiety signals), food responsiveness (sensitivity to external food cues), and food fussiness), and may have increased the likelihood for efficacy.</p> <p>Researchers recommend the following for future interventions:</p> <ul style="list-style-type: none"> <li>• Limit program to 4 weeks as researchers saw a rapid decline in attendance after Week 4 (70% down to 55%).</li> <li>• Provision of childcare.</li> <li>• Include parent and child cooking.</li> </ul> <p>Deliver program through existing community-based organisations to increase participation of hard to reach target groups.</p> |

| Intervention name               | Reported outcomes (impact evaluation)  | Effective elements, strategies and study recommendations   |
|---------------------------------|--|--|
| 6. SEEDS (Hughes et al., 2020). | <p><b>Food literacy</b><br/>Parental food label reading increased.<br/>Parents cooked more from scratch (20% increase).<br/>Most changes were sustained at a median of 10 months' follow up.</p> <p><b>Diet</b><br/>Effects on child eating behaviour were minimal; only the number of different vegetables tried showed significant pre and post differences.<br/>Maternal reports of an increase in the number of different vegetables that children had tried was the only significant change in child eating behaviours resulting from the intervention.</p> | <p>Family focused feeding approaches are recommended for intervention success, including maternal feeding behaviours and knowledge of responsive feeding behaviours.<br/>Videos and collaborative learning activities were successful in mother understanding intervention messages.<br/>Further evidence of intervention efficacy around maternal feeding practices could be strengthened with using multiple research methods (interviews, repeated observations or questionnaires).</p> |
| 7. Jancey et al. (2014).        | <p><b>Parent feeding practices</b><br/>The intervention had predicted effects on parental feeding practices, styles, and knowledge in the pre to post-comparisons.</p> <p><b>Diet</b><br/>Intervention was successful in improving dietary intake in the intervention group participants with statistically significant improvements in consumption of: total fat and fibre, fruit and vegetables, wholegrain, fat, dairy products, lean meat and chicken.<br/>There were no significant changes in the consumption of sweet drinks.</p>                         | <p>Playgroups potentially provide a viable setting to recruit, engage and retain hard to reach group of mothers of young children in interventions that support the adoption of health-enhancing behaviours.</p>   |
| 8. LoRe et al. (2019).          | <p><b>Food literacy</b><br/>Significantly increased parent nutritional knowledge and knowledge of healthy dietary behaviours compared with the control group.</p>  | <p>Curriculum was interwoven with behaviour change strategies. Consistent messaging was included to reinforce concepts. Referred to as the "3Ms": Make, Model, and Mind, messages were interwoven throughout the curriculum to emphasise the importance of making healthy meals, modelling healthy behaviours, and minding healthy dietary decisions.<br/>Utilising a primary prevention approach through early education of parents rather than an obesity prevention approach.</p>       |

| Intervention name                          | Reported outcomes (impact evaluation)  | Effective elements, strategies and study recommendations  |
|--|--|---|
| 9. 3 Pillars Study (Marsh et al., 2020).   | <p><b>Diet</b><br/>No significant difference between the groups at six and 12 weeks with dietary measures.</p>   | <p>Novel approach rather than behaviour change approach, the study promoted mutually responsive orientation between the parent and child (positive parent-child connection and relationships). The use of this approach was highly acceptable by parents and may be a promising area of focus for obesity interventions.</p> <p>Supporting parents with the barriers to providing healthy behaviours through appropriate responses and a relationship approach (e.g., responsive parenting interactions). For example, as a result, they may be less likely to engage in adverse parenting behaviours, as they switch focus from the outcome (e.g., eating vegetables), to the process for developing healthy eating behaviours (e.g., positive parent-child interactions at the dinner table).</p> |
| 10. What's Cooking (Miller et al., 2017).  | <p><b>Diet</b><br/>The child's asking behaviour contributed to an increase in fruit and vegetable purchases and consumption in families.</p> <p><b>Food literacy</b><br/>Parents perceived child involvement in the cooking classes to be central to behaviour change at home. Parent comfort with children helping in the kitchen was another important factor for child involvement.</p> | <p>Increased parent confidence translates to increased child involvement in meal preparation at home. Involving the child in future cooking programs is important for increasing family meals and family time. Instruction provided in the classes promoted cooking at home. Providing kitchen utensils and tools, such as measuring cups, apple corers, paring knives, proved to be an important component and increased capacity and efficacy in preparing meals at home, which can lead to more family meals and healthier eating for the child.</p>   |
| 11. CUPS (Myers et al., 2019).             | <p>The impact on children's nutrition and physical activity practices was not evaluated. Qualitative data showed a positive impact in relation to parents changing nutrition and active play practices at the supported playgroups and at home.</p>  | <p>Informal nature of supported playgroup is a strength for engaging vulnerable families.</p> <p>Practical training for facilitators enabled them to engage and tailor the messages to their own SP context.</p> <p>Ongoing mentoring and ethnographic approach fostered capacity building of supported playgroup facilitators to support parental behaviour change.</p>  |
| 12. EniM study (Roset-Salla et al., 2016). | <p><b>Diet</b><br/>Small increase in the adherence to the Mediterranean diet (MD) by the intervention group (5%) improvement. Parents showed a significant improvement in MD adherence and the consumption of vegetables, fish, olive oil and vitamins C and D improved significantly</p>  | <p>An educational intervention with parents with 1–2-year old children is feasible as this is a time when parents are more motivated and receptive to providing healthy food.</p>   |

| <b>Intervention name</b> | <b>Reported outcomes (impact evaluation)</b>   | <b>Effective elements, strategies and study recommendations</b> |
|--------------------------|--|---|
|                          | compared with the control group, with a subsequent decrease in the intake of butter, margarine, and industrial bakery products. (Children) changes were less evident, and only an improvement in adherence to the MD was observed. |   |

### **Reported outcomes**

Positive impacts were reported in interventions that measured improvements in children's dietary intakes (De Bock et al., 2012; Fisher et al., 2019; Garcia et al., 2020; Roset-Salla et al., 2016) and parental dietary intakes (Jancey et al., 2014; Roset-Salla et al., 2016). Other outcomes reported were improvements in parents' knowledge of healthy dietary behaviours (LoRe et al., 2019) and a reduction in children's daily energy consumption from discretionary foods (Fisher et al., 2019; Fox et al., 2020). Almost half (42%) of the interventions reported no positive effects on children's nutrient intakes, eating behaviours (Fangupo et al., 2015; Marsh et al., 2020) and family eating practices (Garcia et al., 2020), or minimal effects on children's dietary intakes (Fangupo et al., 2015; Roset-Salla et al., 2016).

Three of the 12 interventions reported outcomes in food literacy behaviours which included increased label reading and cooking (Garcia et al., 2020), improvements in nutrition knowledge and healthy dietary behaviours (LoRe et al., 2019), and increased participation of parents and children cooking and eating together (Miller et al., 2017).

Improvements in food parenting practices, such as a decrease in controlling food parenting practices – for example parents pressuring children to eat or using food as a reward – were also reported in several interventions (Fangupo et al., 2015; Fisher et al., 2019; Fox et al., 2020; Hughes et al., 2020). One RCT that measured child dietary behaviours reported small to moderate sustained results at 10 months (Garcia et al., 2020).

## 3.2 Phase 2 Qualitative Inquiry

### Study 1 Parent Focus Groups

Publication 1: Exploring Feeding Practices and Food Literacy in Parents with Young Children from Disadvantaged Areas.

Objectives:

1. Assess challenges with feeding and strategies used by parents.
2. Identify barriers to food planning, selection and preparation.

Citation: **Tartaglia, J.**, McIntosh, M., Jancey, J., Scott, J., & Begley, A. (2021). Exploring Feeding Practices and Food Literacy in Parents with Young Children from Disadvantaged Areas. *Int J Environ Res Public Health*, 18(4).  
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Article

# Exploring Feeding Practices and Food Literacy in Parents with Young Children from Disadvantaged Areas

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**Abstract:** Early childhood provides an opportunity to optimize growth and development and parents play a fundamental role in forming healthy eating habits in their children. A healthy diet improves quality of life and wellbeing and reduces the risk of chronic disease. The aim of this research was to explore parents' experiences of feeding 0–5-year-old children and food literacy behaviors. This qualitative study employed a general inductive inquiry approach. Participants were recruited through community-based parenting organizations in disadvantaged areas. Eight focus groups were conducted with 67 parents (92.5% female) living in socially disadvantaged areas within metropolitan Perth of Western Australia. Ten themes emerged from the preliminary analysis and were aligned with domains of relatedness, autonomy, and competence within the self-determination theory. Themes included relatedness (1) feeding is emotional, (2) variations in routine and feeding structures, (3) external influences, autonomy (4) power struggles, (5) it must be quick and easy, (6) lack of strategies for feeding autonomy, competency (7) whatever works, (8) healthy is important but for some unattainable, (9) improvements in food literacy skills, and (10) conflicting information overload. This research informed the development of a food literacy program for parents. Parents faced many challenges when trying to provide healthy food. This research has shown parents would benefit from support to achieve healthy eating practices for their families.

**Keywords:** feeding practices; food literacy; nutrition; focus groups; food parenting practices; self-determination theory; responsive feeding



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## 1. Introduction

Good nutrition during early childhood has been recognized as a critical indicator for optimal health, growth, socio-emotional, language, cognitive, and motor development, particularly in the first 2000 days from conception to five years [1]. Early eating patterns and flavor preferences developed during childhood can persist into later life; therefore, the period when solid foods are introduced to infants is an important stage in forming healthy eating habits [2–4]. According to the *Australian Dietary Guidelines*, children should eat sufficient nutritious foods to grow and develop [5]. The guidelines promote a family-centered approach to healthy eating and physical activity as the best way to manage children's weight. Infant feeding guidelines have been developed to provide evidence-based, best practice recommendations for feeding children from birth to two years of age [6].

The 2017–2018 National Health Survey found that Australian children are not consuming sufficient amounts of nutritious food required for growth and development [7]. The survey, which reported on children aged two years and older, found that 18.2% of 2–3-year-olds and 30.6% of 4–8-year-olds consumed sugar-sweetened drinks weekly [7]. The survey also found that 81.7% of children aged 2–3 years and 95.9% of children aged 4–8 years did not achieve the recommended daily vegetable intake. The Australian Bureau of Statistics estimates that one in four (24.6%) 2–4-year-olds are overweight or obese [7].

Studies of Australian children aged less than 2 years indicate that the consumption of discretionary foods that are energy dense and nutrient poor begins early in the weaning period and increases markedly in the second year of life [8–10]. Additionally, parents and children living with social disadvantage are at greater risk of poor health, including being overweight or obese and, therefore, should be a priority for interventions [11].

Factors influencing eating behaviors are expansive and are impacted by the political, for example, food regulation information; and socio-cultural food environments, for example, food advertising. However, parental food habits and feeding strategies have been found to be the most dominant determinant of feeding behavior [12]. Parents play an integral role in the promotion of their child's healthy eating behavior. As the gatekeepers of the early feeding environment, they can influence a child's long-term eating patterns and health outcomes [13]. Research on early childhood feeding practices has explored approaches that result in positive dietary outcomes. At the forefront is the concept of responsive feeding practice, where parents create a supportive environment that values their child's ability to self-regulate eating and develop autonomy and provide positive responses that are appropriate to their child's development and competence [14]. More recently, self-determination theory (SDT) has been used to conceptualize the development and motivation for the responsive feeding practices that are necessary for parents and children to internalize healthy food behaviors and values [14]. The SDT is a motivational theoretical framework, comprising three practices: parental positive involvement ("relatedness enhancing"), autonomy support ("autonomy enhancing"), and provision of structure ("competence enhancing") [15–17]. Ideally, child-centered responsive feeding practices that discourage authoritarian-style parenting behaviors, such as pressure to eat through control, coercion, restriction, and rewards, help to foster a child's autonomy and eating competency [13,18].

Parents' own food knowledge and skills are essential for providing healthy diets for their children. In Australia, the concept of food literacy describes the "interrelated factors that are required to plan, manage, select, prepare and eat food to meet dietary needs" ([19], p. 54). The birth of children may be the critical life event that provides an opportunity to improve parents' food literacy, particularly in light of concerns about intergenerational deskilling and/or devaluing of food skills, such as cooking [20]. Involving young children in food-related activities, such as cooking, models and contributes to their eating competence [21,22]. Little is known about how food literacy behaviors relate to parent feeding practices in Australia; however, time scarcity and responsibility divisions are likely to influence how parents operationalize practices [23]. A lack of food literacy is a significant barrier [24], as lower cooking skills have been associated with a higher proportion of ultra-processed foods in main meals [25].

Feeding experiences have been described as a highly complex social practice that is influenced by the wider environment [13]. Across the 0–5-year age group, there are different experiences and challenges for parents and children, reflecting the rapid growth and development in the first year of life when parents make all the feeding decisions. During the physical and cognitive development that occurs between one and five years, children are expected to develop positive attitudes, food acceptance, and regulation. Qualitative research of the early feeding environment can capture the lived experience of feeding and how parents make sense of this reality through their practices. A recent thematic synthesis of 73 qualitative studies of parents' attitudes, beliefs, and perceptions regarding feeding in the first year of life found that family, tradition, and culture, including the social norms within the parent's environment, had the greatest influence in shaping infant feeding behaviors. For example, when to begin complementary feeding and which foods to offer first [26].

In the limited number of Australian qualitative studies, parents of children aged up to five years have reported feeding as a challenging period where they have encountered many barriers [27–31]. Parents consistently report juggling food cost, quality, availability, and marketing influences with their individual circumstances, such as beliefs, family norms, knowledge, skills, and time [27,30–32]. There is evidence that parents have nutritional

knowledge but struggle to implement it due to factors, such as inconsistent advice and information [33]; trying to avoid conflict; and lacking strategies to overcome the barriers and frustrations they have incurred, such as children refusing the foods offered and managing different food preferences [30]. The Melbourne Infant Feeding, Activity and Nutrition Trial study found that barriers, such as a lack of time, often led parents to make dietary decisions based on what was easy and practical rather than what was healthy [29]. These challenges result in parental tiredness and stress, manifesting in emotionally charged mealtime interactions [34]. Parents describe children as fussy eaters without realizing the normality of adjusting to different food tastes, shapes, colors, and textures [34]. Various theories and frameworks have been applied to these findings to explain parent feeding practices, including ecological systems theory [31]; Capability, Opportunity, Motivation-Behavior theory [29,32]; the PRECEDE-PROCEED framework [27]; and social constructionism [33]. Further investigation of parent feeding practices and food literacy behaviors will assist in the design of education programs to support parents with 0–5-year-olds. This research aimed to explore parents' feeding practices and food literacy. The objectives were to assess challenges with feeding and strategies used by parents; identify barriers to food planning, selection, and preparation; and explain concepts for nutrition education to inform the development of a food literacy program for parents.

## 2. Materials and Methods

This study used a qualitative methodological approach with a general inductive inquiry [34]. A general inductive inquiry is where interpretations are made from the raw data, without prior assumptions or theories, to build concepts or themes as analysis takes place. Focus groups were chosen as they provide interaction between participants to explore ideas and values and provide a deeper understanding of how attitudes and factors influence the topic [35,36]. Focus groups enable researchers to explore how social or external concepts, such as child feeding recommendations, shape feeding and food literacy behaviors. Curtin University's Human Research Ethics Committee approved the research (HRE2019-0167-03).

### 2.1. Script Development and Testing

A structured discussion guide (see Supplementary Materials) was developed after reviewing the literature to establish content validity [33,37,38] and to ensure alignment with the objectives of the research. Development of the guide followed the methods used by Krueger and Casey [39]. Face validity was confirmed through interviews with stakeholders from organizations that provide parent-focused services. The first focus group was used as a pilot test, and minor amendments were subsequently made to the wording of questions. A questionnaire collected demographic information relating to sex, age, number and age of children, family role, household composition, level of education, employment status, postcode, being born in Australia, having English as their first language, and identifying as Aboriginal and/or Torres Strait Islander. Four additional validated questions on child feeding and food literacy confidence and behaviors were included to provide context [40]. For each question, participants were asked how often they had undertaken the behavior (offered new foods to your children, eaten a meal with your children, cooked meals at home) or felt confident cooking a variety of meals, in the last month.

### 2.2. Participant Recruitment

Purposeful and snowball sampling was used to recruit parents and carers of at least one child aged 0–5 years. Recruitment focused on low socio-economic-status parents and carers (grandparents or legal guardians) living in metropolitan Perth. The Socio-Economic Indexes for Areas (SEIFA) was used as a proxy measure of socio-economic status. SEIFA is a suite of four indexes developed from a set of socio-economic factors collected from Australian Census data, which ranks geographic areas based on their relative advantage and disadvantage [41]. To access the target group, parent-focused organizations located

in socially disadvantaged areas (deciles 1–4) were contacted via email and telephone, and provided with information and advertising material to recruit participants. Five organizations were approached, and all agreed to recruit participants. Organizational staff then recruited interested parents and carers using flyers advertising the focus groups within their centers. Parents/carers provided their names and contact details on a sign-up sheet that was then forwarded to the research team. The research team was not able to follow-up participants who did not attend on the day.

### 2.3. Data Collection

Focus groups were conducted during May and June 2019, at the parent-focused organization as they were familiar places for participants. All of these organizations were established to provide access to child health services, such as child health nurses, and to support parents through parenting programs and social activities (playgroups). Focus groups were conducted by an experienced facilitator and dietitian (A.B.) and nutritionist (J.T.). A third researcher attended to take notes and monitor recording equipment and time, nutritionist (M.M.). Parents were allocated in different groups depending on the youngest child's age, under two years or between two and five years, reflecting the different stages of growth and development. Four focus groups of between 8 and 12 participants were conducted within each age group (between 64 and 96 participants in total), based on estimations of saturation in the literature [42]. Focus groups ran for approximately one hour and were audio-recorded with participants' consent. Crèche facilities were provided, where possible, to support participation, and participants received a \$20 voucher as reimbursement for their time.

### 2.4. Data Analysis

Responses to demographic and food literacy practice questions were entered into an Excel spreadsheet. Postcodes were converted into SEIFA deciles using data from the 2016 Census of Population and Housing. Postcodes in SEIFA deciles 1–4 were calculated as low, 5–7 as middle, and 8–10 as high socio-economic status. Focus groups were conducted until saturation of ideas was reached [43]. Moderator debriefing with the three researchers occurred directly after each focus group. Audio recordings were transcribed verbatim by a professional service and were managed for analysis using NVivo<sup>®</sup>12 Pro software (QSR International, Melbourne, Victoria, Australia). The two primary researchers each made notes of emerging ideas after listening to the audio recording. Concurrent data collection and analysis was used with an inductive thematic saturation model as the primary analysis [44]. This saturation model is the extent to which there is non-emergence of new themes and theoretical insights [43]. The phases of the thematic analysis involved familiarization with the data; generating initial codes; searching and reviewing themes; defining and naming themes; and, finally, producing alignment with the research question and selecting representative quotations [44]. Secondary analysis was then applied to the emergent themes, with the application of a theoretical lens to explain and link themes for infant and child feeding. The themes were aligned with constructs of the SDT: relatedness, autonomy, and competence [17]. The quality of all phases of the research was assessed against the Consolidated Criteria for Reporting Qualitative Research checklist to ensure rigor had been achieved when reporting the findings [45].

## 3. Results

Eight focus groups were conducted, involving 67 of the 87 eligible parents and carers (77% response rate). For the purpose of reporting results, all focus group participants who were the primary managers of their child's dietary intake have been described as parents.

### 3.1. Demographic Characteristics

The characteristics of the participants are reported in Table 1. Participants included parents, grandparents, or guardians of children aged 0–5 years. The majority of participants

were female parents (92.5%) aged 26–35 (median age of 34 years), and most families had two or fewer children (77.6%). Of the children aged five and under, 59.4% were aged two years or less, and 40.5% were aged 3–5 years. At the time of the focus groups, just under half of the participants were not in paid employment and reported their roles as house duties or were on maternity leave, and one-quarter were unable to work or were unemployed. Just over half of the participants (57.6%) were living in postcodes with a low SEIFA index, were born outside Australia (56.7%), and spoke English as their first language (59.7%).

**Table 1.** Characteristics of parents attending focus groups.

| Characteristic  | Responses                   | n      | %       |
|---|-----------------------------|--------|---------|
| <b>Sex</b><br>(n = 67)  | Female                      | 62     | (92.5%) |
|   | Male                        | 5      | (7.5%)  |
| <b>Age</b><br>(n = 67)  | <18                         | 1      | (1.5%)  |
|   | 18–25                       | 5      | (7.5%)  |
|   | 26–35                       | 34     | (50.7%) |
|   | 36–45                       | 22     | (32.8%) |
|   | ≥46                         | 5      | (7.5%)  |
| <b>Family role</b><br>(n = 67)                                      | Parent                      | 62     | (92.5%) |
|   | Grandparent                 | 3      | (4.5%)  |
|   | Carer/guardian              | 2      | (3.0%)  |
| <b>Number of children</b><br>(n = 67)                               | 1                           | 27     | (40.3%) |
|   | 2                           | 25     | (37.3%) |
|   | 3                           | 9      | (13.4%) |
|   | ≥4                          | 6      | (9.0%)  |
| <b>Age of children *</b><br>(n = 87)                                | <1 year                     | 16     | (18.4%) |
|   | 1–2 years                   | 28     | (32.2%) |
|   | 3–5 years                   | 30     | (34.5%) |
|   | ≥6 years                    | 13     | (14.9%) |
| <b>Household composition</b><br>(n = 67)                            | Couple with children        | 50     | (74.6%) |
|   | Single parent with children | 12     | (17.9%) |
|   | Carer/guardian/grandparent  | 3      | (4.5%)  |
|   | Living with extended family | 2      | (3.0%)  |
| <b>Education level</b><br>(n = 67)                                  | Certificate or diploma      | 24     | (35.8%) |
|   | Bachelor degree or higher   | 23     | (34.3%) |
|   | Some high school            | 13     | (19.4%) |
|   | Finished high school        | 7      | (10.4%) |
| <b>Employment status</b><br>(n = 67)                                | Not currently working       | 29     | (43.3%) |
|   | Unemployed                  | 14     | (20.9%) |
|   | Part-time or casual         | 13     | (19.4%) |
|   | Full-time                   | 5      | (7.4%)  |
|   | Unable to work/disability   | 3      | (4.5%)  |
|   | Maternity leave             | 2      | (3.0%)  |
| Self-employed   | 1                           | (1.5%) |         |
| <b>SEIFA **</b><br>(n = 66)   | Low (decile 1–4)            | 38     | (57.6%) |
|   | Middle (decile 5–7)         | 25     | (37.9%) |
|   | High (decile 8–10)          | 3      | (4.5%)  |
| <b>Born in Australia</b><br>(n = 67)                                | No                          | 38     | (56.7%) |
|   | Yes                         | 29     | (43.3%) |
| <b>English as first language</b><br>(n = 67)                        | Yes                         | 40     | (59.7%) |
|   | No                          | 27     | (40.3%) |
| <b>Identify as Aboriginal or Torres Strait Islander</b><br>(n = 67) | Yes                         | 15     | (22.4%) |
|   | No                          | 52     | (77.6%) |

\* Participants could have more than one child. \*\* SEIFA derived from postcode using Index of Relative Socio-economic Advantage and Disadvantage, 2016 [42].

### 3.2. Frequency of Food Literacy Practices

New foods were offered to their children “sometimes” (42.4%) or “most of the time” (41%) (see Table 2). Fifty-nine participants reported that they had eaten a meal with their child either “most of the time” or “always” (89.46%). All participants reported that they had cooked meals at home at least sometimes, with almost half of respondents indicating they always cooked meals at home (44.7%). Two-thirds of participants felt confident cooking a variety of meals “most of the time” or “always” (68.2%).

**Table 2.** Frequency of food literacy practices of focus group participants.

| Food Literacy Practice                             | Response         | n  | %     |
|--|------------------|----|-------|
| Offered new foods to your children (n = 66)        | Never/rarely     | 4  | 6.0%  |
|  | Sometimes        | 28 | 42.4% |
|  | Most of the time | 27 | 41.0% |
|  | Always           | 7  | 10.6% |
| Eaten a meal with your children (n = 66)           | Never/rarely     | 3  | 4.5%  |
|  | Sometimes        | 4  | 6.1%  |
|  | Most of the time | 28 | 42.4% |
|  | Always           | 31 | 47.0% |
| Cooked meals at home (n = 67)                      | Never/rarely     | 0  | 0.0%  |
|  | Sometimes        | 4  | 6.0%  |
|  | Most of the time | 33 | 49.3% |
|  | Always           | 30 | 44.7% |
| Felt confident cooking a variety of meals (n = 66) | Never/rarely     | 6  | 9.1%  |
|  | Sometimes        | 15 | 22.7% |
|  | Most of the time | 20 | 30.3% |
|  | Always           | 25 | 37.9% |

### 3.3. Thematic Analysis

The primary analysis revealed 10 themes. These themes were overlaid with the SDT constructs (see Figure 1).

#### 3.3.1. Relatedness Themes

##### Feeding Is Emotional

The experience of feeding children induced a range of emotions in the participants, such as stress, difficulty, worry, and frustration. Participants suggested that factors, such as the anxiety and pressure of feeding, and knowing what to feed children, induced these emotional responses:

*I find that . . . when [partner's name] gets home from work, I'm physically, emotionally drained. I seem to hit a barrier when [child's name] doesn't eat at night time . . . last night he literally sat there and screamed . . . I was in tears as, well, you know, because I said, if he fusses during the day I can deal with it but come night time I am literally physically exhausted 'cause I work every day as well.*

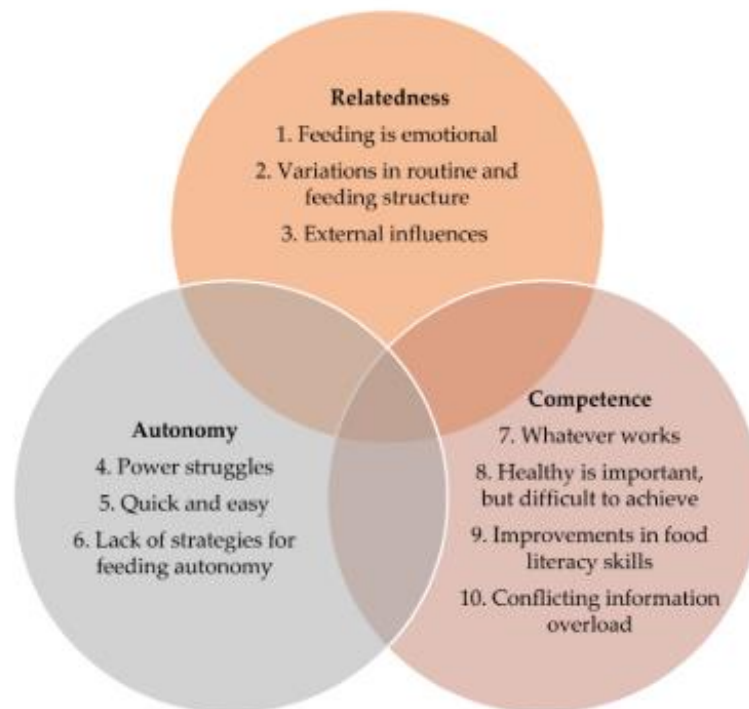
(FG 1)

Parents experienced anxiety when they perceived their child was not eating well. At the extreme, this anxiety manifested in controlling behaviors, such as weighing food to determine the amount of food eaten. One parent described their own weighing practices, while another described this practice generally:

*I've heard of parents that have weighed their food, like, before they've given it to the child and weighed everything off the floor after and gone “they've eaten bugger all” but it looks like they've eaten a decent amount.*

(FG 1)

Frustration was expressed when offering new foods to children. Parents spoke of giving up quickly when foods were rejected and returning to tried-and-tested foods. There was a great deal of discussion about children being fussy eaters because they changed what they liked and disliked. Children eating the food they wanted resulted in conflict and disappointment. They reported being annoyed when children rejected new foods, particularly when they had spent a long time preparing and/or cooking the foods. There was a perception that children's food preferences became fussier as they grew, as they ate less food and variety, and parents lost control of their child's feeding:



**Figure 1.** Categorization of themes aligned to self-determination theory (SDT) [17].

*Like, I tried grapes with him and no, he just spit it out, so ... So, I go back to what he wants, like banana and apples. So at least I know he had one serve of fruit, like, for that day.*

(FG 7)

Many parents spoke of preparing several meals for members of the family to cater for differing preferences to ensure the children ate and to avoid negative food responses:

*I, most of the time, make, like, four different meals but that doesn't bother me ... I grew up in the sense of you have to eat what's on your plate and [to] the point where you're sitting there in tears crying and not eating your dinner and it's horrible. So, I cook what I know they eat, I'm not going to force them to eat anything different.*

(FG 4)

### Variations in Routine and Feeding Structure

Variation existed in how feeding occurred. Parents spoke about developing feeding routines and structure, and how, before having children, preparing, and eating meals was much more flexible and less planned. Setting a positive example for their children for example, through the social connection of eating together, was important to many parents. However, it was apparent that parents did not always eat with their children, and at times there was little structure or routine around feeding:

*And we will sit down, probably, two to three nights a week, we'll be able to, yeah, sit down and have dinner with them if I get home early enough to actually have it cooked ... Otherwise, yeah, like last night, they had baked beans and toast night for the kids and we had something afterwards as well once they went down to bed.*

(FG 6)

Time was reported as a significant barrier to being more involved with their child's feeding and providing routine and structure. Cooking for and feeding children needed to be fast, as there were numerous other demands on parents' time. Parents described waiting until their child was in bed so they could eat their own evening meal, alone or with a partner, so they could sit in peace and be more relaxed:

*I'm a single parent of the two babies ... because their dad moved away a year ago, so I just do it from scratch ... I don't eat with the babies, so my time's very, very limited to getting up and down and catering for them for drinks and all that kind of stuff.*

(FG 2)

### External Influences

External factors negatively influenced what their children were eating and created tension in the parent-child relationship. Participants perceived there to be a great deal more unhealthy food available now in supermarkets and when eating out, compared to when the parents were children. Parents reported that unhealthy foods were targeted towards young children:

*Too much of [that] sugar[y] stuff is around, yeah, too much cake and biscuits and all this unhealthy stuff out there. Some days I even get so overwhelmed, like, how to stop them from asking when we go to shops or whatever, it's like, it's just too much. I think the government should do something about it.*

(FG 6)

Parents found external influences, including judgement from others, disruptive and frustrating. Parents were also critical of other parents' food choices, particularly how they influenced the types of food their own children started requesting:

*She's four; she just started kindy. So, like, at home she'll eat like vegetables and everything but then when I send them to school, it's the exact same lunch she eats but she won't touch it because the other kids have chips.*

(FG 8)

### 3.3.2. Autonomy Themes

#### Power Struggles

Many parents intended to feed healthy foods to their children, but when children became upset, rejected foods, or demanded alternatives, parents gave in to their child's demands so they could avoid conflict. Children were often making the decisions about what to eat, and parents allowed this to avert power struggles. This produced some anxiety in parents, but seeing their children eat was more important than coercing children to eat; that is, eating something was better than eating nothing:



*No, no, I normally only give him his dessert and generally after he eats. But because yesterday he just refused to eat anything, I thought I'm at a point where . . . [I gave into his demands and fed him a dessert]. Well, he ate it. Something was better than nothing.*

(FG 1)

Parents used a range of strategies to reduce power struggles, including feeding children in the bath or distracting them with technology, such as television or iPads:

*I've got to distract her so she's not thinking about her eating, to look at the birds outside or to do whatever. Do you know what I mean? She needs a distraction.*

(FG 5)

For others, there was a "take it or leave it" attitude from families who enforced feeding rules. For example, one parent spoke about trying to enforce their rule of not allowing their child to leave the table until the food was eaten.

*Once we've [parents] said no to that that he doesn't get anything else. So, he'll just have a meltdown if he wants something completely different. When we say no, there's nothing after that, and he'll say no I want this, I want that and I'll say no, this is what's on offer, you know after that there's nothing.*

(FG 6)

Variation was apparent in parents' level of involvement in feeding their children. Many parents did not allow children to feed themselves because they felt it was their job as the parent to ensure their child ate enough food. The mess created by the child was a barrier to children feeding themselves. Other parents encouraged more autonomy with their child's self-feeding, such as sitting toddlers in high chairs to eat independently, and baby-led weaning, where infants start on solid foods by feeding themselves:

*Yeah, I don't think I've fed my kids since, like, I don't think [child's name] was, like, eight months old when I stopped feeding him. As soon as he could sit up, . . . I sort of skipped purees. So, as soon as he could hold things and eat, he just ate. Yeah, they just, they feed themselves.*

(FG 4)

#### Quick and Easy

Feeding children later in the day needed to be quick and easy and was often considered a task that needed to be ticked off. Children frequently ate dinner earlier than their parents. Time was a barrier to the preparation and eating of nutritious meals. Some parents discussed how commercially prepared baby food, such as that available in small pouches, was an ideal way of feeding younger children, as they were able to be consumed quickly and without any mess:

*You're spending all this time in the kitchen, like, I might spend hours pureeing food and, if she's not particularly interested, and that's hours I could have spent doing something else with her or cleaning or whatever, you know what I mean?*

(FG 8)

The goal was not to spend too much time in the kitchen, preparing meals and cleaning up. Parents described the ideal meal as fast, convenient, and a "quick fix" (FG 8):

*But you know the simmer sauce, you get one for \$2 at Coles and Aldi, with steamed rice? I did it better, instant rice, two minutes in the microwave. Yeah, fast, convenient [and] nutritional . . . like, yeah, bang, 20 min, dinner's done.*

(FG 1)

The need for quick and easy meals was also evident in how parents would feed their children the evening/main meal separately, earlier in the evening, which was viewed by many parents as a difficult time of day. Working parents identified the demands of

coming home from work and having to prepare food as a reason for wanting to feed children quickly and put them to bed, so parents could eat their own evening meal alone or with a partner:

*And that's one of the big things for me. Like, I know what I want to make them, what I want to feed them but half the time it's a mad dash to put [together] something that resembles nutrition.*

(FG 6)

#### Lack of Strategies for Feeding Autonomy

There was a notable absence of discussion around building independence and autonomy in children. Strategies to motivate children to eat were more focused “in the moment” rather than on developing a competent and autonomous feeder. The reduction in the amount of food required after the first year of a child’s life, changes in appetite, and developing independence were not well understood. Parents described children as “fussy,” and voiced their frustration at the amount of effort it took to feed their child. Parents did not discuss their child’s independence as an opportunity to move towards their child building autonomy or skills around eating.

*I just tell her, like, eat, you know, two or three mouthfuls or whatever cause I always said you used to eat it. Like, you literally ate it six months ago, like, I don't understand.*

(FG 4)

The emphasis on keeping things quick and easy were barriers to providing opportunities for children to develop autonomy and competence around feeding. Parents were mostly unwilling to allow their children to help with meal preparation, as involving children was messy and time-consuming. A few parents involved their children in meal preparation tasks, such as chopping, peeling, and spreading foods:

*I don't mind them helping in the kitchen, but when it's a rush, like, just get away, no, go away.*

(FG 8)

#### 3.3.3. Competence Themes

##### Whatever Works

Parents were motivated to provide healthy food for their child; however, they described doing “whatever worked” (FG 1) to motivate their children to eat period. A large amount of time and effort was spent encouraging children to eat certain foods by presenting foods in different and appealing ways. For example, providing food that was colorful and was prepared in appealing shapes. Other tactics included hiding or disguising vegetables by pureeing and mixing them into other foods, or adding sauces, cheese, salt, butter, or ghee. Another strategy was to present lots of food options for their children. Many parents reported continually searching on the internet or YouTube to find recipes for new and exciting foods for their children. Often, parents would forgo the priority to feed their children a nutritious meal just to see them eat. For example, commercially prepared baby food or baby food pouches were a fail-safe option but were often associated with guilt or shame as they were perceived as inferior to home-prepared food:

*Yeah, she'll eat three times a day but, 'cause she's so little, if she's in a bad mood, she doesn't want to eat . . . so then instead of eating what I prepared for her or what I want her to eat, it'll be one of those, you know, Heinz food pouches or some avocado or something that I'll know she'll eat as opposed to me being, like, no, let's try to feed her this because this is what she needs. But if it's a battle, let's just feed you.*

(FG 9)

### Healthy Is Important but Difficult to Achieve

Factors, such as time and cost, dictated what was purchased and cooked. Cooking at home was a way of saving money for some; however, others expressed the view that healthy food was expensive and unattainable on a budget. Conversely, some parents chose takeaway food over home-cooked meals, as it was viewed as a cheaper option that would be eaten with minimal waste compared to homemade food:

*[Buying commercially prepared food is] more convenient . . . then[sic] trying to, you know, cook it, prepare it, you know, put it in the freezer, let it cool down and then bring it out and freeze it. That's so much hard work.*

(FG 5)

There was frustration at having spent a long time cooking when children did not eat the food. An extreme response from one parent was that only giving fast food was an easy and fail-safe option. Seeing their child eat was the most important factor, regardless of whether the food was healthy or not:

*Better off going to McDonald's. Seriously, I feel like that sometimes, when [child's name] gets the better of me because, you know, it's like 15 bucks [for] Maccas; it's 10 bucks to cook a tuna pasta bake. Tuna pasta bake, like, lasts, what, three days? My kids don't mind it but they won't all sit down and eat it.*

(FG 1)

Parents who were born overseas described how foods in Australia were different from the foods they had eaten as a child, and what they were accustomed to from their own country. They also expressed that they did not have an understanding of "Aussie" foods, and their knowledge of healthy food was limited.

Although not overtly discussed, there was evidence that some parents were food insecure. After the completion of focus groups, three parents separately approached the researchers to inquire how they could obtain food assistance. There was discussion about how money did not go far and how expensive having children was. Some employed money-saving strategies, such as shopping at discount bulk-shopping stores to look for specials. For a small group of parents, food insecurity was a barrier to providing a range of food choices. The priority for this group was ensuring their children did not go hungry, which reduced the opportunity for food choices and child autonomy around food decisions:

*It becomes difficult when you've got, like, 30-odd dollars for the nappies, 30-odd dollars for wipes . . . if you're buying the purees and the tins, it just there is [sic] some fortnights I'm spending up to \$150 sort of thing on all of that when I can spend 100-odd dollars, 75-odd dollars if I make it myself.*

(FG 3)

### Improvements in Food Literacy Skills

There was discussion that food literacy skills and confidence had improved since becoming parents. Compared to before having children, parents planned and cooked more meals, and relied less on takeaway foods; they had to learn how to cook and have more healthy food available:

*Oh, it was very easy when I was at work. I wasn't getting home 'til eight [or] nine o'clock at night and I would just eat junk food, whatever, chocolate. I'd go to the chippy and I'd get, you know, chips or whatever. So, it's made me cook. I don't enjoy cooking at all and I have to do it. I'm not good . . . mine's [diet] totally changed 'cause I used to have a terrible way of eating for myself.*

(FG 8)

Parents spoke of eating more vegetables and increasing efforts to eat healthy foods since having children. Big "shop ups" for fruit and vegetables at markets or food outlets ensured healthy foods were available for the entire week. Parents planned meals and pre-cooked

meals for freezing to ensure meals could be easily prepared each day. Many parents also kept commercially prepared baby food in jars or pouches on standby as a backup:

*Yeah. More meal prepping, even like batch cooking, just having it all, 'cause it's hard to, sort of, ok, now we've got to do a meal or have something on hand.*

(FG 3)

Many parents born overseas cooked at home, and these parents saw cooking as the mother's role. Value was placed on food as a way of experiencing social connection within families and a focus of celebrations. Parents discussed how, since arriving in Australia, they were keen to learn to cook more "Aussie" foods, often searching the internet to discover how to cook a variety of typically Australian foods.

#### Conflicting Information Overload

Parents obtained feeding information from various sources, including websites, books, social media pages, friends, family, mothers' groups, social groups, such as playgroups held at parenting organizations, and child health nurses. The amount of information was overwhelming and sometimes conflicting, making it difficult to navigate. Parents reported receiving advice from a health professional to introduce foods and feed children one way, and contradictory advice from others. Some parents relied on information given to them from their own mothers and family members; however, some parents did not have family to ask, so they relied on advice from friends or information from websites:

*Search, yes, if I got confused, just Google or ask grandparents, like, because we've come from [a] different country. So, sometimes I'll ask my parents, sometimes I ask my husband's parents.*

(FG 4)

Parents had difficulty verbalizing what they wanted from a nutrition education program. After some prompting, the suggested topics included budget-friendly recipes, lunch boxes, quick and easy meals and snacks, help with fussy eaters, and serving sizes for children:

*How you can make tasty food for them that, ... with minimal ingredients? ... something that goes further ... can keep for a while, [is] freezable.*

(FG 3)

*Things we can try ... the main challenge is really to get them to eat lots of healthy food and how to do that, really ... and also to make sure that they are having the right serving.*

(FG 7)

## 4. Discussion

The findings provide an insight into the feeding experiences of parents from socially disadvantaged areas. It is the first qualitative study to focus feeding and food literacy of Western Australian parents of 0–5-year-olds. Qualitative research plays an important role in understanding facilitators and barriers to healthy eating behaviors. The themes generated from the eight focus groups indicate that parents are motivated to provide nutritious foods but that feeding children under five years presents a number of challenges. This study examined the results through the lens of SDT constructs, which directed the discussion to strategies that enhance parents' intrinsic motivation to develop autonomous competent eaters. Increasing this type of motivation leads to self-determining feeding practices and improved food literacy behaviors. The SDT application indicates that parents' intrinsic motivation to provide a nutritious diet for their child was overridden by extrinsic barriers.

### 4.1. Relatedness Enhancing

When children build a sense of relatedness, emotional support, and positive connection to their parents, it can be a powerful facilitator for the adoption of healthy eating habits [17]. The home food environment plays an important role in a child developing

competency to self-regulate their eating behaviors. Relatedness enhancing parenting practices, such as nurturing and providing structure, routines, and clear expectations, have been positively associated with healthy dietary intakes [13]. Parents can foster feeding competency and mastery to produce healthy eating behaviors in their child by teaching rules about healthy food (i.e., rules around snack consumption); providing a healthy food environment, including food availability and accessibility and mealtime structure (i.e., regular meals and snack times); and direct modelling (i.e., a parent eating healthy food with their child), where a child learns through observing and imitating behaviors [17]. Through these parenting practices and socialization, children can develop positive internalization of healthy behaviors and values from their parents.

Consistent with other Australian research, our research found that parents experienced a number of emotional responses to feeding children, particularly when they considered their children to be fussy eaters. Fussy eating has been described to result in anxiety, frustration, and stress in parents [30]. Research has shown that a lack or absence of positive feeding experiences, positive parental involvement, warmth and support for their child, as well as the use of unhealthy food to regulate a child's emotions, can negatively impact a child's ability to develop a positive connection, or relatedness, with their parents [17]. Poor connections can reduce parents' motivation to achieve nutrition-oriented goals, such as encouraging their child to eat nutritious foods, and psychosocial goals, such as wanting their child to feel secure, well fed, and safe [38].

Fussy eating is reported as a common behavior in early childhood [28]. Although research has indicated that it is unlikely to cause any permanent harm to a child's development, it does cause stress for parents and can have a negative impact on family relationships. Strategies and advice for parents to prevent or improve fussy eating include repeated exposures to unfamiliar foods; parental modelling of eating fruit, vegetables, and unfamiliar foods; and the creation of positive social experiences around mealtimes [46].

There were a range of variations in routines and structures around feeding reported by parents in this research. Parents intended to create positive structures and routines but were often challenged by time, cost, competing priorities, and other external influences, such as marketing and peer pressure. This is consistent with research that has shown the variety of external factors that can influence parents' feeding practices [16,30,38,47,48]. Education and support that address family and cultural priorities, and that empower parents by providing strategies and building confidence to overcome external influences while also preventing or addressing internalized feelings of shame or guilt can be beneficial. Parents who are equipped with techniques or strategies to plan for and manage external influences and the different stages of a child's development can minimize the use of unstructured and coercive food parenting practices [49].

#### 4.2. *Autonomy Enhancing*

Parental approaches to feeding can vary widely [18]. This study identified feeding behaviors that both built and thwarted the child's autonomy. To avoid conflict with their children, parents provided unhealthy food choices driven by the wants of the child, gave in to their child's demands, and/or were restrictive and rigid about the foods that were provided. For example, just under half of the participants in this study indicated they infrequently introduced new foods to their child. Limited time is a pressure that can result in authoritarian feeding practices that override strategies to develop autonomy [18,37–50].

Excessive food restriction, pressure to eat, and control by parents can have unintended negative consequences on children's eating behaviors and have been associated with an increase in children's body mass index [50]. Restrictive feeding practices can result in increased snacking in children aged 2–18 years [51]. Responsive feeding is a fundamental philosophy underpinning the Satter Eating Competence Model [52] and Division of Responsibility [53] feeding strategies, both of which focus on building a child's self-competency and autonomy. Allowing children to intuitively eat enough food, rather than parents controlling or restricting food, helps them to develop internal regulation skills [54]. Further-

more, autonomy can be strengthened if children are involved in decision-making through a guided choice in planning and preparing meals. Parents can foster autonomy through nutrition education, praise, and applying negotiation in their child's food choices [17]. Research has shown that although parents have a desire to provide healthy food, the child's preferences are a predominant factor in influencing the types of foods served at mealtimes [18,55].

#### 4.3. Competency Enhancing

Parents play an important role in the provision of structure in the child's food environment, such as setting clear rules, modelling healthy eating, and providing healthy food, which helps to develop competence in their child's ability to self-regulate their eating behaviors. Unfortunately, parents in this study were faced with several barriers, such as lack of time, cost of food, food insecurity, and unfamiliar food, to providing an adequate feeding structure. Parents went to great lengths to convince their children to eat any food but particularly healthy food; however, they often yielded to their child's demands and forwent their own nutritional goals to placate their child.

Parents were faced with multiple and conflicting sources of information. Despite being readily available, information adds to the anxiety parents face when feeding children [26,33]. Consistent with other research, parents in this study often sought feeding advice from family and followed traditional feeding practices passed on by their own parents. Research has found parents may be more prepared to take advice from family members rather than health professionals; however, this information can be unhelpful or misinformed. Advice from health professionals may not be practical or relevant to either them or their child's specific needs. Parents own beliefs, values, and knowledge influences which sources of information are selected and how parents distinguish between sources of information [31,32]. Providing parents with the skills to recognize reputable sources of educational materials, such as government guidelines, and in a format that is easy to comprehend is important [31].

There were several barriers that conflicted with parental nominated goals. These included financial restrictions, busy schedules, poor parental eating habits and modelling, and conceding to their child's food preferences and requests. Parents in this research did not explicitly discuss many of the acknowledged external factors. Previous research has shown environmental factors influence parents' selection of healthy food for their families, in particular, their ability to navigate the marketing information on food packaging, lack of certainty about packaging information, pressure to meet multiple demands, together with a desire to shop quickly, and the conflict between feeding children well and keeping them happy [56]. Researchers advocate for parent programs that acknowledge and value the relevance of both psychosocial goals, such as wanting to help children feel secure and nutrition goals (providing a nutritious diet) while assisting parents to develop strategies to address tensions between goals [38]. In addition, programs can raise parents' awareness of the impact of the broader political and socio-cultural environment on food choices.

Some parents stated that they experienced food insecurity, which further exacerbated unhealthy feeding practices. American research with parents of two-year-olds from food-insecure households reported more pressure to eat energy-dense nutrient-poor foods [57] and food insecurity has been found to be a factor in parents encouraging their children (aged six months to five years) to eat everything on their plate due to the uncertainty of food availability. Although, parents from food-insecure households were motivated to provide healthy meals, and had goals to enhance positive family relationships through family meals; barriers, such as time and food costs, influenced these goals, resulting in parents adopting less healthy feeding practices [58]. Parents, particularly those that are food insecure, need assistance to balance dietary goals, and food literacy knowledge, skills, and resources to achieve healthy eating practices [38,57]. Linking parents to food relief services may provide additional support for such families. In addition, providing a free

nutrition education/food literacy program with the provision of free child care has been recommended [58].

Through education, parents can be empowered to gain a better understanding of a healthy diet and learn practical ways to form healthy dietary behaviors in their child during the early years [59,60]. Many parents in our study were using food literacy behaviors more frequently and/or experienced improvements in food literacy skills since having children; however, it was evident that further improvements in these skills would assist parents in overcoming the barriers to providing healthy meals for their families. Higher parental confidence in cooking skills and in selecting foods by understanding labels has been associated with lower consumption of ultra-processed foods by children; this also increases healthy eating behaviors, such as sharing cooking skills with children [60,61]. Teaching children about food, in a way that is appropriate for their developmental stage, through activities that provide just enough structure and assistance to help them to learn is the aim.

Although interventions that incorporate cooking skills are widely used in public health nutrition interventions and have resulted in favorable dietary outcomes, such as healthier food choices and other health-related outcomes [60,62], few interventions have investigated the concepts of both food literacy skills and parenting practices to improve health outcomes for families. For parents to achieve healthy dietary outcomes for families with children aged 0 to 5 years, there is a need to improve their food literacy skills and increase knowledge about creating positive feeding environments. Parents need educational support that addresses their personal feeding choices and ideology in a way that is easy to understand, factual, user-friendly, and culturally appropriate [26]. Parents also value social interactions with other parents; this, too, can provide learning opportunities and foster the adoption of healthy feeding practices [32].

#### 4.4. Limitations

This research used a number of strategies to ensure rigor or trustworthiness in the findings, including the results are credible and repeatable with the same cohort, and reflexivity and theoretical triangulation to achieve confirmability. In considering the generalizability of results, however, participants were purposively selected from disadvantaged areas within the Perth metropolitan area only; as such, findings may not represent the population of all parents. While areas of disadvantage were chosen as the setting for this study, some participants reported living in a postcode from middle to high socio-economic areas. Participants were mostly female. Focus groups were only conducted during the daytime, which may have restricted some parents, particularly males from attending.

Another limitation is that this research did not explicitly explore the political and socio-cultural environments that impact on food choices but have reported on where focus group participants did raise issues, such as marketing.

#### 5. Conclusions

Parents of 0–5-year-olds were found to have motivation and positive intentions regarding their child’s nutrition but were often challenged when trying to provide healthy food using positive feeding practices and food literacy behaviors. This research has shown that parents would benefit from support to achieve healthy eating practices for their families as they struggle with both “what” to feed and “how” to feed. Many parents face a range of barriers and challenges in providing nutritious meals for their families on a daily basis. Parent nutrition-education programs should aim not just to improve parents’ food literacy skills (i.e., planning, management, selection, preparing, and eating healthy food) and knowledge, but also to develop and strengthen parenting practices by enhancing relatedness, autonomy, and competency to achieve healthy outcomes. This research has provided an insight into parents’ experiences of feeding their children aged 0–5 years and will inform the development of a parent food literacy program.

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## 3.3 Phase 2 Qualitative Inquiry

### Study 2 Stakeholder Interviews

Objectives:

1. Identify food and nutrition experiences with parents of children aged 0–5 years.
2. Determine the barriers and enablers to engaging parents in parenting workshops or programs from past experiences.
3. Identify perceived gaps in parents' knowledge or skills around feeding children aged 0–5 years.

Fourteen interviews were conducted either face to face ( $n = 9$ ) or via telephone ( $n = 4$ ), from April to July 2019. All participants interviewed worked with parents and families within community parenting organisations (centres) or local government agencies. Participants will be referred to as stakeholders.

### Demographics

Demographic characteristics are reported in Table 6. All stakeholders were female, half worked for not-for-profit organisations ( $n = 7$ ), others worked for government ( $n = 3$ ) and non-government organisations ( $n = 4$ ). Most stakeholders worked in the Perth metropolitan area, a quarter worked in regional areas outside of Perth metropolitan area ( $n = 4$ ) and one worked in a remote location ( $n = 1$ ). Two thirds ( $n = 11$ ) of stakeholders reported working with both Aboriginal families and Culturally and Linguistically Diverse (CALD) families ( $n = 9$ ). Two thirds ( $n = 9$ ) reported they had more than 10 years of experience working with parents. The majority (78.6%) of stakeholders worked in locations classified as low SEIFA (decile 1–4), however two interviews were conducted with stakeholders in high decile SEIFA index areas (decile 8). It was considered appropriate to include these stakeholders, because there were pockets of disadvantage within these locations, especially in outer newly built suburbs, which have less social infrastructure.

Table 6. Demographic Characteristics Of Stakeholders

| Characteristic  | Responses   | n  | %       |
|---|---|----|---------|
| <b>Sex</b><br>(n = 14)                                      | Female  | 14 | (100%)  |
|   | Male  | 0  | (0.0%)  |
| <b>Age</b><br>(n = 14)                                      | 26–35   | 0  | (0.0%)  |
|   | 36–45   | 4  | (28.6%) |
|   | 46<55   | 7  | (50.0%) |
|   | 56<65   | 3  | (21.4%) |
|   | >66   | 0  | (0.0%)  |
| <b>Sector</b><br>(n = 14)                                   | Not-for-profit                                    | 7  | (50.0%) |
|   | Government  | 3  | (21.4%) |
|   | Non-government                                    | 4  | (28.6%) |
| <b>Location</b>   | Metropolitan                                      | 9  | (64.3%) |
|   | Regional  | 4  | (28.6%) |
|   | Remote  | 1  | (7.1%)  |
| <b>Role</b><br>(n = 14)                                     | Manager/Acting Manager Early Years Support Worker | 2  | (14.3%) |
|   | Team Leader                                       | 1  | (7.1%)  |
|   | Coordinator                                       | 3  | (21.4%) |
|   | Senior Program Coordinator                        | 1  | (7.1%)  |
|   | Community Education Officer                       | 1  | (7.1%)  |
|   | Nutritionist                                      | 1  | (7.1%)  |
|   | Paediatric Dietitian                              | 1  | (7.1%)  |
|   | Health and Wellbeing Officer                      | 1  | (7.1%)  |
|   | Childhood Development Planner                     | 2  | (14.3%) |
|   | Centre Director                                   | 1  | (7.1%)  |
| <b>Socio-Economic Indexes for Areas (SEIFA)</b><br>(n = 14) | Low (decile 1–4)                                  | 11 | (78.6%) |
|   | Middle (decile 5–7)                               | 1  | (7.1%)  |
|   | High (decile 8–10)                                | 2  | (14.3%) |
| <b>Length of time working with parents</b><br>(n = 14)      | 2<5 years   | 3  | (21.4%) |
|   | 5<10 years  | 2  | (14.3%) |
|   | 10–20 years                                       | 5  | (35.8%) |
|   | 20–30 years                                       | 1  | (7.1%)  |
|   | 30+   | 3  | (21.4%) |
| <b>Work with Aboriginal parents</b><br>(n = 13)*            | Yes   | 11 | (84.6%) |
|   | No  | 2  | (15.4%) |
| <b>Work with CALD** parents</b><br>(n = 13)*                | Yes   | 9  | (69.2%) |
|   | No  | 4  | (30.8%) |
| <b>Identify as Aboriginal</b><br>(n = 14)                   | Yes   | 3  | (21.4%) |
|   | No  | 11 | (78.6%) |

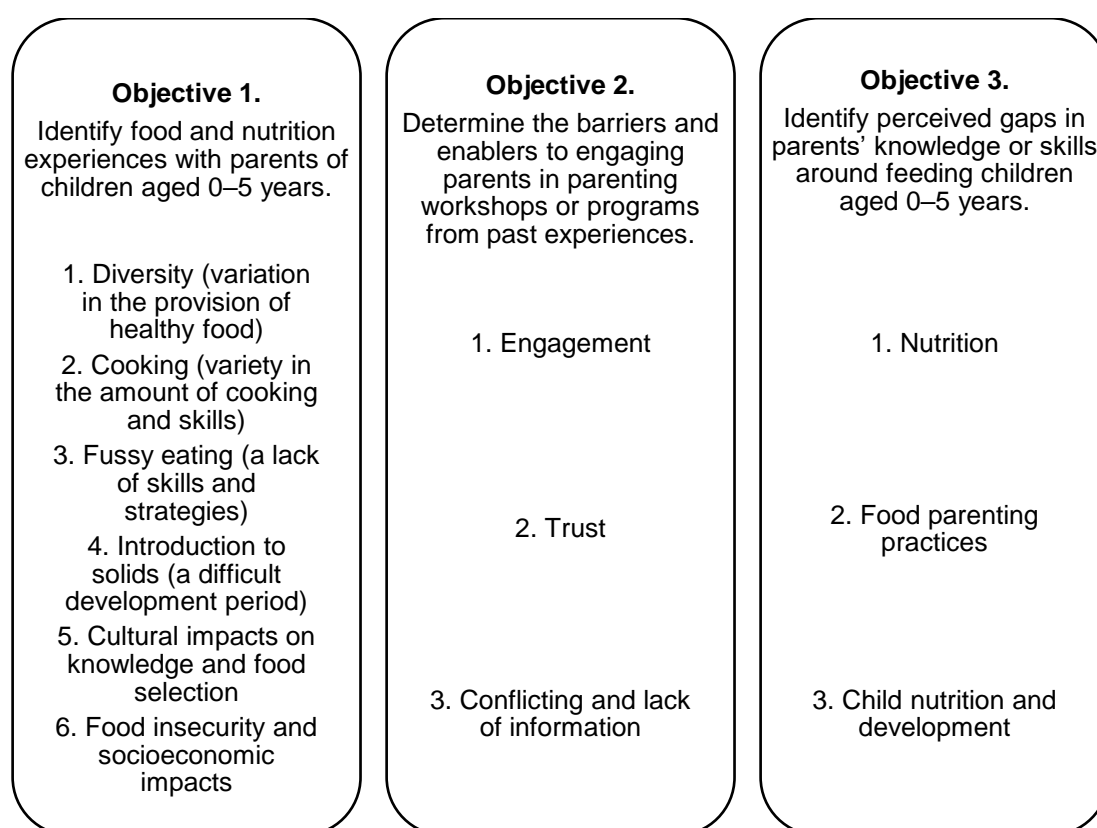
\*One stakeholder did not respond to this question.

\*\* CALD Culturally and Linguistically Diverse.

## Thematic Analysis

The themes identified from the data were aligned to the objectives of the qualitative inquiry with stakeholders to identify their experiences with parents of children aged 0–5 years around food and nutrition, and to determine the barriers and enablers to engaging parents in parenting workshops or programs. The interviews also set out to identify the perceived gaps in parents' knowledge or skills around feeding children that would be used to inform the FSP program.

Figure 3 Summary of stakeholder interview objectives and themes



### Objective 1. Food and nutrition experiences

Six themes emerged from the analysis of the food and nutrition experiences of the stakeholders that were aligned with the objectives. Themes included (1) *diversity* (variation in the provision of healthy food), (2) *cooking*, (variety in the amount of cooking and skills), (3) *fussy eating* (a lack of skills and strategies), (4) *introduction to solids* (a difficult development period), (5) *cultural impacts on knowledge and food selection*, and (6) *food insecurity and socioeconomic impacts*.

## Theme 1 Diversity

There was variation in the stakeholders expressed experience of dealing with parents around food and nutrition. There was discussion about parents' varying ability to provide a healthy diet for children. At one end of the spectrum, there were parents who had a high level of skills and knowledge, who seemed to be "switched on" (Int#1 Metro). At the other end of the spectrum, there were some parents who were "struggling" (Int#1 Metro) to provide healthy food for the family. Overall, stakeholders conveyed they felt all parents wanted to do the best for their children, but for some there was a disconnect between what they wanted and the reality of what they were doing.

*So I'm seeing some families that are very switched on and very aware of how to feed their children, these families know about healthy choices. I also see a lot of families that ... have little to no skills around cooking. So, it's lots of sorts of fast food, convenience snack type foods that are offered. I see lots of parents struggling to sort of look after their own food choices, and then to sort of provide food for their families becomes another level of complexity for them sometimes as well. (Int#1 Metro)*

The diversity in the number cultural groups also provided variation in the types of foods being offered to children and variations in parental feeding practices. Stakeholders mostly articulated their experiences by describing the types of food they saw children eating and what foods were brought into their centres.

*And it's amazing, how different the cultures are with regards to what foods to provide. So that was a real eye-opener ... Families not realising that they could eat tomato for example. They thought tomatoes had to be cooked, they didn't know you could eat them raw and things like that. So, families are coming to Australia really not knowing what is a sandwich and not wanting their children to look like they're missing out or being different to others at school. (Int#3 Metro)*

More than one third of stakeholders described how they saw children consuming drinks other than milk in infant feeding bottles, such as flavoured milk or other drinks ( $n = 5$ ).

*So, you see a lot of people saying my children won't eat anything. But when you actually break it down, unpack it further, they're actually filling up on a lot of milk ... you know coming in with like choc milk and things like that in bottles as well. [We are] encouraging water and milk if appropriate, but you know you'll still see people coming in with like the Pop Tops [fruit flavoured drinks] and things. (Int#13 Metro)*

Stakeholders reported some children were having bottles and pacifiers beyond the recommended age.

*We will see babies coming in here with milk, like lots of milk, even children up to 4 years of age, like constantly drinking milk, milk, milk. (Int#13 Metro)*

There was some discussion around the delay in progressing through different texture stages when feeding children.

*When I came in there were a lot of children with food aversions, so any kind of textures. We have quite a few older children still on bottles and on blended food ... a huge amount of Vietnamese children in our families, the area is predominantly Vietnamese and they tend to leave them with their bottles until, even going to school some of them are still definitely on night bottles. (Int#7 Metro)*

Stakeholders also described seeing children eating snack type discretionary foods. They also spoke about how they provided healthy snacks for children within their centres, for example providing fruit platters for children during programs.

*A lot of salty, high sugar snacks because it's easy and convenient. Parents don't believe that their children are willing to try foods, I've noticed that. (Int#11 Metro)*

Most stakeholders advised they saw children consuming fruit, but perceived less consumption of vegetables was happening in the home.

*[I see children] eating fruit but not so much veggies. But then at the playgroups when they're all given morning tea the kids love the fruit. Even quite early on. So that's kind of an indication that they must be given fruit at home, it's familiar to them. Whereas, generally speaking, they don't touch the vegetables because they're not introduced. (Int#9 Regional)*

Diversity was seen in the level of disadvantage experienced by families. Organisations within metropolitan areas engaged with parents across all levels of socioeconomic status, including families that were experiencing high levels of disadvantage. However, stakeholders in the Perth metropolitan area reported less widespread levels of hardship or poverty than stakeholders in regional and remote areas.

*So, this year we have had an influx of families come into the centre, well into the town, that are here because of cheap [government] housing and a lot of those families are on benefits, and we do have quite a lot of single families actually, so we've had a big change in demographics definitely over this last year. (Int#4 Regional)*

*In my mind our community...is low socioeconomic and we have addiction issues and we have long-term generational poverty... there's not a lot of good news stories... there are some but there's not a lot, there's more that are [on] struggle street and [have] complex needs. (Int#6 Metro)*

## **Theme 2 Cooking**

Stakeholders were prompted to discuss the amount of planning, selection and preparation of food for children, including what they thought was happening at parents' homes around cooking and meal preparation. Stakeholders spoke about variety in the amount of cooking being carried out by parents.

*Yeah, take away is quite common so lots of hot chips and soft drink and McDonald's seems to be quite common. But on the other hand, I do know a number of families that really enjoy their home cooked meals. (Int#1 Metro)*

Two stakeholders believed CALD families were doing more cooking than "Aussie families" (Int#6 Metro). Access to commonly used ingredients or cultural foods for CALD families was difficult, which was discussed as a barrier to cooking their traditional foods. Additionally, transport for some families to access food stores was a barrier to purchasing cultural foods. Some families without motor vehicle access could only access food from stores that were within walking distance to their homes, which limited the variety of food stores they had access to.



*Other than our Indian families, I know that they do [cook], 'cause that's just a cultural expectation. I mean we have some that literally will go home at lunch time and prepare [meals] and have it ready for their children. (Int#7 Metro)*

Parents' lack of skills or financial barriers to cooking was also described by stakeholders.

*They're actually wanting to know how to cook healthy food without it being too costly. That's the biggest gap, I think the intent is there and the desire is there but the budget or the capability of them to know how to spread their money across healthy food is a big gap and they've actually recognised that themselves, so they've been asking for support in that. (Int#3 Metro)*

For some families, a lack of food literacy skills was also seen as a barrier to being able to provide healthy meals for children.

*Education's probably a big thing as well. So not just sort of formal schooling education but also the mums mostly that we deal with perhaps missing out on some of that, some of those life skills education as well that others seem to have picked up. Either through school or other higher education or just through family kind of education as well around feeding your family. (Int#1 Metro)*

### **Theme 3 Fussy Eating**

Around a third of stakeholders ( $n = 4$ ) conveyed the struggles experienced by parents with children who were seen as fussy eaters. They spoke of parents trying to appease children's wants around food and giving in to their children's demands. Stakeholders also described parents' lack of knowledge or strategies when children refused food. It was suggested that parents gave into children's demands and would feed them anything rather than see their children not eat.

*I'll ask parents when they've got challenges with their kids eating, some of them are cooking four different meals. Like one for one child, one for another, one for the husband and one for themselves if they can actually get anything to eat themselves,*

*otherwise they're picking off plates and then they've got problems with being overweight and things like that. (Int#13 Metro)*

#### **Theme 4 Introduction to solids**

Introducing solids to babies was perceived as a difficult period for parents. Stakeholders explained they felt there was conflicting advice for parents from different information sources about introducing solid food.

*They doubt themselves a little bit and they're not sure about how to get started and what the right texture is. (Int#10)*

Another area of concern expressed by stakeholders about introducing solids to babies was the timing of giving solid foods before the recommended guidelines of around 6 months of age (National Health & Medical Research Council, 2012).

*We find that there's still people who aren't particularly following the Department of Health guidelines and starting solids before 6 months and that is with all cultures. (Int#13 Metro)*

*What I hear is this rush to get kids off bottles and on solids. So, although you know like I think we've had a flyer once about the World Health Organization [that] says no solids before 6 months and all that sort of stuff. But I think it's getting earlier. (Int#4 Regional)*

Stakeholders expressed they felt some CALD families relied on information they had learned from their own mothers and were not introducing foods at the recommended age. Potentially the lack of engagement with community child health nurses during the first 6 months of their baby's life was seen as a barrier to receiving information at a critical stage of child development for some.

*So, what we find is when parents come here to see the child health nurse who is on site, you know they will get their initial home visit and then they'll come for their 6 week appointment. There tends to be a bit of a drop off at that, at their next appointment and then a further drop off at about 2 years, which tends to be when some challenging issues with nutrition and eating start arising. (Int#13)*

Cost and the risk of wasting food was also a barrier to parents willing to offer new foods to their children.

*Some parents are very concrete, and they can't see that you just have to persist and it [acceptance of new foods] will happen. I guess if you try it at home and they don't like it once you don't buy it again and you just think, Oh well, they don't like it then. So maybe it comes back to you know the shopping and money a little bit. If you're going to buy a kilo of bananas and realise your child doesn't like it, you're not going to go and buy 'em again. (Int#11 Metro)*

### **Theme 5 Cultural impacts on knowledge and food selection**

Stakeholders discussed how they worked with several distinct cultural groups. Culture had an influence on parents' knowledge about healthy food and what types of foods were selected for children.

*We have a really diverse population here. So, I think just in this school alone there's something like 66 different cultures. (Int#12)*

Stakeholders believed lack of knowledge around healthy food in Australia was difficult for some CALD parents. Not having a good understanding of the food environment in a new country was assumed by some stakeholders as a barrier to providing healthy choices for children. Some stakeholders worked with newly arrived families, including families who were on humanitarian visas. These families needed support around healthy eating, budgeting, assistance with quick family meals and healthy alternatives to buying discretionary foods.

*So, one thing we battle a lot with is the refugee families, in particular the ease of snacks in Australia. So, it's just easy to get a box of muesli bars and they're only \$2 but they don't realise, they don't think about the nutritional content and the value in the food. (Int#11 Metro)*

Stakeholders working with CALD families observed some diverse and non-conventional approaches to feeding children, such as hand feeding older toddlers. They perceived children in CALD families were given less independence and opportunities to explore food by their parents. They described CALD parents as not wanting to create a mess or waste food.

*CALD families will [hand] feed children. That's a cultural thing, I think. Even if they're not hungry they'll be shoving food in their mouth. On the mat at fruit time, you'll be doing song time and the kids will be la-la-la-la and all of a sudden this hand will come around and shove food in their mouth. (Int#6 Metro)*

Stakeholders expressed they felt cooking was seen as the mother's role and food played a big part in the day to day life within CALD families. They explained how parents identified strongly as being providers and were often thought of as being "good parents" (Int#11 Metro) when they saw their children eating.

### **Theme 6 Food insecurity and socioeconomic status impacts**

Money was a barrier for some families to providing healthy food.

Stakeholders saw high levels of disadvantage, which played a direct role in families being food insecure. Two organisations offered small food pantries for families to access food.

*Food security I guess is a big deal for a lot of our families... they're struggling with how to nourish themselves appropriately... you know [from a] healthy food intake perspective ... so [I see] a lot of overweight. I mean we do have a number of parents who are very underweight as well, so just the whole food security thing's an issue. (Int#1 Metro)*

Stakeholders gave accounts of many families battling financial insecurity.

*Most families are struggling, some just seem to be able to manage their food budget better than others. Why is that, well I'm not you know, yeah overly sure why that is but there's other competing interests for their household budget. (Int#1 Metro)*

A reliance on inexpensive takeaway foods also played a role in feeding families.

*The idea of sort of buying you know a bottle of coke and a loaf of white bread and \$5 worth of chips. So, dinner for \$8 that can feed six of you, nothing's going to go to waste, everybody's going to enjoy it, there's going to be no tantrums or no, you know, there's nothing to wash up, there's nothing to prepare, it's quick and easy and everybody's going to have fullish tummies. (Int#1 Metro)*

Overall healthy food was seen as expensive and sometimes unattainable for families. Stakeholders voiced concern that some families would tell them they could not afford to eat healthily.

*Yeah, you always hear the whole thing that, and I know too as a parent that all the bad food's cheap and the good food's expensive so that's a thing that I hear a lot about. That to eat healthy is quite a lot of money like compared to being able to buy a dollar packet of chips. (Int#5 Regional)*

Stakeholders working in regional locations experienced parents with a higher level of disadvantage and saw food security as a “major issue” (Int#8 Remote).

*We provide, rather than just providing like fruit, [during] fruit time we do provide sandwiches or a cooked meal sometimes for our participants and that is just a, for a bit of extra sustenance to get them through the day. (Int#8 Remote)*

Some traditional Aboriginal foods and hunting was carried out in the one remote location to supplement food supplies for families.

*A lot of families still eat a lot of traditional food ... there's still a lot of hunting going on where emu, kangaroo, bush turkey, fish, a lot of fish is eaten you know when you can get it. (Int#8 Remote)*

Cost and distance to food stores in regional locations also was a barrier for many families to access food.

*You notice that they'll only do big shopping and stuff like that when they've got money. And then, you've got lots of people in the household so that food won't last. It will last two to three days max ... then they're back to their diets of noodles and Weetbix and bread... Yeah cost is a big factor, even for myself personally who works ... the cost of food up here it's enormous, it's ridiculous ... a lot of my family will travel from [location] which is 350 km away to do their fortnightly shopping. (Int#9 Regional)*

Although food insecurity was something newly arrived families may have experienced in their home countries, stakeholders also considered that the ongoing effect of having experienced food insecurity was still affecting behaviours in children and parents.

*They may have come from war torn [countries] where food is really scarce, so when there is food there you will take as much food as you can take with you. (Int#13 Metro)*

## **Objective 2. Barriers and enablers to engaging parents in nutrition programs**

Stakeholders spoke of a range of barriers to engaging parents in programs, and what they had experienced around attracting and recruiting parents to attend similar programs within their centres. Themes included (1) *lack of transport, social support and engagement*, (2) *trust*, (3) *information*.

### **Theme 1: Engagement**

A lack of transport for parents to attend programs was a barrier expressed by just over half of the stakeholders ( $n = 7$ ). Parents who did not have their own transport were restricted in their ability to attend programs. Some stakeholders had the capacity within their organisation to provide transport to pick up parents and children so they could attend programs at their centres.

*A lot of families don't have cars so it's, you walk to the local shop which around here the produce is probably expensive and not great as well. (Int#12 Metro)*

In some of the outer metropolitan areas, which did not have a lot of social infrastructure or support, parents were faced with many barriers to attending community-based programs.

*I think, again I think that's a lot to do with isolation and lack of support because it's quite a new developed area, there's not a lot of networks and if you're a young mum and you don't have a car, there's not a lot of transport options. (Int#2 Metro)*

One stakeholder discussed the situation of parents who lived with a high level of uncertainty in their lives, such as having to care for other family members' children with very little prior notice, which was a barrier for parents to attending programs.

*Just the general, yeah level of responsibility and caring requirements that our families you just cannot predict or plan ... so a mum might be you know more than happy to come and a month or two before she signs up and says yes I definitely*

*want to do that, all of a sudden she has you know four kids that enter her care because a family member is unwell or is otherwise indisposed all of a sudden. Her, what she's planned, gets completely thrown out because she's got her two nieces and two nephews to look after. (Int#1 Metro)*

Language was a barrier for CALD parents attending programs. Stakeholders explained that they did not always have funding available for interpreters to be employed to translate during programs. They also felt that interpreters could sometimes be a barrier for non-CALD parents attending programs.

*The challenge with interpreters is having multiple languages within one group [centres have multiple language groups]. Yeah, because that can be distracting for everyone. And it can actually make a session go dull if you're stopping and starting all the time. (Int#13 Metro)*

A recurring challenge experienced by stakeholders was recruiting hard to reach parents, or parents that have low levels of engagement in community programs. For example, parents experiencing high levels of disadvantage, Aboriginal, or CALD parents. Even when stakeholders were able to recruit these types of parents, it was often difficult to retain their attendance in the programs.

*Cause you want to make it available to the people who really need it. But they're often the ones that don't come. (Int#2 Metro)*

Most stakeholders ( $n = 8$ ) expressed that the provision of childcare (creche) was a way to engage more parents in programs ( $n = 10$ ) and would reduce distractions and encourage parents to attend programs.

*The biggest gap with any session is lack of child care. So, a creche attached to this would be phenomenal. So if you've got your creche you could have it at any time during the day. Yeah, that's your selling point definitely. (Int#3 Metro)*

*I think some people initially do come along because it's a break for them because the kids can be in the creche. Sometimes that's a driving force. (Int#13 Metro)*

## Theme 2: Trust

Building trust with parents was seen as a significant factor in recruiting and retaining parents in programs. Delivering programs in locations such as parenting centres or schools, where parents were familiar was seen as important, as parents already had an established level of trust with the staff. These locations also provided easy access for parents as they were often within walking distance for parents from their homes.

One stakeholder discussed the importance of the approach of program facilitators and relationship building skills in retaining parents in programs. For example, having a group learning approach to provide opportunities for parents to share their own experiences about feeding children was better than experts coming in and telling people what to do.

*I'm sure but one of the biggest things that engages a group more I've found is factoring in time in your workshop to allow them time to give you their experience. So then they become part of the workshop. Instead of the chalk and talk which some presenters do. Because I'm a little bit of a nightmare if I sit in on workshops, I'll stop the presenter and go, "Can we just go round the room first and introduce ourselves and say how old our children are and what our experience is with the topic?". (Int#6 Metro)*

Many of the stakeholders and their staff had developed and built a high level of trust with families over years of working with them. Stakeholders were also good referring agents for programs, often personally recommending programs to parents they felt would benefit from them. Stakeholders spoke about recruiting parents to programs and by understanding the needs of the families they worked with.

*So it's about knowing their, their routines and their lives and making it fit. And it just works. It's a symbiotic relationship there, what works for you, works for us and it's nice ... For our long, 5-week or more courses, parenting courses like Circle of Security, Tuning into Kids, Bringing up Grandkids, they're all run for 5–8 weeks at a time ... It's relationships, it's about gearing workshops to meet their needs, knowing the community and knowing what's the topic of the day, knowing what people are talking about. (Int#6 Metro)*



### **Theme 3: Conflicting and lack of information**

Knowing where to get trustworthy information about nutrition or feeding children was seen as difficult for parents. Often there were several conflicting sources of information, such as family members or via the internet.

*And I think the other thing again meeting new parents, often they've got siblings and they're going through those challenges of having a new baby and having a toddler ... and they're confused with a lot of the information that's out there online. So having information that is trustworthy and that they can access easily is something that they all identify. There is so much information out there. (Int#3 Metro)*

Although many stakeholders worked closely with community child health nurses, they felt parents were not adequately accessing this information source.

*I'd like to think they're getting them [information] from their child health nurses and I'm sure they are, I'm sure they do a nice job in really trying to push the healthy eating messages. I just wonder if some of that stuff's getting lost in all the information that comes to families around their children ... 'cause they're always on about you know, I mean they do certainly from GPs from their child health checks, that's a big, big push. Schools for sure. So that might be trickling, you know for older children, trickling down to their younger siblings. So when kids start school and kindy and things, so some of that stuff is coming to parents from their children. Yeah and there's certainly a lot of sharing, so peer to peer kind of sharing, so within the community, parents talking to other parents, so that happens too. (Int#1 Metro)*

Nutrition information was shared between families, particularly within Aboriginal families.

*So that's certainly the difference I find with those two audiences [Aboriginal and non-Aboriginal parents] as I'm seeing them as groups. You know I could go to the intro to solids non-Indigenous group and there's so many questions based on the fact that they've read so many different things on the internet that are all conflicting. Whereas the non-Indigenous groups, and some have a bit more faith in themselves. (Int#10 Regional)*

The internet was also a source of information for parents, but stakeholders felt parents were frequently confused by the amount of information and often conflicting information available to them.

*Well, I think a lot of the problems come from looking at stuff online. They're trying to get answers to questions and what's coming up is different from every source ... And I also think that maybe because, I guess the way non-Indigenous community works, like you know it's your family centre, you might have had access to a few other babies in your life so there's not so much kind of sharing the children and sharing of information. (Int#10 Regional)*

Although stakeholders worked closely with parents and had formed strong and trusted relationships, stakeholders stated they had concerns with providing information to parents about feeding children.

*I think the fact that the most of them feel very safe and very comfortable here. They've got to know us. (Int#12 Metro)*

On one hand they wanted to help parents when they could see areas for improvement or change, but on the other hand, they did not want to be seen as telling parents what to do as they potentially could lose the trust they had built with them.

*Encouraging, them to change you know apple juice to water or whatever. But we have to be careful we're not stepping on toes as well and we're not the experts in what the Health Department recommends so we have to be careful what we say. That's a bit of a line that sometimes we can and sometimes we can't cross. (Int#11 Metro)*

### **Objective 3. Health professionals perceived parents' gaps in knowledge or skills**

Stakeholders were asked to offer suggestions for program topics or nominate the types of child feeding information that would benefit parents. Topics were grouped into three themes: (1) *nutrition*, (2) *food parenting practices* and (3)

*child nutrition and development.* A number of suggestions were made with several nutrition specific topics including iron rich foods (Int#1 Metro), quick family meals, food safety and labels, food and sleep associations (Int#3 Metro), cooking and portion sizes (Int#13 Metro), promoting breastfeeding, healthy swaps, healthy options for cultural foods (not Anglo based) (Int#2 Metro), healthy lunch boxes, cooking for the family and feeding people on a budget (Int#5 Regional). Food parenting practices topics included providing healthy food for children (Int#12 Metro) and help with fussy eaters (Int#5 Regional). Suggestions for child nutrition and development topics included the importance of the first 1000 days (Int#2 Metro), transitioning to solids (Int#7 and 12 Metro), development feeding stages (Int#3 Metro), and why children need certain foods and benefits of healthy food for children (Int#8 Remote).

## **3.4 Phase 3 Program Development**

Objective:

1. Design and pilot a nutrition education program for parents of 0 to 5-year olds living in disadvantaged areas in Western Australia integrating the concepts of food literacy and positive parenting feeding practices.

### **Stage 1 Triangulation of Phases 1 and 2**

Through the process of triangulation (Pilnick & Swift, 2011), findings from Phase 1 (scoping review – systematic search and summary) and Phase 2 qualitative inquiries Study 1 (parent focus groups) and Study 2 (stakeholder interviews), were combined with elements of the existing Foodbank WA's adults food literacy program (FSA) and parent nutrition workshops established for parents living in the Pilbara region of WA. A summary of these findings and implications for the development of the new FSP program is presented below.

#### **3.4.1 Implications to guide program development from Phase 1 Scoping review**

Factors that supported the implementation of interventions included in the scoping review are grouped into seven themes: food literacy, experiential learning, setting and recruitment strategies, positive parenting feeding practices, resource provision, messaging, and theoretical frameworks.

##### **1. Food literacy**

The term food literacy was not explicitly used in reported interventions. There was inconsistency and variation in the number of food literacy domains included. None of the reported interventions included all food literacy domains (planning, managing, selecting, preparing and eating food). The most common domain reported was food selection. Interventions mostly had a greater focus on nutrition knowledge, rather than skills and behaviours. Interventions included dietary guidelines, infant feeding guidelines, food

groups, appropriate foods for infants and children, portion sizes, and the importance of dietary variety for children. To a lesser degree, interventions that had a food literacy component included some information about food selection, such as label reading or navigating shopping. The domain of eating food was included within interventions with a cooking component and parents and children sharing prepared food. These collaborative learning activities helped parents understand intervention messages. Meal planning was included in four interventions, for example one on one education with a facilitator discussing meal planning and food shopping on a budget. Some interventions provided food literacy resources such as shopping lists, meal planners or recipes, however it was unclear whether participants were guided or provided education around these resources. Including all domains of food literacy in the FSP program will provide a comprehensive approach to support parents to achieve the dietary recommendations for themselves and their children.

## **2. Experiential learning (hands on approach)**

Several interventions included cooking as an experiential learning strategy. Cooking interventions reported positive outcomes in the reduction of take away meals and improvements in children's fruit and vegetable intake. Participants' children were also involved and encouraged to assist with meal preparation, which resulted in an improvement in supportive food parenting practices and an increase in a child asking for healthy food. Integrating cooking and experiential activities into the FSP program will provide an effective way to support parents' skill building, capacity and self-efficacy.

## **3. Setting and recruitment strategies**

The setting and recruitment strategies supported intervention success. Utilising existing community-based organisations increased participation of hard to reach, or groups with low engagement. Recruiting first time parents and parents of younger children, under 2 years of age, when parents are motivated and receptive to providing healthy food, was also a successful strategy. Exploring opportunities to implement interventions within existing

locations where parents access services and have appropriate amenities to enable cooking to be facilitated should be investigated.

Interventions that focused on the family and within the family home were also consistently reported in the research. The delivery method varied between weekly face to face group interventions to one on one home visits. Face to face interventions in a group setting provided social support for parents and allowed group discussion about overcoming barriers and problem solving. One intervention recommended limiting the intervention duration to 4 weeks, because attendance rapidly declined after this time. Conducting formative research to align parent feeding goals to the intervention was reported as an important strategy to engage parents in an intervention. Formative research could also be used to investigate parents' timing preferences such as time of day and the most suitable duration of the program.

#### **4. Positive parenting feeding practices**

Anticipatory guidance on protective feeding practices, such as repeated food exposure, and responsive feeding strategies, along with building positive parent/child relationships were reported. Responsive feeding strategies to avoid overeating, for example, could include teaching children to respond appropriately to cues of hunger and satiety to develop self-regulation of energy intakes to their needs. Parenting strategies and skills also supported parents to learn new behaviours, such as role modelling, encouraging feeding autonomy and self-efficacy. Including strategies and principles that combine both food literacy and parenting feeding practices will provide opportunities for parents to improve their own dietary behaviours and learn positive parenting responses to their child's feeding behaviours and should be a consideration for the program.

#### **5. Resource provision**

The provision of resources for intervention participants, such as provision of childcare and basic cooking equipment, recipe ingredients and shopping vouchers, reduced barriers for participants. Resources that provided credible and practical information that reinforced and summarised intervention

information was also reported. Online resources such as videos, learning modules and use of mobile phones to record activities supported face to face interventions. Free childcare for participants' children was recommended to encourage parents to attend interventions. Resources such as recipe booklets, shopping lists or meal planners that support cooking healthy and low-cost meals can be provided to parents. Providing a resource for parents as an incentive at the conclusion of the program, such as a child's plate or cup, may assist with retaining parents for the duration of the program.

## **6. Messaging**

Reinforcing concepts, consistent messaging and tailoring advice for parents were considered enablers to intervention success. Interventions reported providing ongoing support and follow up for families to maintain behaviour change. Reinforcing intervention information and key messages was supported through a number of media including: workbooks and booklets; web-based materials such as guides, videos and websites; group discussions and problem solving; and text messaging. The development of a program workbook would support parents in consolidating the program curriculum and key messages into one book.

In addition to reinforcing program key messages, the way messages are pitched to parents was highlighted in the reported interventions. Placing value on developing children's positive health behaviours, parent-child relationships and social interaction was recommended. Another reported strategy was to focus on providing a positive emotional environment during mealtimes and feeding to encourage healthy eating, rather than parents placing pressure on children or too much focus on a specific behaviour, such as eating vegetables. To reduce the risk of harm of negative behaviours, this approach is an important consideration when discussing feeding practices with parents.

## **7. Theoretical frameworks**

The most reported theoretical framework used to guide behaviour change was the social cognitive theory (SCT) (Bandura, 1998). The basis of the SCT

requires an individual to gain competencies that affect their physical and emotional wellbeing, and the self-regulation of healthy habits (Bandura, 1998). Efficacy belief – or the ability to believe in one’s own skills – is the major basis for action. Self-efficacy can be influenced through mastery experiences, vicarious experiences, social persuasion and one’s own somatic and emotional states (Bandura, 1986). Two interventions reported goal setting, which is an important strategy to increase efficacy (Fisher et al., 2019; Fox et al., 2020). Few studies described how theory guided the intervention design and how theory was used to explain the results.

The self-determination theory (SDT) (Deci, 1985) was used in conjunction with the SCT in one recent intervention (Fox et al., 2020). The SDT is a basic human motivation theory that pivots upon the contrast between self-determined (internal motivations) and externally coerced motivators (Di Pasquale & Rivolta, 2018). The SDT can be applied within nutrition interventions through food parenting practices which are strategies adopted by parents to regulate their child’s eating behaviour (Di Pasquale & Rivolta, 2018). Theoretical frameworks are important building blocks vital to guide the program design and strategies. A combination of theoretical frameworks that have been tried and tested in the interventions examined by this review will provide an evidence base from which the FSP program will be developed.

### **3.4.2 Implications for program development from Focus Groups (Phase 2 Study 1)**

A summary of the 10 themes developed from Phase 2 (qualitative inquiries Study 1: parent focus groups) and the key implications for program development are described in Table 7.



*Table 7. Key Implications From Qualitative Inquiry Study One (Parent Focus Groups) Findings To Guide Food Sensations For Parents Program Development*

| Theme  | Implications for <i>Food Sensations</i> for Parents program   |
|--|---|
| Feeding is emotional                           | Facilitators to be aware of and have an understanding that some parents may experience feeding as a stressful and difficult period. Reassure parents that everyone is trying their best, not to put too much pressure on parents to make too many big changes. Work on small goals and one or two long-term goals. Establish rapport and trust with program participants is vital in supporting parents through this emotional time.                                  |
| Variations in routine and feeding structure    | Include information about the sDOR* establishing routines and consistency in feeding messages within program curriculum. Provide opportunities for parents to practice positive feeding behaviours.   |
| Power struggles                                | Include strategies that empower parents to feed children that aim to reduce power struggles. Integrate activities that provide opportunities for parents to role play or practice feeding children using sDOR* strategies.  |
| Quick and easy                                 | Provide recipes for easy recipes that provide nutritious meals and snacks that can be prepared in less than 30 minutes. Provide examples of planning meals and taking food out of the home (e.g., ideas for packing lunch boxes by preparing foods that can be stored in the freezer to save time).   |
| Lack of strategies for feeding autonomy        | Include responsive feeding strategies that support autonomy of the child. Provide opportunities to learn via group discussion, activities and allow parents to share own experiences.   |
| External influences                            | Facilitators to be aware of the diverse external influences on parents. Provide opportunities for parents to discuss and share their experiences.   |
| Whatever works                                 | Improving food literacy skills for example strategies that support planning meals and snacks. Include in the program curriculum strategies that aim to improve child competency and autonomy within feeding (e.g., parent provides and child decides). Reiterate importance of repeated exposure – up to 15 times before children may accept new foods.   |
| Healthy is important, but difficult to achieve | Include strategies that aim to improvement parents' knowledge and understanding of a healthy diet for adults and children. Incorporate dietary and infant feeding guidelines and recommendations. Include examples of healthy foods and snacks. Inclusion of cooking provides opportunities to try new recipes and to determine if appropriate for the family. Promote family meals rather than individually catering for family members to reduce burden of cooking. |

| Theme                                | Implications for <i>Food Sensations</i> for Parents program  |
|--------------------------------------|--|
| Improvements in food literacy skills | Include strategies than aim to increase knowledge, skills and behaviours for all domains of food literacy (plan, select, manage, cook and eat healthy food). Incorporate information, activities and opportunities to practice behaviours.                         |
| Conflicting information overload     | Provide summary of program information in a program workbook. Include referrals to reputable sources of information. Provide clear messaging and reinforce messaging throughout program. Provide opportunities for discussion to bust myths around healthy eating. |

*\*sDOR Satter Division of Responsibility of feeding framework.*

### **3.4.3 Implications for program development from Phase 2 Study 2 (Stakeholder interviews)**

Interviews with stakeholders revealed several barriers to recruiting parents to a food literacy program. These included access to transport, language, and cultural barriers. Often these barriers were magnified for those who were seen as being in the most need of supportive parenting programs. The barriers were consistent with research that found the ability, availability and accessibility of early childhood services can act as a barrier for socially disadvantaged families to learning about healthy eating (Myers et al., 2015).

An enabler to recruiting parents to programs was working with staff within community-based parenting organisations who had established relationships and trust with families and had gained an understanding of families' needs. Staff in these organisations were essential in recruiting parents to programs. For example, stakeholders discussed how parents would attend programs that were considered to have a long duration, between 5 and 8 weeks – including the Circle of Security (Hoffman, Marvin, Cooper, & Powell, 2006) and Tuning into Kids program (Havighurst, Wilson, Harley, Prior, & Kehoe, 2010) – if the content was relevant and appealing. The addition of free childcare was recommended by stakeholders to assist with recruiting parents to programs.

Providing a safe and inclusive learning environment, which facilitates trust and rapport with families, was a crucial part of delivering programs within community parenting organisations. Transitioning to parenthood is a time when parents have a heightened receptiveness and look for information on

feeding and forming social connections with other parents, particularly if they are first time parents (Love, Laws, Litterbach, & Campbell, 2018). Aligning program processes to the needs of parents and tailoring content and delivery style that creates group discussion and strengthens social connections are important factors in engaging parents (Love et al., 2018).

Focusing on improving food literacy self-efficacy and skills may support parents to develop resilience to, and improve their management of, food insecurity (Begley, Paynter, Butcher, & Dhaliwal, 2019b). The combination of improving parents' food literacy skills and parenting feeding practices can support parents in achieving greater adherence to dietary and feeding guidelines and provide them with skills and strategies that support feeding children.

### Summary of key implications

Table 8 summarises the key findings from research phases 1 and 2 to guide the development of the FSP program.

*Table 8. Summary Of Key Findings From Phases One And Two To Guide Program Development*

| Program component   | Consideration for <i>Food Sensations</i> for Parents program   |
|---------------------|--|
| <b>Facilitation</b> | <ul style="list-style-type: none"> <li>• Encourage group discussion and opportunities to share experiences</li> <li>• Be aware of diverse external influences that impact on child feeding</li> <li>• Have an awareness parents may experience feeding as a stressful time</li> <li>• Build trust and rapport with parents</li> <li>• Create a relaxed and non-judgemental learning environment</li> <li>• Include experiential activities to practice behaviours</li> <li>• Understand barriers for priority populations to eating healthy food, for example, poverty, food insecurity and financial hardship</li> <li>• Tailor content to the literacy level of group, consider using interpreter for groups with very low English proficiency</li> <li>• Consider and research needs of CALD* participants by including familiar cultural foods in activities prior to delivering program</li> <li>• Tailor content and delivery style to create group discussion to strengthen social connections and engagement among program participants</li> </ul> |

| Program component                           | Consideration for <i>Food Sensations</i> for Parents program   |
|---|--|
| <b>Food literacy and cooking</b>            | <ul style="list-style-type: none"> <li>• Curriculum to support parents to improve their food literacy knowledge and behaviours in all food literacy domains. Place a greater focus on the <i>selection</i> domain, for example, include label reading in the curriculum and how to select healthy food</li> <li>• Curriculum to include information and activities which aim to improve parents' knowledge about dietary guidelines and infant feeding guidelines and children's feeding development stages</li> <li>• Include a cooking component to provide hands on experiential learning for parents and opportunities for parents and children to try new recipes and taste novel foods</li> <li>• Provide opportunity for parents and children to eat together</li> <li>• Provide recipes for nutritious meals that can be prepared quickly</li> <li>• Provide time saving ideas for food preparation</li> <li>• Include strategies that support meal planning to save time and reduce stress around mealtimes</li> <li>• Include foods and recipes that are appropriate for cultural groups, for example halal foods</li> </ul> |
| <b>Positive parenting feeding practices</b> | <ul style="list-style-type: none"> <li>• Include sDOR** framework to support feeding routines, autonomy and reduce power struggles between children and parents</li> <li>• Provide opportunities for parents to practice positive feeding behaviours</li> <li>• Curriculum to include responsive feeding practices to support parents to improve their child's feeding behaviours</li> <li>• Incorporate the self-determination theory as a framework to underpin program curriculum and activities that support children's autonomy, relatedness and competence with feeding</li> </ul>   |
| <b>Setting and recruitment</b>              | <ul style="list-style-type: none"> <li>• Identify community settings, where parents access services and social support, appropriate for potential delivery sites and to recruit program participants</li> <li>• Recruit new parents with children under 2 years to provide opportunities which supports an anticipatory guidance approach. For example, recruit parents from new parent groups through community parenting organisations</li> </ul>  |
| <b>Theoretical underpinnings</b>            | <ul style="list-style-type: none"> <li>• Parents set small goals weekly to make positive changes and one or two long-term goals</li> <li>• Incorporate a theory to guide intervention strategies such as the social cognitive theory (Bandura, 1998)</li> </ul>  |

| Program component       | Consideration for <i>Food Sensations</i> for Parents program   |
|-------------------------|--|
| Resources and messaging | <ul style="list-style-type: none"> <li>• Incorporate Australian Guide to Healthy Eating (National Health and Medical Research Council, 2013) to guide program curriculum and activities</li> <li>• Incorporate Infant Feeding Guidelines and Australian Dietary Guidelines to guide program curriculum and activities</li> <li>• Provide opportunities for discussion to <i>bust myths</i> around healthy eating</li> <li>• Provide free childcare for participants' children</li> <li>• Provide free resources including a program workbook, recipe booklets and an incentive for parents to complete the program</li> <li>• Provide ongoing support for participants to maintain behaviour change such as a Facebook® group</li> </ul> |

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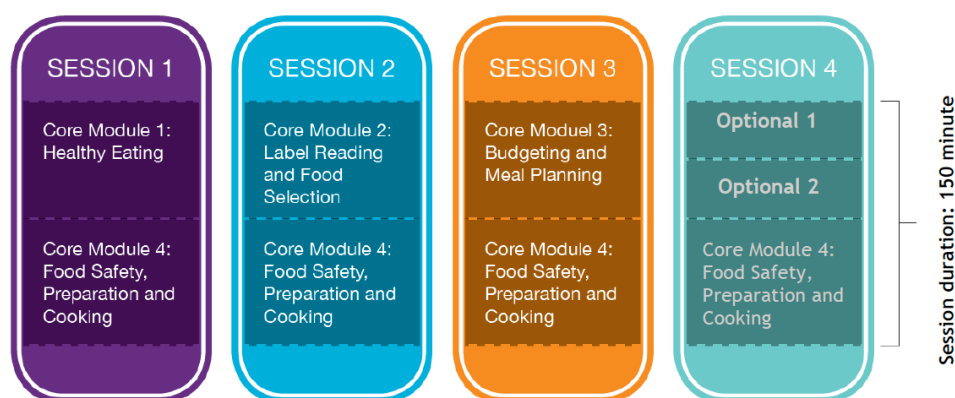
\* CALD Culturally and Linguistically Diverse.

\*\* sDOR Satter Division of Responsibility of feeding framework.

### 3.4.4 Adapting previous existing Foodbank WA programs

Foodbank WA had two food literacy programs at the time of the development of the FSP. Foodbank WA's FSA food literacy program incorporated four weekly sessions (a total of 10 hours). Topics included healthy eating; label reading and food selection; budgeting and meal planning; and food safety, preparation and cooking (see Figure 4). Participants were provided a range of resources including recipe booklets, meal planners and shopping lists, and healthy eating portion plates to support their learning.

Figure 4. Foodbank WA's Food Sensations For Adults Program Overview



The existing parent nutrition workshops delivered in the East Pilbara region of WA included four 1.5-hour standalone workshops, which covered the topics: introduction to the Australian Guide for Healthy Eating (National Health & Medical Research Council, 2013), label reading, fussy eating, and food outside the home. Participants were provided recipe booklets and the Growing Strong Series nutrition pamphlets and resources produced by Queensland Health (Queensland Health, 2002), which were developed for Aboriginal and Torres Strait Islander peoples.

### Theoretical Underpinnings

The existing FSA program was underpinned by the health belief model (Janz & Becker, 1984) and social learning theory (Bandura, 1998). The program utilises the four constructs of the health belief model (perceived susceptibility, perceived severity, perceived benefits, and perceived barriers) to predict and

influence behaviour change. It also builds self-efficacy by operating as a cue to action, utilising goal setting from the social learning theory.

The East Pilbara workshops educational materials and facilitation style was guided by behavioural learning theories which were considered appropriate for the target audience including the social cognitive theory (Bandura, 1998), theory of planned behaviour (Ajzen, 1991), and the transtheoretical model (Prochaska & Velicer, 1997).

### **Key implications from existing Foodbank programs to guide the Food Sensations for Parents program development**

Successful elements of Foodbank's existing programs including curriculum, workshop objectives and key messages, cooking, activities, theoretical frameworks and resources were selected and summarised. Table 9 is an overview of the components and implications of these elements, and how they were modified for the new FSP program.



*Table 9. Overview Of Foodbank WA’s Existing Pilbara Parent Nutrition Workshops And Food Sensations For Adults And Implications For The New Food Sensations For Parents Program*

| <b>Description</b>                      | <b>Purpose</b>  | <b>Key Messages</b>   | <b>Activities</b>   | <b>Implication and Modification for FSP</b>  |
|---|---|---|---|--|
| <b>East Pilbara Nutrition Workshops</b> |   |   |   |  |
| Module 1 Sensational Start              | To provide an overview of healthy eating for children from ages 0–5 years and demonstrate how these principles can be incorporated into everyday life using the recommendations from the AGTHE* and the Infant Feeding Guidelines (IFG) | <ol style="list-style-type: none"> <li>1. Feed your family a wide variety of nutritious foods every day</li> <li>2. Encourage children to drink plenty of water and avoid sugar sweetened beverages. Children can eat family foods from 12 months</li> <li>3. Feed your baby iron rich foods from 6 months</li> <li>4. Encourage and support breastfeeding</li> </ol> | <ul style="list-style-type: none"> <li>• AGTHE* sorting activity using familiar foods and food available in Pilbara region Incorporating traditional Indigenous foods</li> <li>• AGTHE* Brochures</li> <li>• Give your baby the best start brochure</li> <li>• Cooking</li> </ul> | <ul style="list-style-type: none"> <li>• Include healthy eating overview for parents in Week 1. Children over 12 months eating the same food as the rest of the family</li> <li>• Include child feeding development stages and infant feeding guidelines Week 2. Include a range of foods appropriate for target group including cultural foods for CALD parents</li> <li>• Focus on iron rich foods and carry over information on more specific iron rich foods in Week 2</li> <li>• Incorporate Australian Dietary Guidelines and IFG in program workbook rather than providing several separate brochures</li> <li>• Develop visual style infographic to support and reinforce message in program workbook</li> <li>• Provide recipe booklets weekly</li> <li>• Develop visual resource of appropriate textures for infants and toddlers using Foodbank’s existing recipes that parents will cook during program</li> </ul> |
| Module 2 Family Mealtimes               | Introduction to the AGTHE* – Aboriginal and Torres Strait Islander version  | <ol style="list-style-type: none"> <li>1. Make food and meal times fun and positive</li> <li>2. Getting kids involved in food preparation helps</li> </ol>  | <ul style="list-style-type: none"> <li>• sDOR** activity</li> <li>• Blind tasting activity</li> </ul>   | <ul style="list-style-type: none"> <li>• Include activities in Week 3 when AGTHE* and child development/nutrition requirements have been completed. Trust and rapport built over previous weeks and introduction to</li> </ul>   |

| Description                       | Purpose   | Key Messages   | Activities   | Implication and Modification for FSP  |
|-----------------------------------|---|--|--|---|
| Module 3<br>Food<br>Investigation | To provide participants with necessary knowledge to understand food labels to support the selection and consumption of nutritious foods | <p>create positive eating behaviours</p> <ol style="list-style-type: none"> <li>3. Provide children with a variety of foods from the five food groups frequently and allow them to decide what and how much to eat</li> <li>1. Encourage children to drink plenty of water and avoid sugar sweetened beverages</li> <li>2. The foods without labels are the healthiest, especially homemade</li> <li>3. Nutrition information panel is the most accurate information on the packet</li> <li>4. The health star rating can be a simple way to compare similar products</li> </ol> | <ul style="list-style-type: none"> <li>• Make every bite count resource</li> <li>• Cooking</li> <li>• Label reading activity using cereal boxes, sugary drinks, muesli bars, yoghurts, savoury chips/crackers</li> <li>• Label reading wallet card</li> <li>• Cooking</li> </ul> | <p>concepts of sDOR** and responsive feeding slowly builds up to this content</p> <ul style="list-style-type: none"> <li>• Include blind tasting activity at start of session</li> <li>• Develop infographics to summarise sDOR** feeding strategies into program workbook</li> <li>• Cooking with children removed. Provide tasting opportunities for children at the end of the session</li> <li>• Each week reinforce children serve themselves, no pressure on children to eat food, provide opportunities during eating together to practice responsive feeding strategies</li> <li>• Incorporate label reading activity in Week 4 when discussing packing a healthy lunch box. Provide examples of readily available commercially prepared baby and toddler foods. Compare costs of commercially prepared foods and examples</li> <li>• Discuss healthy drink options for children in weeks 1 and 2</li> <li>• Discuss infant feeding guidelines for milk consumption</li> <li>• Incorporate label reading card into program workbook with infographic detailing how to select healthy foods</li> </ul> |

| <b>Description</b>                | <b>Purpose</b>  | <b>Key Messages</b>  | <b>Activities</b>   | <b>Implication and Modification for FSP</b>   |
|-----------------------------------|---|--|---|---|
| Module 4<br>Food on the Move      | To provide participants with the skills and knowledge to pack safe and nutritious food to eat outside of the home | <ol style="list-style-type: none"> <li>1. A healthy packed lunch includes a variety of nutritious foods and water</li> <li>2. Keep food safe by choosing easily transportable foods</li> </ol> | <ul style="list-style-type: none"> <li>• Identify missing food group in sample lunch box activity</li> <li>• Recipe booklets</li> <li>• Deadly Tucker recipe brochures</li> <li>• Cooking</li> </ul>                                    | <ul style="list-style-type: none"> <li>• Incorporate module theme into Week 4. Include foods appropriate for toddlers as examples for lunch box activity. Incorporate food safety for both hot and cold foods</li> <li>• Food safety messages to be incorporated into program workbook</li> </ul>   |
| <b>Food Sensations for Adults</b> |   |  |   |   |
| Session 1                         | Healthy Eating  | <ol style="list-style-type: none"> <li>1. Choose foods from the five core food groups every day</li> <li>2. Eat more vegetables</li> <li>3. Small changes can make a difference</li> </ol>     | <ul style="list-style-type: none"> <li>• Icebreaker</li> <li>• Introduction to the AGTHE*</li> <li>• AGTHE* activity</li> <li>• Serve size demonstration</li> <li>• Portion plate</li> <li>• Goal setting</li> <li>• Cooking</li> </ul> | <ul style="list-style-type: none"> <li>• Develop an icebreaker activity to provide opportunity for parents to get to know each other and facilitator</li> <li>• AGTHE* activity to be included in Week 1 with focus on feeding family. Children over 12 months eating the same food as the rest of the family</li> <li>• Include child feeding development stages and infant feeding guidelines Week 2</li> <li>• Incorporate goal setting activity during Week 1 Revisit goals weekly</li> <li>• Week 5 (final session) set longer term goal/s and record in program workbook</li> </ul> |
| Session 2                         | Label Reading   | <ol style="list-style-type: none"> <li>1. Use the wallet card to read food labels to make the best choice</li> <li>2. Drink plenty of water and limit sugary drinks</li> </ol>                 | <ul style="list-style-type: none"> <li>• Goal setting review, barriers and problem solving</li> <li>• Identify marketing strategies</li> </ul>  | <ul style="list-style-type: none"> <li>• Incorporate label reading activity in Week 4 when discussing packing a healthy lunch box Provide examples of readily available commercially prepared baby and toddler foods Compare costs of commercially prepared foods and examples</li> </ul>   |

| Description | Purpose  | Key Messages   | Activities  | Implication and Modification for FSP  |
|-------------|--|--|---|---|
| Session 3   | Budgeting and Meal Planning  | <ol style="list-style-type: none"> <li>1. Buy foods from the five food groups to save money</li> <li>2. Meal planning can save you money and time</li> </ol> | <ul style="list-style-type: none"> <li>• Assessing foods using ingredients list</li> <li>• Cereal box line up activity</li> <li>• Sugar in drinks activity</li> <li>• Cooking</li> <li>• Goal setting review – incentive and reward</li> <li>• Money Saving Tips</li> <li>• \$30 shopping trolley activity</li> <li>• Meal planning</li> <li>• Cooking</li> </ul> | <ul style="list-style-type: none"> <li>• Provide label reading wallet card in program workbook</li> <li>• Incorporate meal planning and budgeting content Week 5</li> <li>• Include shopping trolley activity during Week 5</li> <li>• Include budgeting for a family scenarios</li> <li>• Incorporate meal planning activity in Week 5</li> <li>• Include meal planner template in program workbook</li> </ul> |
| Session 4   | <ul style="list-style-type: none"> <li>• Optional modules: modulettes</li> <li>• Lunch boxes, snacks eating out, junk food, fad diets, mindful eating, supermarket tour, gardening for health</li> </ul> |  |   | <ul style="list-style-type: none"> <li>• Lunchbox activity incorporated into Week 4</li> </ul>  |

\*AGTHE Australian Guide to Healthy Eating.

\*\* sDOR Satter Division of Responsibility of feeding framework.

The FSP pilot program (version 1) was developed by triangulating the existing Foodbank WA program components together (Table 10) with effective strategies and study recommendations taken from phases 1 and 2 including the scoping review (tables 4 and 5), findings from the formative research (Study 1 parent focus groups) (Table 7) and Study 2 stakeholder interviews (see section 3.4.3). Table 10 contains the 5-week program that was mapped out for weekly topics, key messages and activities.

*Table 10. Food Sensations For Parents Pilot Program Version 1*

| <b>Session</b>                     | <b>Key Messages</b>   | <b>Activities</b>  |
|------------------------------------|---|--|
| <b>Week 1.<br/>Getting started</b> | <ol style="list-style-type: none"> <li>1. Choose foods from all the five food groups every day</li> <li>2. Eat more vegetables</li> <li>3. Children learn how and what to eat from those around them</li> <li>4. Family mealtimes help develop positive food experiences for your child</li> </ol>  | <ul style="list-style-type: none"> <li>• Activity 1: Ice breaker – food that you like, dislike, now like</li> <li>• Activity 2: Program content/expectations/rules</li> <li>• Activity 3: Sorting activity: applying knowledge – AGTHE*</li> <li>• Activity 4: Explain portion plate</li> <li>• Activity 5: Setting SMART goals</li> <li>• Activity 6: Instruction on handwashing and knife skills</li> <li>• Activity 7: Hands on cooking in pairs with recipes demonstrating portion plate principles</li> <li>• Activity 8: Shared meal with children</li> <li>• Activity 9: Review key messages – provide handouts and recipe booklet</li> </ul> |
| <b>Week 2.<br/>Learning to Eat</b> | <ol style="list-style-type: none"> <li>1. Encourage and support breastfeeding</li> <li>2. Introduce solid foods at around 6 months – not before 4 months</li> <li>3. Feed your baby iron rich foods from 6 months</li> <li>4. Children can eat family foods from 12 months</li> <li>5. Children need a variety of food from the five food groups every day</li> </ol> | <ul style="list-style-type: none"> <li>• Activity 1: Review previous week</li> <li>• Activity 2: AGTHE* review</li> <li>• Activity 3: Childhood nutrition/development stages – sort food pictures into appropriate and inappropriate for development stage</li> <li>• Activity 4: Serve sizes</li> <li>• Activity 5: Hands on cooking in pairs with recipes demonstrating portion plate principles</li> <li>• Activity 6: Shared meal with children</li> <li>• Activity 7: Review key messages – provide handouts and recipe booklet</li> </ul>  |

| Session                                       | Key Messages  | Activities  |
|---|---|---|
| <b>Week 3.<br/>Family<br/>Mealtimes</b>       | <ol style="list-style-type: none"> <li>1. Parents/carers are responsible for <i>feeding</i> and children are responsible for <i>eating</i></li> <li>2. Children will learn to eat family foods with time – continue to offer children a wide variety of food from the five food groups on a regular schedule</li> <li>3. Create a positive environment at mealtimes to develop competent eater</li> </ol> | <ul style="list-style-type: none"> <li>• Activity 1: Review previous week</li> <li>• Activity 2: Family mealtimes – discuss current mealtimes/emotions/environment within homes</li> <li>• Activity 3: sDOR**</li> <li>• Activity 4a: Scenario images – Helpful Vs Less Helpful</li> <li>• Activity 4b: Mealtime troubleshooting (optional)</li> <li>• Activity 5: Hands on cooking in pairs with recipes demonstrating portion plate principles</li> <li>• Activity 6: Shared meal with children</li> <li>• Activity 7: Review key messages – provide handouts and recipe booklet</li> </ul>   |
| <b>Week 4.<br/>Food<br/>on the<br/>Move</b>   | <ol style="list-style-type: none"> <li>1. A healthy meal or snack on the move includes a variety of foods from the five food groups and water</li> <li>2. Use the wallet card to read food labels to make the best choice</li> <li>3. Prepare and store foods correctly so it is safe to eat when transported outside the home</li> </ol>   | <ul style="list-style-type: none"> <li>• Activity 1: Review previous week</li> <li>• Activity 2: Reading labels</li> <li>• Activity 3: Lunchbox comparison</li> <li>• Activity 4: Food Safety</li> <li>• Activity 5: Hands on Cooking in pairs with recipes demonstrating portion plate principles</li> <li>• Activity 6: Shared meal with children</li> <li>• Activity 7: Review key messages – provide handouts and recipe booklet</li> </ul>   |
| <b>Week 5.<br/>Feeding<br/>the<br/>Family</b> | <ol style="list-style-type: none"> <li>1. Choose foods from all five food groups every day to save money</li> <li>2. Meal planning can save you time and money</li> <li>3. Cooking at home is healthier, cheaper and fast to prepare</li> </ol>   | <p>Activity 1: Review previous week</p> <p>Activity 2: \$30 shopping trolley – cost of healthy and unhealthy foods</p> <p>Activity 3: Money saving tips – tips to save money and time with food shopping</p> <p>Activity 4: Meal planning – benefits, steps and process</p> <p>Activity 5: Hands on cooking in pairs with recipes demonstrating portion plate principles</p> <p>Activity 6: Shared meal with children</p> <p>Activity 7: Review key messages – provide handouts and recipe booklet</p> <p>Activity 8: Graduation – review expectations, highlights/successes, set long-term goal, present certificates, portion plate and photo collage, invite to join Facebook® group</p> |

Two hour session delivered weekly.

Note – children in care during first one and a half hours of session provided by community parenting organisation.

\*AGTHE Australian Guide to Healthy Eating.

\*\* sDOR Satter Division of Responsibility of feeding framework.

## 3.5 Stage 2 Stakeholder Forum

The stakeholder forum was conducted over 3 hours from 9 a.m. to 12 p.m. on 3, October, 2019. The forum aimed to gain a consensus, using a nominal group process on the FSP program objectives, pilot curriculum, and to generate ideas and to determine priorities and gain consensus on the new program content. The results are presented below.

### 3.5.1 Stakeholder online survey

A total of 24 responses to the online survey were received from 32 stakeholders (75% response rate). The results are presented in Table 11. In addition to the online survey, forum participants were given opportunity to share their opinions, which were recorded during the forum event. A list of additional comments are shown in Appendix J.

*Table 11. Results Online Survey Question: What Do You Think Needs To Be Covered In A Nutrition Education Program For Parents Of 0 To 5 Year Olds In Disadvantaged Areas?*

| Answer  | Count | %   |
|---|-------|-----|
| <b>Nutrition topics</b>   | 7     | 29% |
| <ul style="list-style-type: none"> <li>• Australian Dietary Guidelines, healthy eating</li> <li>• Quantities from each food groups</li> <li>• Understanding food portion sizes, knowing more about early solids, for CALD* families introducing their own culture foods into lunch boxes, play dates and birthday parties, health birthday party foods</li> <li>• Rationale for establishing healthy eating patterns early in life, Australian Dietary Guidelines (including breastfeeding) &amp; Australian Guide to Healthy Eating, introducing solids, fussy eaters</li> <li>• Basic information on how to reduce processed foods and eat more whole food</li> </ul> |       |     |
| <b>Parenting feeding practices</b>  | 5     | 21% |
| <ul style="list-style-type: none"> <li>• Parent decides on what, child decides on how much</li> <li>• Understanding the child development skills children learn through eating, meals</li> <li>• Supportive parenting practices/styles (e.g., authoritative, mum and dad are consistent), tips for grandparents, role modelling</li> <li>• Purchasing practices, limiting discretionary food</li> </ul>   |       |     |
| <b>Food literacy behaviours</b>   | 7     | 29% |

| Answer   | Count     | %           |
|--|-----------|-------------|
| <ul style="list-style-type: none"> <li>• Food label reading, planning of meals</li> <li>• Label reading, menu planning &amp; prep</li> <li>• Being able to understand food labels</li> <li>• Food planning (including practical tips; convenience), food costs, menu planning, food budgeting, adapting recipes (to make healthier recipes as well as making them appropriate for infants), food preparation, supermarket tour (real or virtual), family meal time practices</li> <li>• Understanding food labels</li> </ul>   |           |             |
| <b>Other considerations and comments (specify)</b>   | 5         | 21%         |
| <ul style="list-style-type: none"> <li>• Parents provide, children decide – role models</li> <li>• Cover portion control, importance of healthy choices</li> <li>• Understanding sugar and salts in foods</li> <li>• Milk use reducing as going on to solid foods, but many cultures still give children up to one litre a day and the child is <i>healthy happy baby</i> won't eat food</li> <li>• Cultural/universal info graphics</li> <li>• Grand carers spoon feed child till 3 years and children not independent</li> <li>• Budgeting, child friendly recipes, ideas for kids' lunchboxes and snacks</li> <li>• providing calm mealtimes</li> <li>• Eating healthy on a budget</li> <li>• Food marketing tricks, traps and strategies (including online)</li> <li>• Need to acknowledge the complexities of people's lives (e.g., issues with family, finances, personal health and wellbeing) – don't want to add another thing for them to be worrying about, opportunity for parents to share their ideas and experiences with each other, identifying childcare centres with healthy food practices, how to assess credibility of nutrition information (e.g., celebrity endorsements)</li> </ul> |           |             |
| <b>Total</b>   | <b>24</b> | <b>100%</b> |

\* CALD Culturally and Linguistically Diverse.

### 3.5.2 Forum confirmation/consensus outcomes

The 32 people who attended the forum included health professionals, people with expertise in nutrition and/or health promotion, and those who worked with parents of children aged 0–5 years. Stakeholders represented not-for-profit organisations, government, universities, child parent centres, and Foodbank WA staff. Four WA Country Health staff who were located outside of the Perth metropolitan area participated via video conference software. The proceedings consisted of an overview of the qualitative inquiries (Study 1: parent focus groups, and Study 2: stakeholder interviews) and a presentation of the preliminary findings from the online survey question. Figure 5 records the PowerPoint® presentation of the pilot curriculum (Table 10).



Figure 5. Presentation At Forum Event



### 3.5.3 Confirmatory/consensus process

After Version 1 of the program was presented, stakeholders discussed the program curriculum in small groups and then in the whole forum. Points and the implications for the pilot program were documented on a white board. The discussion raised a couple of minor considerations with the draft program curriculum came to a consensus that the program objectives and content were suitable for the target group. Notes were taken and overlaid with Version 1 of the program to produce a pilot program curriculum. A summary of the findings from the stakeholder forum and online survey and implications of these findings for the FSP program was developed including evidence based information for parents and rationale for importance of child feeding, links to dietary guidelines, inclusion of focus areas including introduction of solids, appropriate textures, development stages, allergies, quantity and servings, cultural and traditional foods, fussy eating, Satter Division of Responsibility in feeding framework (Satter, 1986), exposure, role modelling, positive mealtimes and parenting styles, child involvement, family influences on healthy eating, and child hunger and satiety cues. Food literacy

domains included planning, managing, selecting and preparation. Other considerations were the influences on child feeding such as cultural influences, environmental marketing, resources, and training opportunities. The following topics were excluded because they did not fit within the scope of the program such as sleep expectations for children, and childcare nutrition (see Appendix J for a full listing).

## **3.6 Stage 3 Pilot Program Development and Implementation**

A program logic model was developed to map out the proposed program linking activities with outputs, intermediate impacts and longer-term outcomes (Table 12).

Table 12. *Food Sensations For Parents Logic Model*

|  |
|--|
| <b>NAME OF PROGRAM/PROJECT:</b>  |
| <i>Food Sensations for Parents Program Evaluation 2019 to 2020.</i>  |
| <b>SITUATION:</b>  |
| Foodbank WA has been funded by Healthway to develop a statewide version of <i>Food Sensations for Parents</i> . The existing parent nutrition workshops is funded by BHP for delivery only in the Pilbara region and takes the format of one-off workshops. There are limited programs available for parents except for one-off introduction to solids sessions delivered by child health nurses. Funding has ceased for all nutrition programs for parents of 0–5-year olds in disadvantaged areas in WA.<br>Program Goal: Improve dietary intakes of parents and children 0–5 years in disadvantaged areas in Western Australia.<br>Program Objectives:<br>Parents <ol style="list-style-type: none"><li>1. Improve parent’s confidence, knowledge and food literacy skills</li><li>2. Increase parent’s confidence to apply positive feeding parenting practices to support healthy eating</li><li>3. Increase parent’s vegetable consumption</li></ol>   |
| <b>PRIORITIES:</b>   |
| <ul style="list-style-type: none"><li>• Improve dietary intakes and food literacy behaviours in parents which will reflect in improved nutrient intakes in households including children 0–5 years.</li><li>• Optimal nutritional is vital for children to support growth and health, particularly the first 1000 days (Mameli et al., 2016). A healthy diet is important for appropriate growth and development in children and improves quality of life and wellbeing and reduces the risk of chronic disease.</li><li>• Australian children fall short of Australian Dietary Guidelines (ADG) including: recommended daily servings of vegetables; grain foods and meat and alternatives; almost one third of their energy is from discretionary foods; intake of sodium is well above the level of adequate intake; have a low prevalence of inadequate calcium; dietary folate equivalents and iodine intakes (Australian Institute of Health and Welfare, 2018).</li><li>• The period when solid foods are being introduced to infants is an important stage in the development of appropriate eating habits, as early eating patterns and flavour preferences developed during childhood can track into later life (Birch et al., 2007; Horta et al., 2015; Mennella &amp; Bobowski, 2015).</li></ul> |

- Qualitative, longitudinal, cross sectional, and literature review studies support links among parental feeding behaviours, child eating behaviours, and child weight status.
- There is evidence that specific positive parental feeding practices can support the child’s competence with respect to eating attitudes and behaviours. It is research-based evidence and conceptualises the feeding of young children as a relational, multi-systemic process with parents as the architects of feeding (Lohse, Satter, & Arnold, 2014). Theoretical framework: parents do the what, when and where of feeding, children do the how much and whether of eating.
- Feeding relationship needs to be positive and supportive, parents ensure positive feeding environment, trust and respond to child’s capabilities.

| INPUTS  | OUTPUTS  |   | OUTCOMES   |  |   |
|---|--|---|--|--|---|
|   | ACTIVITIES   | PARTICIPANTS  | SHORT TERM<br>PROCESS<br>INDICATORS  | MEDIUM TERM<br>IMPACT INDICATORS   | LONG TERM<br>OUTCOME<br>INDICATORS  |
| Healthway funded program development & delivery 2019–2021.  | Conduct FSP for parents in disadvantaged areas (5 sessions over 5 weeks).  | Session KPI 2020/2021.<br><br>80 sessions per year.   | Attendance –core program considered 80% or more of program delivery.   | Self-reported change frequency of use of positive parent feeding practices in healthy food selection and mealtime experiences.   | Improved dietary choices from the core foods in the AGTHE*.   |
| WA Department of Health’s Health Promotion Strategic Framework 2017–2021, priority for healthier eating in WA include increasing the knowledge, skills and confidence necessary to choose a healthy diet. Targeted interventions indicate the need to invest in programs that increase food and nutrition knowledge and skills of parents, children and other groups most vulnerable to poor nutrition (Department of Health, 2017b). | Experiential learning improves self-efficacy (confidence) to select and eat healthy foods by performance accomplishments and verbal persuasion (encouragement).<br><br>Goal setting: process of self-monitoring and specific goal setting to facilitate more effective behaviour change(Shilts, Horowitz, & Townsend, 2009). | 16 full programs (4 per term).<br><br>(10% regional areas).<br><br>Parents recruited through community groups: 8 to 12 participants per program (average 10).<br><br>Max sample $n = 160$ per year. | Parents respond positively to FSP delivery including level of agreement about enjoyment of program, cooking and tasting new foods.<br><br>Parents self-reported involvement with home meal preparation and | Self-reported change in knowledge and selection of healthy foods and nutrients in food groups from AGTHE* and ADG**.<br><br>Self-reported improvement in food literacy behaviours: confidence and frequency of use (including planning & | Reduced intake of discretionary foods (high fat, sugar and salt).<br><br>Increased use of food literacy behaviours such as planning, selection and preparation at home. |

| INPUTS  | OUTPUTS  |                                 | OUTCOMES  |  |                                    |
|---|--|---------------------------------|---|--|------------------------------------|
|   | ACTIVITIES   | PARTICIPANTS                    | SHORT TERM<br>PROCESS<br>INDICATORS   | MEDIUM TERM<br>IMPACT INDICATORS   | LONG TERM<br>OUTCOME<br>INDICATORS |
| <p>Foodbank WA have an established food literacy programs and experienced facilitators (2.6FTE) to support program delivery.</p> <p>FSP lesson plan curriculum is evidence based drawing on parenting practices literature.</p> | <p>Hands on successful cooking and eating experiences provide observational learning and peer modelling to support behaviour change (preparing and tasting healthy foods) (Fredericks et al., 2020).</p> <p>Discussion and instruction to address – perceived benefits and barriers/self-efficacy (health belief model).</p> <p>Peer support and learning (Fredericks et al., 2020).</p> <p>Overall enjoyment of FSP may improve emotional states for trying new behaviours at home.</p> <p>Train health professionals to deliver FSP.</p> | <p>Four trainings per year.</p> | <p>eating with child/children.</p> <p>Facilitators effective in FSP delivery.</p> | <p>management, selection, preparation and eating) 3 months after program completion.</p> <p>Self-reported change: goal setting from FSP session (qualitative).</p> |                                    |

| INPUTS  | OUTPUTS    |              | OUTCOMES  |                                  |                                    |
|---|------------|--------------|---|----------------------------------|------------------------------------|
|   | ACTIVITIES | PARTICIPANTS | SHORT TERM<br>PROCESS<br>INDICATORS   | MEDIUM TERM<br>IMPACT INDICATORS | LONG TERM<br>OUTCOME<br>INDICATORS |
| ASSUMPTIONS   |            |              | EXTERNAL FACTORS  |                                  |                                    |
| <p>1. FSP will be delivered in supportive settings including child and parent centres which will assist with trust and relationship development between FSP facilitators and parent participants, including crèche/child care provision.</p> <p>2. FSP covers basic positive parenting practices known to result in healthy eating. It is not a full scale intervention to deal with problematic child feeding practices (disruptive mealtime behaviour, extreme food selectivity, overt food restriction) which may have dietetic or psychological clinical implications (referral to specialised services).</p> <p>3. Satter's Division of Responsibility (sDOR) elements of parents taking leadership with feeding and giving children autonomy with eating are subjective, contextual, and potentially amorphous and thereby difficult to measure (Lohse et al., 2014). Meals are a metaphor for parent ability to plan and implement parenting skills.</p> |            |              | <p>1. Risk of insufficient participant recruitment or participants drop out to due life commitments before the end of the program.</p> <p>2. To our knowledge, there are currently no evidence based nutrition education programs available parents with this age group running in WA. However, they may be in development and compete over the 2 years of funding.</p> <p>3. The level of change that can be expected in 13 food literacy behaviours and 10 positive feeding practices in a 5-week program is not clearly defined in the literature.</p> |                                  |                                    |

## EVALUATION PLAN:

### Study design: Cross sectional surveys approved

1. Pre and post written questionnaires for parents covering positive parent feeding practices related to food literacy.
2. Questionnaire to consist of 13 items which ask parents to indicate how often they use various food literacy behaviours to support healthy eating on a 5-point Likert scale from *never* to *always* (food literacy behaviour checklist) and 10 items which ask parents to indicate how often they use various parenting techniques to encourage children on a 5-point Likert scale from *never* to *always* (self-reported feeding practices). Adapted from feeding questionnaires and food literacy questionnaires.

\*AGTHE Australian Guide to Healthy Eating.

\*\*ADG Australian Dietary Guidelines.

Table 13 is an overview of the program including learning outcomes, key messages, activities, behaviour change theories and mechanisms of action (Michie et al., 2011) and evaluation questions.

### **3.6.1 Theoretical underpinnings directing program design**

The social cognitive theory (Bandura, 1986) was applied to program design to support behaviour change in parents and aimed to motivate and increase parents' confidence including confidence in planning, selecting, managing and cooking healthy food. The behaviour change mechanisms of action (Michie et al., 2011) that were described against program activities included a focus on behaviours, knowledge, outcomes and confidence through mechanisms of action such as goal setting, behavioural practice, modelling behaviour, health consequences, self-efficacy, repetition/shaping/reinforcing, and exposure (Table 13). Underpinning the program curriculum were responsive feeding strategies based on the Satter Eating Competence Model (Satter, 2007), and the Satter Division of Responsibility in feeding framework (Satter, 1986). To support behaviour change, activities were mapped to the self-determination theory framework. Those activities were responsive feeding strategies that build relatedness, autonomy and competence in children (Di Pasquale & Rivolta, 2018).

Program activities were matched to the behaviour change techniques as described by Michie et al. (2011) which included experiential learning activities such as selecting healthy foods, hands on cooking and eating experiences, discussion and instruction to address perceived benefits and barriers to healthy eating, and goal setting activities to encourage parents' self-efficacy.



Table 13. Pilot Program Learning Outcomes, Key Messages, Activities, Behaviour Change Theories And Mechanism Of Action And Evaluation Questions

| Learning Outcomes  | Key Messages   | Activities   | Theories and Mechanisms   | Evaluation Questions  |
|--|--|--|---|---|
| <p><b>Module 1: Getting started</b><br/>This session will enable participants to:</p> <ol style="list-style-type: none"> <li>1. Categorise foods into the five core and discretionary food groups as outlined in the national dietary guidelines.</li> <li>2. Identify the links between eating a variety of foods and nutrients to maintain good health and prevent chronic disease.</li> <li>3. Choose and prepare healthy family meals and snacks from Foodbank WA's recipe booklets.</li> <li>4. Practice creating a positive food experience for their children.</li> </ol> | <ol style="list-style-type: none"> <li>1. Choose foods from all the five food groups every day.</li> <li>2. Eat more vegetables.</li> <li>3. Children learn how and what to eat from those around them.</li> <li>4. Family mealtimes help develop positive food experiences for your child.</li> </ol> | <p>Activity 1: Ice Breaker – Food that you like, dislike, now like.</p> <p>Activity 2: Program content/expectations/rules.</p> <p>Activity 3: Sorting activity: applying knowledge (AGTHE*).</p> <p>Activity 4: Explain portion plate.</p> <p>Activity 5 Setting SMART goals.</p> <p>Activity 6: Instruction on Handwashing and knife skills.</p> <p>Activity 7 Hands on cooking in pairs with recipes demonstrating portion plate principles.</p> <p>Activity 8 Shared meal with children.</p> <p>Activity 9 review key messages.</p> <p>Provide handouts and recipe booklet.</p> | <p>Associations – exposure, prompts/cues.</p> <p>Action planning – implementation of intentions/commitment.</p> <p>Health consequences of food choices (knowledge).</p> <p>Modelling behaviour practice.</p> <p>Goal setting (behaviour).</p> <p>Instruction on how to perform a behaviour/modelling of the behaviour.</p> <p>Behavioural practice.</p> <p>Self-efficacy (confidence).</p> <p>Social support from peers.</p> <p>Modelling behaviour, identification of self as role model/social comparison.</p> <p>Repetition/shaping/reinforcing knowledge.</p> | <p>Include knowledge questions.</p> <p><b>FSA:</b><br/>Plan meals to include all food groups?</p> <p>Think about healthy food choices when deciding what to eat?</p> <p>Change recipes to make them healthier?</p> <p>Cook meals or snacks at home using healthy ingredients?</p> |

| Learning Outcomes  | Key Messages   | Activities   | Theories and Mechanisms  | Evaluation Questions  |
|--|--|--|--|---|
| <p><b>Module 2: Learning to Eat</b><br/>This session will enable participants to:</p> <ol style="list-style-type: none"> <li>1. Identify the link between foods, nutrients and child growth and development.</li> <li>2. Select the types and textures of food and drinks appropriate for children aged 0–5 years at each stage of early childhood.</li> <li>3. Determine the amount of food from each food group recommended for age and gender using the ADG**.</li> <li>4. Select and prepare nutritious family meals as recommended by the ADG** and the Infant Feeding Guidelines (IFG).</li> <li>5. Choose and prepare healthy family meals and snacks from Foodbank WA’s recipe booklets.</li> <li>6. Practice creating a positive food experience for their children.</li> </ol> | <ol style="list-style-type: none"> <li>1. Encourage and support breastfeeding.</li> <li>2. Introduce solid foods at around 6 months – not before 4 months.</li> <li>3. Feed your baby iron rich foods from 6 months.</li> <li>4. Children can eat family foods from 12 months.</li> <li>5. Children need a variety of food from the five food groups every day.</li> </ol> | <p>Activity 1: Review previous week content, cooking and goals.</p> <p>Activity 2: AGTHE* review.</p> <p>Activity 2: Childhood development stages.<br/>Sort food pictures into appropriate and inappropriate for age.</p> <p>Activity 3: Serve sizes.<br/>ADG** Healthy Eating for Children brochure – how much, how many per day.</p> <p>Activity 4: Hands on cooking in pairs with recipes demonstrating portion plate principles.</p> <p>Activity 5 Shared meal with children.</p> <p>Activity 6 review key messages.</p> | <p>Incentive – material reward for attending.<br/>Goal setting (outcomes).</p> <p>Repetition/shaping/reinforcing knowledge.</p> <p>Health consequences (knowledge).<br/>Identification of self as a role model.<br/>Self-belief – verbal persuasion to boost self-efficacy.<br/>Restructuring physical environment.</p> <p>Health consequences (knowledge).</p> <p>Behavioural practice.<br/>Self-efficacy (confidence).<br/>Social support from peers.</p> <p>Modelling behaviour, identification of self as role model/social comparison.</p> <p>Repetition/shaping/reinforcing knowledge.</p> | <p>I model healthy eating for my child by eating healthy food myself.</p> <p>I discuss with my child why it’s important to eat healthy food.</p> <p>I hand feed my child to get her to eat.</p> <p>I let my child feed him/herself.</p> <p>I have to trick, distract, play with or praise my child to get him/her to finish his/her food.</p> |

| Learning Outcomes   | Key Messages   | Activities  | Theories and Mechanisms   | Evaluation Questions  |
|---|--|---|---|---|
|   |  | Provide handouts and recipe booklet.  | Incentive – material reward for attending.  |   |
| <p><b>Module 3: Family mealtimes</b><br/>This session will enable participants to:</p> <ol style="list-style-type: none"> <li>1. Apply the sDOR as recommended by the Satter feeding framework.</li> <li>2. Identify strategies to create positive and lower-stress mealtimes for the family.</li> <li>3. Recognise the importance of role modelling in establishing healthy eating behaviours in young children.</li> <li>4. Empower parents to see themselves as teachers' not just feeders to develop positive eating behaviours in their children.</li> <li>5. Choose and prepare healthy family meals and snacks from Foodbank WA's recipe booklets.</li> <li>6. Practice creating a positive food experience for their children.</li> </ol> | <ol style="list-style-type: none"> <li>1. Parents/carers are responsible for <i>feeding</i> and children are responsible for <i>eating</i>.</li> <li>2. Children will learn to eat family foods with time – continue to offer children a wide variety of food from the five food groups on a regular schedule.</li> <li>3. Create a positive environment at mealtimes to develop competent eating behaviours in children.</li> </ol> | <p>Review previous week. content, cooking and goals.</p> <p>Activity 1: Family mealtimes. Discuss current mealtimes/emotions/environment within parents' homes.</p> <p>Activity 2: Division of responsibility</p> <p>Activity 2a: Scenario Images – Helpful Vs Less Helpful?</p> <p>Activity 2b: Mealtime troubleshooting (optional).</p> <p>Activity 3: Hands on cooking in pairs with recipes demonstrating portion plate principles.</p> | <p>Goal setting (outcomes).</p> <p>Identification of own behaviour and comparison (social) to others.</p> <p>Shaping knowledge – instruction on how to perform a behaviour.<br/>Identification of self as a role model.<br/>Consequences – self assessment of affective consequences.</p> <p>Comparison of outcomes – comparative imagining of future outcomes.<br/>Reinforcing knowledge/practice.<br/>Restructuring physical environment.<br/>Self-belief – verbal persuasion to boost self-efficacy.</p> <p>Behavioural practice.<br/>Self-efficacy (confidence).<br/>Social support from peers.</p> | <p>Do you let your child eat whatever he/she wants?</p> <p>I allow my child to choose which foods to have for meals.</p> <p>If the child does not like what is served, do you make something else?</p> <p>You prepared a special meal for the child different from the family meal.</p> <p>I allow my child to watch tv during meals.</p> <p>If I did not control my child's eating he/she would eat much less than h/she should.</p> |

| Learning Outcomes  | Key Messages   | Activities                                       | Theories and Mechanisms  | Evaluation Questions  |
|--|--|--|--|---|
| <p><b>Module 4: Food on the Move</b><br/>This session will enable participants to:</p> <ol style="list-style-type: none"> <li>1. Demonstrate how to read and interpret food labels to compare products based on health and price.</li> <li>2. Explain the cost and nutritional difference between a healthy and unhealthy lunch or snack.</li> <li>3. Identify methods to improve the food safety and freshness of a packed lunch or snack.</li> <li>4. Choose and prepare healthy family meals and snacks from Foodbank WA's recipe booklets.</li> <li>5. Practice creating a positive food experience for their children.</li> </ol> | <ol style="list-style-type: none"> <li>1. Healthy meals or snacks on the move includes a variety of foods from the five food groups and water.</li> <li>2. Use the wallet card to read food labels to make the best choice.</li> <li>3. Prepare and store foods correctly so it is safe to eat when transported outside the home.</li> </ol> | Activity 4 Shared meal with children.            | Modelling behaviour, identification of self as role model/social comparison  | <p>Questions relating to food literacy – (FSA questions).</p> <p>Choose packaged/store bought products when eating outside the home?</p> <p>Use a nutrition information panel to make food choices?</p> |
|  |  | Activity 5 review key messages.                  | Repetition/shaping/reinforcing knowledge   |   |
|  |  | Provide handouts and recipe booklet.             | Incentive – material reward for attending.   |   |
|  |  | Review previous week content, cooking and goals. | Goal setting (outcomes).   |   |
|  |  | Activity 1: Reading labels.                      | Health consequences (knowledge).<br>Behavioural practice.<br>Self-efficacy (confidence).<br>Social support from peers. |   |
|  |  | Activity 2: Lunchbox comparison.                 | Health consequences of food choices (knowledge).   |   |
| Activity 3: Food Safety. Keeping food safe. Best before versus use by dates.   | Health consequences of food choices (knowledge).   |  |  |   |
| Activity 3: Hands on cooking in pairs with recipes demonstrating portion plate principles.   | Behavioural practice<br>Self-efficacy (confidence).<br>Social support from peers.  |  |  |   |
| Activity 4 Shared meal with children.  | Modelling behaviour, identification of self as role model/social comparison.   |  |  |   |

| Learning Outcomes  | Key Messages   | Activities  | Theories and Mechanisms   | Evaluation Questions  |
|--|--|---|---|---|
|  |  | Activity 5 review key messages.   | Repetition/shaping/reinforcing knowledge.   |   |
|  |  | Provide handouts and recipe booklet.  | Incentive – material reward for attending.  |   |
| <b>Module 5: Feeding the Family</b><br>This session will enable participants to: <ol style="list-style-type: none"> <li>1. Recognise foods from the five food groups are cheaper and healthier than convenience/discretionary foods.</li> <li>2. Plan family meals that are quick, nutritious and low cost.</li> <li>3. Use time and money saving strategies for food shopping.</li> <li>4. Develop a meal plan to effectively plan and manage a household menu &amp; budget.</li> <li>5. Choose and prepare a healthy family meal from Foodbank WA's recipe booklets.</li> <li>6. Practice creating a positive food experience for their children.</li> </ol> | <ol style="list-style-type: none"> <li>1. Choose foods from all the five food groups every day to save money.</li> <li>2. Meal planning can save you time and money.</li> <li>3. Cooking at home is healthier, cheaper and fast to prepare.</li> </ol> | Review previous week content, cooking and goals.<br><br>Activity 1: \$30 shopping trolley comparing the cost of healthy and unhealthy/convenience foods.<br><br>Activity 2: Money saving tips. Discuss tips to save money and time with food shopping.<br><br>Activity 3: Meal Planning. Discuss benefits and steps of meal planning. Participants practice meal planning.<br><br>Activity 4: Hands on cooking in pairs with recipes demonstrating portion plate principles.<br><br>Activity 5 Shared meal with children. | Goal setting (outcomes)<br><br>Health consequences (knowledge).<br>Behavioural practice.<br>Social support (practical hands on activity).<br>Self-efficacy (confidence).<br><br>Social support from peers.<br>Self-efficacy (confidence)<br>Self-belief – focus on past success.<br><br>Environmental consequences.<br>Self-belief – mental rehearsal of successful performance.<br>Comparison on outcomes.<br><br>Behavioural practice<br>Self-efficacy (confidence).<br>Social support from peers.<br><br>Self-efficacy (confidence).<br>Social support from peers. | Questions relating to food literacy – (FSA questions).<br><br>FSA<br>Plan meals ahead of time?<br><br>Make a list before you go shopping?<br><br>Compare unit prices to select low-cost healthy foods?<br><br>Change recipes to make them healthier?<br><br>Confidence questions:<br>How often have you felt confident with the following |

| Learning Outcomes | Key Messages | Activities  | Theories and Mechanisms   | Evaluation Questions   |
|-------------------|--------------|---|---|--|
|                   |              | Activity 6 review key messages<br>Provide handouts and recipe booklet.  | Modelling behaviour, identification of self as role model/social comparison.  | actions in the last month?   |
|                   |              | Graduation.<br>Review expectations.<br>Group share highlights/successes.<br>Set long term goal.<br>Congratulate participants – investing commitment to self-improvement/learning).<br>Present certificates and portion plate.<br>Photo collage. | Repetition/shaping/reinforcing knowledge.<br>Incentive – material reward for attending.<br><br>Review of outcome/behaviour goal.<br>Self-belief – focus on past success.<br>Action planning (including implementation intentions – long term).<br>Self-affirmation – reinforcement of taking positive action to improve.<br>Incentive – material reward for attending.<br>Prompts cues/reinforcing behaviours/exposure. | Managing your money to buy healthy food?<br><br>Selecting low-cost healthy foods?<br><br>Cooking a variety of healthy meals?<br><br>Making changes in your food choices? |

\* AGTHE Australian Guide to Healthy Eating.

\*\* ADG Australian Dietary Guidelines.

### 3.7 Stage 4 Pilot Program Implementation

Five program pilot programs were implemented with 47 parents (female  $n = 42$ , male  $n = 5$ ) within five community organisations in the Perth metropolitan area between July and December 2019. Informal feedback recorded at the end of each session for two pilot programs (10 sessions) included general observations, what worked well, changes required, and a list of participant questions and comments. The feedback (see Table 14) was grouped into six program component themes: (1) *resources*, (2) *messaging*, (3) *activities*, (4) *facilitation*, (5) *food, recipes and cooking*, and (5) *logistics*. A full description of feedback is recorded in Appendix K. The feedback information was used to develop the final program curriculum (Figure 5).

Table 14. Summary Of Pilot Program Feedback

| Program component           | Changes required   |
|-----------------------------|--|
| <b>Resources</b>            | <ul style="list-style-type: none"> <li>• Program workbooks and certificates were well received by participants, include group photo at the end of the program and email to participants at completion</li> <li>• Ensure previous weeks' resources are available for participants that missed previous week</li> <li>• Display AGTHE* poster for participants to enable participants to refer to and support their learning</li> <li>• Bring resources for children to keep them occupied if they come into the session rather than stay in the creche</li> <li>• Consider developing a child size placemat as incentive for final week to reinforce healthy eating messages</li> <li>• Laminate program resources including meal planners &amp; shopping lists so they can be reused</li> <li>• Provide small tongs, plates and additional soft spoons and forks for young children</li> <li>• Week 2 childhood nutrition development stages – change age range in bubs groups from 6 months to 6–7 months to depict moving from silky smooth texture to next stage quickly</li> </ul> |
| <b>Reinforcing messages</b> | <ul style="list-style-type: none"> <li>• Support participants during eating with sDOR** principles (e.g., reinforce children serve themselves, parent provides, children decides)</li> <li>• Discuss with participants during eating time child's achievements, (e.g., capabilities and autonomy of serving themselves)</li> <li>• When starting cooking emphasise the importance of parents teaching their child to cook at home</li> <li>• Reinforce setting weekly goals and revisit weekly</li> <li>• Develop display of <i>joyful mealtimes tips</i> to remind participants to choose one new behaviour to trial weekly during eating together</li> </ul>   |
| <b>Activities</b>           | <ul style="list-style-type: none"> <li>• Set up cost per kilo display using toddler snacks to reinforce learnings</li> <li>• Add more milk pictures depicting different types of milk</li> <li>• Use some of the participant <i>real life</i> questions in the Week 3 scenarios activity</li> </ul>  |

| Program component                | Changes required  |
|----------------------------------|---|
| <b>Facilitation</b>              | <ul style="list-style-type: none"> <li>• Reinforce preference for participants children to be in the creche during the education component to reduce distraction for them</li> <li>• Consider CALD*** participants may not be familiar with some foods (e.g., cream cheese, UHT custard)</li> <li>• Reassure participants judgement free and safe environment, reassure we are all doing our best</li> <li>• Assistance may be required for some participants to write goals</li> <li>• Discuss with participants prior to eating why all food is to be served at the same time, including <i>desert</i> style dishes – part of sDOR** strategies</li> </ul>                              |
| <b>Food, recipes and cooking</b> | <ul style="list-style-type: none"> <li>• Display group rules each week to reinforce</li> <li>• Show examples of quick and easy snack ideas for lunch boxes that can be pre-made and frozen</li> <li>• Use recipes in sessions that relate to weekly topics (e.g., substituting frozen or canned food)</li> <li>• Ask participants to bring a container to take any leftover food home</li> </ul>  |
| <b>Logistics and timing</b>      | <ul style="list-style-type: none"> <li>• Reduce length of saving money discussion and provide hand out to support learning</li> <li>• Discuss goals during time spent eating which may prompt participants to set goal based on that week's content</li> <li>• Provide low tables for serving food so children can easy access it</li> <li>• Hand out resources when participants arrive, reducing time during session</li> <li>• Week 3 family mealtimes education session is a long session, choose recipes that are fast to prepare</li> <li>• Close off access to playroom when eating to reduce distraction for children</li> <li>• Remind participants to arrive on time</li> </ul> |

\* AGTHE Australian Guide to Healthy Eating.

\*\* sDOR Satter Division of Responsibility of feeding framework.

\*\*\* CALD Culturally and Linguistically Diverse.



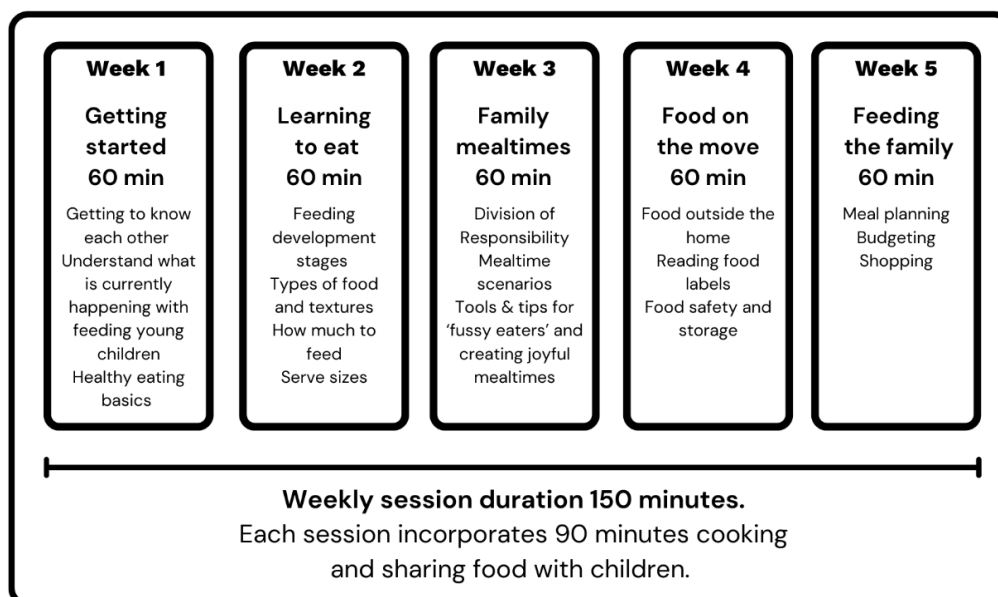
### 3.7.1 Changes to program curriculum

Following the implementation of the pilot programs, the program design was modified to extend the length of time of the program workshops from 2 hours to 2.5 hours, in order to have more time for program content and activities.

Minor changes made to the curriculum included moving the order and reducing the length of some activities to fit better within the time frame, selecting weekly recipes to cook that related to session topics, and updating activity resources such as additional pictures of food to represent cultural foods. Facilitator notes were updated to reinforce the weekly key messages at the end of sessions, remind participants about completing their short term and long-term goals, place greater emphasis on reminding parents to arrive on time, and to bring their workbooks back each week. Other changes were more operational such as adding additional equipment to assist with cooking, and providing child size utensils (e.g., small tongs, forks and spoons).

The final lesson plans were completed for program implementation in 2020 (Appendix L). Figure 6 provides an overview of the 5-week program that was implemented and evaluated.

Figure 6. Food Sensations For Parents Program Curriculum Overview



## **3.8 Phase 4 Program Implementation and Evaluation**

This chapter presents the program evaluation descriptive frequencies in section 3.8.1 and the statistical analysis in the form of a manuscript, Effectiveness of a food literacy and parenting feeding practices program for parents of 0–5-year olds in Western Australia (under review with co-authors Jancey, J., Scott, J., S., Dhaliwal, & Begley, A.) is presented in section 3.9.

Research Objectives:

Determine if the FSP program:

1. increased parent's food literacy behaviours
2. increased parent's parenting feeding practices to support healthy eating (Publication 2)
3. is suitable for a range of parents living in disadvantaged areas.

### 3.8.1 Program evaluation descriptive frequencies results

### 3.8.2 Food literacy behaviours and confidence

Program participants were asked to report their perceived frequency of food literacy behaviours and confidence for the preceding month in relation to the planning and management, shopping, cooking and preparation, and eating of food. At the end of the program (5 weeks later), participants again reported the frequency of behaviours to measure change in frequency. Responses ranged from *never* coded as 1, *rarely* (2), *sometimes* (3), *most of the time* (4) and *always* (5). These response codes were then used to create a mean score.

Table 15 shows the raw frequencies for food literacy behaviours and confidence from the pre (start) and post (end) responses for participants ( $n = 302$ ). Participants reported food literacy behaviours that were high at the start of the program. Over 50% of participants reported high food literacy behaviours that they *most of the time* or *always* did that behaviour prior to commencing the program for 5 of the 13 food literacy behaviours and confidence questions. The highest food literacy behaviours were: *plan to keep food safe when transporting outside of the home* (80.7%), *think about healthy choices when deciding what to eat* (71.8%), *make a list before going shopping* (69.0%). The highest reported food literacy confidence behaviours were: *feel confident about cooking a variety of healthy meals* (56.8%) and *feel confident about managing money to buy healthy food* (54.3%). The lowest reported food literacy behaviours was *use a nutrition information panel to make food choices* (16.8%). The lowest reported food literacy confidence was *feel confident about making changes in food choices* (33.0%).

Table 15. Distribution Of Responses To Food Literacy Behaviours (2020–2021) (N = 302)

|  | Type  | n   | Missing responses | Never % | Rarely % | Sometimes % | Most of the time % | Always % |
|--|-------|-----|-------------------|---------|----------|-------------|--------------------|----------|
| <b>Food literacy behaviours</b>  |       |     |                   |         |          |             |                    |          |
| Plan meals ahead of time?  | Start | 285 | 17                | 2.1     | 14.4     | 38.6        | 35.4               | 9.5      |
|  | End   | 236 | 66                | 0.4     | 5.1      | 35.2        | 49.6               | 9.7      |
| Make a list before you go shopping?  | Start | 287 | 15                | 3.5     | 5.2      | 22.3        | 39.4               | 29.6     |
|  | End   | 238 | 64                | 0.8     | 4.6      | 16.8        | 40.8               | 37.0     |
| Plan meals to include all foods groups?                                    | Start | 284 | 18                | 6.3     | 14.8     | 37.3        | 36.3               | 5.3      |
|  | End   | 64  | 5.0               | -       | 5.0      | 16.8        | 40.8               | 37.0     |
| Plan to keep food safe when transporting outside of the home?              | Start | 285 | 17                | 2.1     | 6.3      | 10.9        | 38.9               | 41.8     |
|  | End   | 236 | 66                | 0.8     | 2.5      | 10.2        | 34.3               | 52.1     |
| Use NIP to make food choices?  | Start | 285 | 17                | 21.8    | 27.7     | 33.7        | 11.2               | 5.6      |
|  | End   | 238 | 64                | 2.5     | 10.1     | 37.8        | 36.1               | 13.4     |
| Compare prices to select low-cost healthy foods?                           | Start | 286 | 16                | 6.6     | 10.5     | 32.9        | 36.0               | 14.0     |
|  | End   | 237 | 65                | 2.1     | 5.5      | 18.6        | 45.1               | 28.7     |
| Think about health food choices when deciding what to eat?                 | Start | 287 | -                 | 15      | 3.5      | 24.7        | 58.9               | 12.9     |
|  | End   | 238 | 64                | -       | 0.8      | 13.4        | 58.0               | 27.7     |
| Change recipes to make them healthier?                                     | Start | 287 | 15                | 3.5     | 12.2     | 42.5        | 32.8               | 9.1      |
|  | End   | 238 | 64                | 0.4     | 4.6      | 36.1        | 41.6               | 17.2     |
| <b>Food literacy confidence</b>  |       |     |                   |         |          |             |                    |          |
| Feel confident about managing money to buy healthy food?                   | Start | 285 | 17                | 2.5     | 11.6     | 31.6        | 36.1               | 18.2     |
|  | End   | 237 | 65                | 0.4     | 2.5      | 24.9        | 49.8               | 22.4     |
| Feel confident about selecting low-cost healthy foods?                     | Start | 285 | 17                | 2.5     | 13.0     | 38.2        | 35.4               | 10.9     |
|  | End   | 237 | 65                | 0.8     | 2.5      | 29.5        | 48.9               | 18.1     |
| Feel confident about cooking a variety of healthy meals?                   | Start | 285 | 17                | 1.8     | 5.6      | 35.8        | 47.7               | 9.1      |
|  | End   | 237 | 65                | -       | 1.7      | 22.8        | 62.0               | 13.5     |
| Feel confident about making changes in food choices?                       | Start | 285 | 17                | 1.8     | 11.6     | 53.7        | 27.4               | 5.6      |
|  | End   | 237 | 65                | -       | 2.1      | 32.9        | 51.9               | 13.1     |
| Feel confident keeping foods safe that you are taking outside of the home? | Start | 283 | -                 | 19      | 2.8      | 9.5         | 36.4               | 51.2     |
|  | End   | 237 | 65                | -       | 0.8      | 7.6         | 33.8               | 57.8     |

### 3.8.3 Parenting feeding practices

Table 16 reports the raw frequencies data for parenting feeding practices from pre (start) and post (end) responses for participants ( $n = 302$ ). For three of the 10 parent feeding practices, over 60% of participants reported high

positive parent feeding practices: *most of the time* or *always* doing this practice or *never* or *rarely* for those reverse coded, prior to commencing the program. The highest were *Eat a meal with my child* (70.3%), *Model healthy eating for my child* (64.0%) and *Let my child eat whatever they want* (60.1% *never* or *rarely*).

**Table 16. Distribution of Responses to Parent Feeding Practices Questions (n = 302)**

|   | Type         | N          | Missing responses | N/A# %      | Never %     | Rarely %    | Sometimes % | Most of the time % | Always %    |
|---|--------------|------------|-------------------|-------------|-------------|-------------|-------------|--------------------|-------------|
| Allow my child to choose the food they want to eat from food already prepared?      | Start        | 280        | 22                | 14.3        | 7.1         | 13.2        | 28.2        | 29.6               | 7.5         |
|   | End          | 234        | 68                | 14.1        | 5.6         | 7.3         | 21.8        | 35.0               | 16.2        |
| Prepare a different meal for my child from the family meal?*                        | <b>Start</b> | <b>284</b> | <b>18</b>         | <b>11.6</b> | <b>10.2</b> | <b>18.3</b> | <b>28.2</b> | <b>22.5</b>        | <b>9.2</b>  |
|   | <b>End</b>   | <b>236</b> | <b>66</b>         | <b>11.9</b> | <b>16.5</b> | <b>20.3</b> | <b>35.6</b> | <b>11.9</b>        | <b>3.8</b>  |
| Serve something else for a meal or snack if my child does not like what is served?* | Start        | 283        | 19                | 12.4        | 12.7        | 17.3        | 34.6        | 17.7               | 5.3         |
|   | End          | 237        | 65                | 12.7        | 18.1        | 27.8        | 30.4        | 8.4                | 2.5         |
| Model healthy eating for my child by eating healthy food myself?                    | <b>Start</b> | <b>281</b> | <b>21</b>         | <b>11.4</b> | <b>1.8</b>  | <b>3.9</b>  | <b>18.9</b> | <b>49.8</b>        | <b>14.2</b> |
|   | <b>End</b>   | <b>237</b> | <b>65</b>         | <b>10.5</b> | <b>0.8</b>  | <b>0.4</b>  | <b>13.5</b> | <b>45.6</b>        | <b>29.1</b> |
| Eat a meal with my child?   | Start        | 283        | 19                | 11.7        | 1.1         | 5.3         | 11.7        | 39.9               | 30.4        |
|   | End          | 237        | 65                | 10.1        | 0.8         | 2.5         | 6.3         | 38.8               | 41.4        |
| Hand feed my child?*  | <b>Start</b> | <b>282</b> | <b>20</b>         | <b>17.4</b> | <b>12.1</b> | <b>19.9</b> | <b>33.0</b> | <b>11.7</b>        | <b>6.0</b>  |
|   | <b>End</b>   | <b>237</b> | <b>65</b>         | <b>16.9</b> | <b>17.3</b> | <b>24.5</b> | <b>31.2</b> | <b>8.0</b>         | <b>2.1</b>  |
| Let my child serve her/himself?   | Start        | 281        | 21                | 13.9        | 11.7        | 7.1         | 33.1        | 21.7               | 12.5        |
|   | End          | 235        | 67                | 14.9        | 5.5         | 6.8         | 31.1        | 30.2               | 11.5        |
| Distract, praise, or play with my child to get them to finish their food?*          | <b>Start</b> | <b>282</b> | <b>20</b>         | <b>13.1</b> | <b>10.3</b> | <b>15.2</b> | <b>36.9</b> | <b>16.0</b>        | <b>8.5</b>  |
|   | <b>End</b>   | <b>237</b> | <b>65</b>         | <b>12.2</b> | <b>23.6</b> | <b>25.7</b> | <b>22.8</b> | <b>11.0</b>        | <b>4.6</b>  |
| Let my child eat whenever they want?*   | Start        | 280        | 22                | 13.6        | 12.9        | 20.0        | 30.4        | 18.6               | 4.6         |
|   | End          | 237        | 65                | 13.5        | 14.3        | 36.3        | 26.6        | 8.0                | 1.3         |
| Discuss with my child why it is important to eat healthy foods?                     | <b>Start</b> | <b>281</b> | <b>21</b>         | <b>15.7</b> | <b>13.5</b> | <b>7.5</b>  | <b>26.3</b> | <b>23.1</b>        | <b>13.9</b> |
|   | <b>End</b>   | <b>237</b> | <b>65</b>         | <b>16.0</b> | <b>7.6</b>  | <b>5.5</b>  | <b>24.9</b> | <b>27.4</b>        | <b>18.6</b> |

\*Reverse coded 1 never to 5 always

#Not applicable: that is child under 6 months old

### 3.8.4 Process evaluation

Participants who completed the post (end) survey were able to list up to three open-ended responses to what they liked most about the program (Table 17). The highest responses were recipes (13.9%), education, information and learning (generally) (12.3%), and participating in the cooking and eating activities (11.6%).

*Table 17. Open-Ended Comments About What They Liked Most About the Food Sensations For Parents Program*

| Responses*   | Total program<br>delivery<br><i>n</i> = 423<br><i>n</i> (%) |
|--|---|
| Recipes  | 59 (13.9)   |
| Education, information, and learning (generally)   | 52 (12.3)   |
| Participating in the cooking and eating activities   | 49 (11.6)   |
| Learning about healthy eating nutrition  | 44 (10.4)   |
| Group interactions, sharing experiences and fun program  | 30 (7.1)  |
| Great program, useful, liked everything  | 28 (6.6)  |
| Great facilitators   | 27 (6.4)  |
| Program activities and structure (general)   | 26 (6.1)  |
| Learning new cooking skills/ increasing cooking confidence   | 19 (4.5)  |
| Budgeting and meal planning topics   | 17 (4.0)  |
| Other (mindfulness, able to have child present, location/venue/facilities, program accessibility, meal planning, food safety etc.) | 13 (3.1)  |
| Resources (specific and general)   | 12 (2.8)  |
| Reading food labels  | 11 (2.6)  |
| Learning what/how to feed toddlers   | 10 (2.4)  |
| Learning about the division of responsibility  | 8 (1.9)   |
| Having the program online  | 7 (1.7)   |
| Reinforced what I already knew   | 4 (0.9)   |
| Crèche available   | 3 (0.7)   |
| Kids lunchbox planning   | 2 (0.5)   |
| Learning about family mealtimes  | 2 (0.5)   |

\* Participants could list up to three options

### **3.9 Statistical analysis results paper**

Publication 2: Effectiveness of a food literacy and parenting feeding practices program for parents of 0–5-year olds in Western Australia. (Under review with co-authors Jancey, J., Scott, J., S., Dhaliwal, & Begley, A.)

Program Objectives:

1. Improve parents' food literacy behaviours and confidence.
2. Increase application of positive feeding parenting practices to support healthy eating.
3. Increase parents' vegetable consumption.

**Title- Effectiveness of a food literacy and positive feeding practices program for parents of 0 to 5 years olds in Western Australia.**

**Abstract**

**Issue addressed:** Lifelong eating behaviours are established in childhood. Improving parents' food literacy skills is essential for providing healthy diets for their children and creating positive feeding environments. This paper describes the development and evaluation of an innovative program that combines food literacy with positive parent feeding practices, targeting parents in disadvantaged areas of Western Australia.

**Methods:** The *Food Sensations*<sup>®</sup> for Parents (FSP) five week program was delivered to participants from community-based parenting organisations during 2020 and 2021. Formative research and a pre-post evaluation design were adopted.

**Results:** Pre- and post-evaluation data were collected from 224 participants (96% female). There was a statistically significant improvement in the mean score for 13 food literacy behaviours, 10 positive parenting feeding practices and a mean increase in parents' daily vegetable intake of 1/3 serve. Participants reported significantly greater net improvements in food literacy behaviours than feeding practices, the largest being the *Use a nutrition information panel to make food choices* (33.1%). Multivariate logistic regression analysis identified few variables affecting outcomes with English as their first language, being older than 35, and from a higher Socio-Economic Indexes for Areas (SEIFA) resulted in a higher likelihood of positive changes in behaviours and practices.

**Conclusions:** The findings indicate that the program is effective in improving the frequency of use of food literacy behaviours, positive parenting feeding practices and increasing vegetable consumption.

**So What?:** Analysing improvements in food literacy behaviours and feeding practices provides clarity on what change can be expected with a five week parent program.



## 1. INTRODUCTION

Parents play a fundamental role in establishing healthy eating behaviours and preferences for nutritious food. This occurs because of the complex interaction between parenting styles and the early feeding environment.<sup>1</sup> The family environment supports the formation and maintenance of eating behaviours that persist into adulthood. Therefore, supporting families in preventing and minimising feeding challenges is a crucial step in ensuring that children thrive. A child's attitudes, beliefs and behaviours around food are shaped by the unique feeding practices a parent employs, which include the when, what and how of child feeding.<sup>2</sup> Strategies, such as repeated exposure to foods and responsive feeding, are evidence-based techniques that support health and wellbeing at the parent, child and family levels.<sup>3</sup> The practice of responsive feeding creates a supportive environment that values a child's ability to self-regulate eating and develop autonomy. It also provides positive parenting responses that are appropriate to a child's development and competence, including their level of maturation and developmental stage.<sup>4</sup> The practice of attending to internal cues of hunger and fullness rather than parental pressure to eat or food restrictions, allows children to be intrinsically motivated to feed themselves and aids them in learning to self-regulate their eating.<sup>4</sup>

Research shows that parents are motivated to provide nutritious foods; however, feeding children under 5 years of age presents many challenges, including a lack of time, multiple and conflicting sources of information, children's own food preferences, cost and food insecurity.<sup>5,6</sup> Children who are perceived as fussy eaters create anxiety, frustration and stress for parents, which affects parents' feeding decisions.<sup>3,5</sup> The term 'positive parenting feeding practices' will be used throughout this paper to describe the combined evidence-based feeding strategies encompassing responsive feeding practices.

In Western Australia (WA), the Sustainable Health Review<sup>7</sup> and Health Promotion Strategic Framework<sup>8</sup> advocate for the allocation of resources to children's early years to benefit both the community and children in the long run. These WA government policy initiatives recognise the importance of the first 1,000 days of life as a critical period for the future health, growth and neurodevelopment of children<sup>9</sup>, and the need for early intervention. The Sustainable Health Review<sup>7</sup> recommends providing stronger support to local communities, including non-profit organisations, to address key public health issues, such as nutrition.

Early years nutrition interventions recommend focusing on priority groups, such as families living in areas of social disadvantage, as socio-economic status is a contributing determinant in health inequalities in children.<sup>10</sup> In WA, the overall poverty rate among children under 5 years is 20.9%, higher

## Effectiveness of a parent food literacy and feeding practices program

than the national average.<sup>11</sup> This equates to 33,000 young children living in poverty (below 50% of median household income).<sup>11</sup> Aboriginal and children from a non-English-speaking background experience even higher rates of developmental vulnerability.<sup>11</sup> Children with lower socio-economic status are also less likely to meet nutrition recommendations than those living with less disadvantage.<sup>11, 12</sup> Children from priority groups have dietary deficiencies that are noticeable as early as nine months of age and increase with time.<sup>13</sup> The differences in the over consumption of discretionary foods and low vegetable intakes among these groups are particularly concerning.<sup>12</sup>

Children's eating habits can be significantly influenced by programs that aim to improve parents' abilities to promote and maintain their children's long-term healthy behaviours.<sup>1</sup> Successful interventions include strategies that empower parents, provide feeding-related advice and offer social support. In Australia, there have been successful large-scale randomised controlled trials of parent nutrition interventions targeting childhood obesity. These interventions focused on enhancing early feeding practices as children transition from breast milk and formula to family diet,<sup>14, 15</sup> parents' nutrition awareness<sup>15</sup> and parental efficacy in fostering positive parenting feeding practices.<sup>14, 15</sup> However, they did not focus on supporting practical food literacy skills and behaviours as their objectives related to increasing knowledge and awareness of positive parenting feeding practices.

Parents can promote positive feeding habits by setting an example of healthy food selection, preparation and dietary behaviours.<sup>6</sup> Therefore, improving parents' own food literacy—the combination of knowledge, skills and behaviours used to plan, manage, select, prepare and eat a healthy diet<sup>16</sup>—is fundamental to enhancing their own dietary intake and nutritional outcomes for their children. There have been several international interventions (USA, Germany and New Zealand) targeting parents of 0–5 years that combine food literacy and positive parenting feeding practices.<sup>17–22</sup> These have reported positive impacts on children's dietary intakes<sup>17</sup> and improvements in parenting feeding practices.<sup>19</sup> The duration of these interventions ranged from six weeks<sup>21</sup> to 18 months.<sup>18</sup> Improvements included a decrease in controlling behaviours such as pressuring children to eat or using food as a reward.<sup>18, 19</sup> Interventions that combine food literacy and feeding practices have the potential to build parents' skills and self-efficacy and support longer term behaviour change; however, there have not been any reported interventions in Australia that combine both capabilities.

Since the mid-1990s, Foodbank WA has developed and implemented food literacy programs tailored to specific population groups, particularly low-to middle-income populations,<sup>23</sup> which have led to improved dietary behaviours.<sup>24</sup> In 2019, Foodbank identified a gap in nutrition interventions that contextualised food literacy for parents of 0–5-year-old children living in disadvantaged areas across WA. Foodbank offered one-time workshops to parents of 0–5-year-old children living in the East

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Pilbara region of WA. These workshops recognised the specific needs of these parents and considered the areas uniqueness, which included a large Aboriginal population, low breastfeeding initiation rates, and high levels of disadvantage, teenage births and children with developmental challenges.<sup>25-27</sup> Effective design elements of the existing East Pilbara nutrition workshops<sup>27</sup> and adult food literacy program<sup>24</sup> provided the foundation for developing the *Food Sensations*<sup>®</sup> Parents (FSP) program, which is, to our knowledge, the first reported in Australia to integrate concepts of food literacy, including a focus on cooking skills, and positive parenting feeding practices to improve health outcomes for families.

Australian children aged 0–5 years do not meet the current dietary recommendations. Most children do not consume the recommended daily servings of vegetables, grain foods and meat and meat alternatives. Approximately one-third of children’s energy intake is from high-energy, nutrient-poor discretionary foods.<sup>28</sup> The FSP program aims to improve the dietary intake of parents of children aged 0–5 years in the disadvantaged areas of WA. This paper reports on the development and evaluation of the program implementation. The evaluation determined if the program (1) increased parents’ food literacy behaviours and confidence, (2) increased the application of positive parenting feeding practices to support healthy eating and (3) increased parents’ vegetable consumption.

## 2. METHODS

### 2.1 Program design

The program’s development was shaped by formative research conducted to assess the feeding experiences, challenges and obstacles faced by the parents’ in the target group in providing their children with a healthy diet. Formative research included eight focus groups with parents<sup>5</sup> (n=67); semi-structured interviews with stakeholders (n=14) from parenting organisations in WA; and consultation via a stakeholder forum (n=31) with professionals in child health, nutrition, health promotion and community organisations that work with families.

Additionally, the program content was adapted from the Foodbank WA’s *Food Sensations* for Adults program<sup>24</sup> and the East Pilbara nutrition workshops<sup>27</sup> curriculum was guided by the Australian Infant Feeding Guidelines<sup>29</sup> and Australian Dietary Guidelines.<sup>30</sup> The food literacy skills that were included in the curriculum were the four domains that Vidgen and Gallegos<sup>16</sup> characterised as supporting a healthy diet. Also underpinning the program curriculum were responsive feeding strategies based on the Satter Eating Competence Model<sup>31</sup> and Division of Responsibility Framework.<sup>32</sup> Theoretical application included aligning program curricula with the Self Determination Theory Framework<sup>33</sup> to

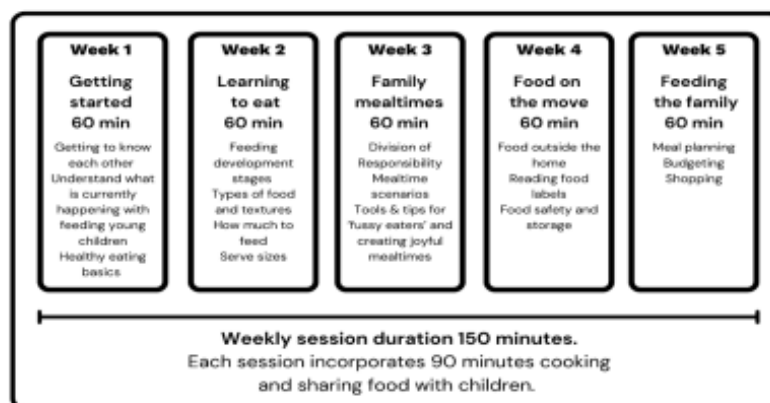
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include responsive feeding strategies that foster relatedness, autonomy and children's competence. The Social Cognitive Theory<sup>34</sup> guided the program strategies, which aimed to motivate and increase parents' confidence. The strategies included experiential learning activities such as selecting healthy foods, hands-on cooking and eating experiences, discussions and lessons to address perceived benefits and barriers to healthy eating, and goal-setting activities to encourage parents' self-efficacy.<sup>35</sup>

A pilot program was created by combining the findings from formative research with effective elements of the existing Foodbank initiatives.<sup>36</sup> Five pilot FSP programs were launched in 2019, which provided opportunities to refine program content, determine acceptability and review the scheduling and logistics of delivering the program within community organisations. Following the piloting, minor curriculum revisions were made, and the program session time was extended from two hours to 2.5 hours to provide more time for program activities.

The final program consisted of weekly cooking lessons and five workshops or sessions over five weeks, each with a specific focus. The topics included, basic nutrition principles for the whole family, child feeding development stages, strategies to overcome fussy eating using the Division of Responsibility Framework,<sup>31</sup> food safety, label reading, meal planning, food shopping and budgeting. The FSP program content is summarised in Figure 1. Each workshop included 60 minutes of hands-on learning activities, 60 minutes of cooking and 30 minutes of eating with the participants to taste new foods. After each workshop, children were encouraged to taste prepared foods in a social environment and participants could use new feeding techniques with their children.

**FIGURE 1 Food Sensations for Parents (FSP) program framework and curriculum overview**



## Effectiveness of a parent food literacy and feeding practices program

Program resources included a range of pictorial recipe booklets, a comprehensive program workbook which incorporated program content using infographic style imagery, a reusable shopping bag and a child's size healthy eating plate with cartoon-style depictions of five food groups. Each week, participants were encouraged to set short-term goals (within one to five weeks) and, towards the end of the program, long-term dietary goals (within six months) and record them in the workbook provided.

### **2.2 Delivery method**

From February 2020 to November 2021, community-based parenting organisations hosted program workshops. The workshops were conducted weekly with 5–12 participants and offered childcare. Workshops lasted 2.5 hours and were facilitated by qualified public health nutritionists. Due to COVID-19 lockdowns, the in-person program was suspended, and an online version was created. The online version contained the same curriculum and was delivered weekly using Zoom®. The curriculum content from weeks one and two of the in-person workshops was combined, enabling the program to be delivered online across four weeks. Through audio and chat options, participants were actively encouraged to ask questions during online live workshops, which aimed to increase the interaction between the facilitator and participants. The program's content was delivered as a PowerPoint presentation to increase visual appeal and interest. Participants were emailed program resources each week, including recipe booklets and content from the weekly topics in the workbook. The hardcopy program resources were mailed to the participants at the conclusion. The cooking and sharing of food components were removed from the online program; however, participants were encouraged and supported to cook recipes during the week as 'homework'. At the beginning of weeks two, three and four, participants discussed recipes they had prepared the week before, replicating the way the program was delivered in-person.

### **2.3 Sample and recruitment**

Participants were required to be 18 years old and over, and the parent or primary caregiver of a child aged 0–5 years. In-person participants were recruited through community-based parenting organisations, who advertised the program through flyers, Facebook posts and conversations with parents. The SEIFA (Socio Economic Index for Areas) index,<sup>37</sup> derived from Australian Census data, was used to identify socially disadvantaged areas, and community organisations were chosen based on their presence in those areas. Online participants were recruited through paid advertisements via Foodbank WA's Facebook page. Eventbrite®, an event management software program, was used to coordinate recruitment.

## 2.4 Study design

A pre- and post-program design was used to evaluate the curriculum. FSP facilitators were trained in the evaluation processes and administered questionnaires. If program attendance was high, a research assistant also administered questionnaires. Participants in the in-person program had their information sheet points read to them, and consent was assumed if they completed the paper questionnaires. Online participants had participant information sheets emailed to them and were able to provide consent by completing an online Qualtrics® questionnaire. Ethics approval was obtained from the Human Research Ethics Committee at (blinded) (HRE2019-0796).

### 2.4.1 Questionnaire design

The pre- and post questionnaire comprised 13 questions from a modified version of the validated tool for food literacy behaviours and confidence, previously developed and used to assess Foodbank's adult food literacy program.<sup>38</sup> Positive parenting feeding practices were measured using 10 questions selected from published validated child feeding questionnaires, including the Feeding Practices and Structure Questionnaire,<sup>39-41</sup> which were matched to weekly workshop objectives. The burden on the participants and evaluation time were the primary reasons for developing a short questionnaire. Participants were asked to rate the frequency of their behaviours and practices over the course of the previous month on a five-point Likert scale; 1 *never*, 2 *rarely*, 3 *sometimes*, 4 *most of the time* and 5 *always*. For questions directly addressing a child's eating, participants who had children younger than six months old or whose children were in foster care could select *not applicable*.

The participants were asked about their typical daily vegetable intake over the previous month. Vegetable servings were provided in ½ serve increments. Demographic data included 11 questions: sex of the participant, age, relationship with the child (i.e., parent or caregiver), number of children under 18 years, age of children aged 0–5 years, household structure, education level, employment status, postcode, English as a first language to identify culturally and linguistically diverse (CALD) participants and identification as an Aboriginal or Torres Strait Islander. Postcodes were converted to a SEIFA index of low, middle or high using the decile rankings, where low corresponded to deciles 1 to 4, middle to deciles 5 to 7, and high to deciles 8 to 10.<sup>37</sup> The questionnaire was tested in the first few programs and, where required, facilitators assisted participants with lower English proficiency by reading the questions to them.

## 2.5 Statistical analysis

Data were analysed using SPSS®(IBM) version 26. Results were considered statistically significant at  $p < 0.05$ . Paired t-tests were used to assess changes in food literacy behaviours, positive parenting feeding practices and vegetable intake. The five-point Likert scale was also divided into two categories for analysis: *Never to Sometimes* (1–3) and *most of the time and always* (4–5). McNemar’s test was used to assess the change from pre to post. A participant shifting from *never to sometimes* (1–3) at pre-program to *most of the time and always* (4–5) post program was classified as improvement for the variable. Conversely, the variable was deemed to be reducing for a participant who went from *most of the time and always* (4–5) pre-program to *never to sometimes* (1–3) post program. The net improvement was calculated as the difference between the proportion of participants who improved and those who did not. Multivariate logistic regression analysis was used to predict relationships and identify demographic variables associated with improved food literacy behaviours and parenting feeding practices. Post program outcomes were assessed using the multivariate logistic regression analysis after adjusting for baseline behaviours. The effects of the variables are represented as odds-ratio and associated 95% confidence intervals.

## 3. RESULTS

A total of 44 FSP programs were delivered, comprising 32 in-person and 12 online programs, with 41, of 302 participants suitable for evaluation. The data collected included 287 completed pre-program (T1) and 239 completed post-program (T2) questionnaires. A total of 224 matched pre- and post-questionnaires were available for analysis (74.2% of the total evaluated participants). Missing data in the questionnaires were random, and no questions were frequently missed.

### 3.1 Demographic characteristics

Participants were mostly female (96.6%), aged 26 -35 years (60.6%), and with one or two children less than 18 years old (85.0%). Just under half of the participants (42.4%) indicated that they lived in the most disadvantaged SEIFA areas. More than one-third of the sample (37.9%) indicated that their first language was not English, and 8.5% identified as either Aboriginal or Torres Strait Islanders, demonstrating the diversity of cultures (Table 1).

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**Table 1 Demographic characteristics of participants**

| Characteristic   | Responses  | n (%)      |
|--|--|------------|
| <b>Sex†<br/>(n=297)</b>  | Female   | 287 (96.6) |
|  | Male   | 10 (3.4)   |
| <b>Age<br/>(n=284)</b>   | 18–25y   | 10 (3.5)   |
|  | 26–35y   | 172 (60.6) |
|  | 36–45y   | 87 (30.6)  |
|  | 46+y   | 15 (5.3)   |
| <b>Parent/caregiver role<br/>(n=287)</b>                                 | Parent   | 275 (95.8) |
|  | Caregiver/guardian/grandparent/relative                        | 12 (4.2)   |
| <b>Number of children under the age of 18<br/>(n=287)</b>                | 1  | 142 (49.5) |
|  | 2  | 102 (35.5) |
|  | 3+   | 43 (15)    |
| <b>Age group of children under 5 years<br/>(n=283, n responses†=358)</b> | 0–1 year   | 142 (50.2) |
|  | 1–2 years  | 34 (12.0)  |
|  | 2–3 years  | 47 (16.6)  |
|  | 3–4 years  | 33 (11.7)  |
|  | 4–5 years  | 27 (9.5)   |
| <b>Household structure<br/>(n=281)</b>                                   | Live with a partner and children                               | 233 (82.9) |
|  | Single parent with child/children                              | 25 (8.9)   |
|  | Grandparent/Caregiver/Guardian with children                   | 9 (3.2)    |
|  | Extended family  | 8 (2.8)    |
|  | Shared house/with partner and no children                      | 6 (2.1)    |
| <b>Education level<br/>(n=283)</b>                                       | Primary or some high school                                    | 26 (9.2)   |
|  | Finished high school, trade/apprenticeship                     | 34 (12)    |
|  | Certificate or diploma   | 76 (26.9)  |
|  | Bachelor's degree or higher                                    | 147 (51.9) |
| <b>Employment status<br/>(n=284)</b>                                     | Full-time  | 40 (14.1)  |
|  | Part-time/casual   | 75 (26.5)  |
|  | Unemployed   | 42 (14.8)  |
|  | Household duties   | 93 (32.7)  |
|  | Maternity leave/volunteer/retired/unable to work/self employed | 31 (11.0)  |
| <b>SEIFA Index<br/>(n=283)</b>   | Low  | 120 (42.4) |
|  | Middle   | 97 (34.3)  |
|  | High   | 66 (23.3)  |
| <b>English as a first language(n=290)</b>                                |  | 180 (62.1) |
| <b>Identify as Aboriginal or Torres Strait Islander<br/>(n=282)</b>      |  | 24 (8.5)   |

†Additional sex included from attendance sheet

‡Participants could include up to two age groups



### 3.2 Changes in food literacy behaviours and confidence, parenting feeding practices and dietary behaviour.

There was a statistically significant change in all food literacy behaviours and positive parent feeding practices (Table 2). At the end of the program, 47% of participants self-reported increasing their vegetable intake (n=103/219), with a statistically significant mean increase of 0.33 (1/3) servings of vegetables, from 2.29 to 2.63 serves per day ( $p < 0.001$ ).

**Table 2 Change in food literacy behaviours, parenting feeding practices and dietary behaviour (pre and post) assessed using paired t-tests.**

| Description   | N   | Pre:<br>Mean $\pm$ SD | Post:<br>Mean $\pm$ SD | Mean Difference<br>Post/Pre:(95%CI) | p-<br>value |
|---|-----|-----------------------|------------------------|-------------------------------------|-------------|
| <b>Food literacy behaviours questions</b>   |     |                       |                        |                                     |             |
| Plan meals ahead of time  | 220 | 3.39 $\pm$ 0.91       | 3.65 $\pm$ 0.72        | 0.26 (0.14 to 0.37)                 | <.001       |
| Make a list before you go shopping  | 223 | 3.87 $\pm$ 0.99       | 4.08 $\pm$ 0.90        | 0.21 (0.09 to 0.32)                 | <.001       |
| Plan meals to include all food groups   | 221 | 3.20 $\pm$ 0.96       | 3.63 $\pm$ 0.72        | 0.43 (0.31 to 0.56)                 | <.001       |
| Plan to keep food safe when transporting outside of the home                        | 220 | 4.10 $\pm$ 0.99       | 4.35 $\pm$ 0.81        | 0.25 (0.11 to 0.38)                 | <.001       |
| Use a nutrition information panel to make food choices                              | 221 | 2.56 $\pm$ 1.09       | 3.47 $\pm$ 0.93        | 0.91 (0.75 to 1.07)                 | <.001       |
| Compare unit prices of healthy foods when deciding what to eat                      | 223 | 3.42 $\pm$ 1.07       | 3.95 $\pm$ 0.92        | 0.53 (0.39 to 0.67)                 | <.001       |
| Think about healthy choices when deciding what to eat                               | 223 | 3.84 $\pm$ 0.69       | 4.12 $\pm$ 0.65        | 0.28 (0.18 to 0.38)                 | <.001       |
| Change recipes to make them healthier   | 223 | 3.34 $\pm$ 0.92       | 3.70 $\pm$ 0.81        | 0.36 (0.25 to 0.48)                 | <.001       |
| Confident to manage money to buy healthy foods                                      | 221 | 3.55 $\pm$ 0.98       | 3.93 $\pm$ 0.76        | 0.38 (0.25 to 0.51)                 | <.001       |
| Confident to select low-cost healthy foods  | 221 | 3.39 $\pm$ 0.92       | 3.83 $\pm$ 0.78        | 0.44 (0.31 to 0.58)                 | <.001       |
| Confident to cook a variety of healthy meals  | 221 | 3.55 $\pm$ 0.81       | 3.88 $\pm$ 0.64        | 0.33 (0.22 to 0.44)                 | <.001       |
| Confident to make changes in your food choices                                      | 221 | 3.24 $\pm$ 0.75       | 3.75 $\pm$ 0.70        | 0.51 (0.39 to 0.63)                 | <.001       |
| Confident to keep foods safe to avoid food poisoning                                | 220 | 4.34 $\pm$ 0.77       | 4.50 $\pm$ 0.67        | 0.16 (0.07 to 0.26)                 | 0.001       |
| <b>Parenting feeding practices questions</b>  |     |                       |                        |                                     |             |
| Allow my child to choose the food they want to eat from food already prepared       | 217 | 2.70 $\pm$ 1.57       | 3.06 $\pm$ 1.61        | 0.36 (0.20 to 0.53)                 | <.001       |
| Prepare a different meal for my child from the family meal †                        | 220 | 2.60 $\pm$ 1.48       | 2.26 $\pm$ 1.30        | -0.34 (-0.52 to -0.17)              | <.001       |
| Serve something else for a meal or snack if my child does not like what is served † | 220 | 2.48 $\pm$ 1.42       | 2.10 $\pm$ 1.24        | -0.38 (-0.52 to -0.23)              | <.001       |
| Model healthy eating for my child by eating healthy food myself                     | 219 | 3.23 $\pm$ 1.51       | 3.67 $\pm$ 1.47        | 0.43 (0.28 to 0.59)                 | <.001       |
| Eat a meal with my child  | 220 | 3.43 $\pm$ 1.66       | 3.87 $\pm$ 1.52        | 0.45 (0.30 to 0.60)                 | <.001       |
| Hand feed my child (under 12 months) †  | 219 | 2.19 $\pm$ 1.46       | 1.97 $\pm$ 1.29        | -0.22 (-0.36 to -0.08)              | 0.003       |
| Let my child serve themselves   | 217 | 2.63 $\pm$ 1.61       | 2.90 $\pm$ 1.57        | 0.27 (0.10 to 0.45)                 | 0.003       |

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| Description  | N   | Pre: Mean $\pm$ SD | Post: Mean $\pm$ SD | Mean Difference Post/Pre:(95%CI) | p-value |
|--|-----|--------------------|---------------------|----------------------------------|---------|
| Distract (e.g., use electronic devices), praise or play with my child to get them to finish their food † | 219 | 2.50 $\pm$ 1.49    | 2.05 $\pm$ 1.35     | -0.44 (-0.59 to -0.30)           | <.001   |
| Let my child eat whenever they want †  | 218 | 2.31 $\pm$ 1.43    | 2.00 $\pm$ 1.16     | -0.31 (-0.46 to -0.15)           | <.001   |
| Discuss with my child why it is important to eat healthy foods   | 218 | 2.62 $\pm$ 1.68    | 2.93 $\pm$ 1.68     | 0.30 (0.16 to 0.45)              | <.001   |
| <b>Participant dietary behaviour</b>   |     |                    |                     |                                  |         |
| Servings of vegetables   | 219 | 2.29 $\pm$ 1.15    | 2.63 $\pm$ 1.13     | 0.33 (0.20 to 0.46)              | <.001   |

† As variables are reverse coded, a reduction (or negative post-pre difference) for these variables denotes an improvement.

### 3.3 Net improvement in food literacy and parenting feeding practices

Table 3 provides a summary of the net improvements in behaviours (never/rarely/sometimes versus most of the time/always) in the order of highest to lowest. The net improvement for all variables was statistically significant ( $p < 0.05$ ) and ranging from 5.9% to 33.1%. The largest net improvement in a food literacy behaviour was the *Use a nutrition information panel to make food choices* (33.1% net improvement). Net improvements in positive parent feeding practices were of a lower magnitude, with the largest being *Let my child eat whenever they want* (18.6% net improvement).

**Table 3A Net improvement in behaviours highest to lowest, assessed using McNemar's test**

| Variable   | Improved (%) | Reduced (%) | Net improvement (%) | p-value |
|--|--------------|-------------|---------------------|---------|
| Use a nutrition information panel to make food choices (1)                                 | 36.7         | 3.6         | 33.1                | <.001   |
| Confident to make changes in your food choices (2)   | 39.8         | 8.1         | 31.7                | <.001   |
| Compare unit prices of healthy foods when deciding what to eat (3)                         | 30.0         | 6.7         | 23.3                | <.001   |
| Confident to select low-cost healthy foods (4)   | 32.6         | 9.5         | 23.1                | <.001   |
| Confident to cook a variety of healthy meals (5)   | 27.6         | 7.2         | 20.4                | <.001   |
| Confident to manage money to buy healthy foods (6)   | 26.2         | 5.9         | 20.3                | <.001   |
| Let my child eat whenever they want † (7)  | 20.8         | 2.2         | 18.6                | <.001   |
| Plan meals to include all food groups (8)  | 24.4         | 7.2         | 17.2                | <.001   |
| Prepare a different meal for my child from the family meal † (9)                           | 22.3         | 5.4         | 16.9                | <.001   |
| Serve something else for a meal or a snack if my child does not like what is served † (10) | 20.3         | 3.8         | 16.5                | <.001   |
| Change recipes to make them healthier (11)   | 23.8         | 8.1         | 15.7                | <.001   |
| Plan meals ahead of time (12)  | 22.7         | 9.1         | 13.6                | <.001   |

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| Variable  | Improved (%) | Reduced (%) | Net improvement (%) | p-value |
|---|--------------|-------------|---------------------|---------|
| Eat a meal with my child (13)   | 15.1         | 1.6         | 13.5                | <.001   |
| Allow my child to choose the food they want to eat from food already prepared (14)                              | 25.0         | 11.9        | 13.1                | .006    |
| Model healthy eating for my child by eating healthy food myself (15)  | 16.7         | 4.8         | 11.9                | <.001   |
| Think about healthy choices when deciding what to eat (16)  | 16.6         | 5.4         | 11.2                | <.001   |
| Distract (e.g., use of electronic devices) praise or play with my child to get them to finish their food † (17) | 15.9         | 4.9         | 11.0                | .002    |
| Let my child serve themselves (18)  | 20.5         | 10.8        | 9.7                 | .030    |
| Discuss with my child why it is important to eat healthy foods (19)   | 16.0         | 6.9         | 9.1                 | .017    |
| Make a list before shopping (20)  | 14.8         | 6.3         | 8.5                 | .008    |
| Plan to keep food safe when transporting out of the home (21)   | 14.1         | 6.4         | 7.7                 | .016    |
| Hand feed my child (under 12 months n/a) † (22)   | 10.0         | 2.9         | 7.1                 | .017    |
| Confident in keeping foods safe to avoid food poisoning (23)  | 10.0         | 4.1         | 5.9                 | .029    |

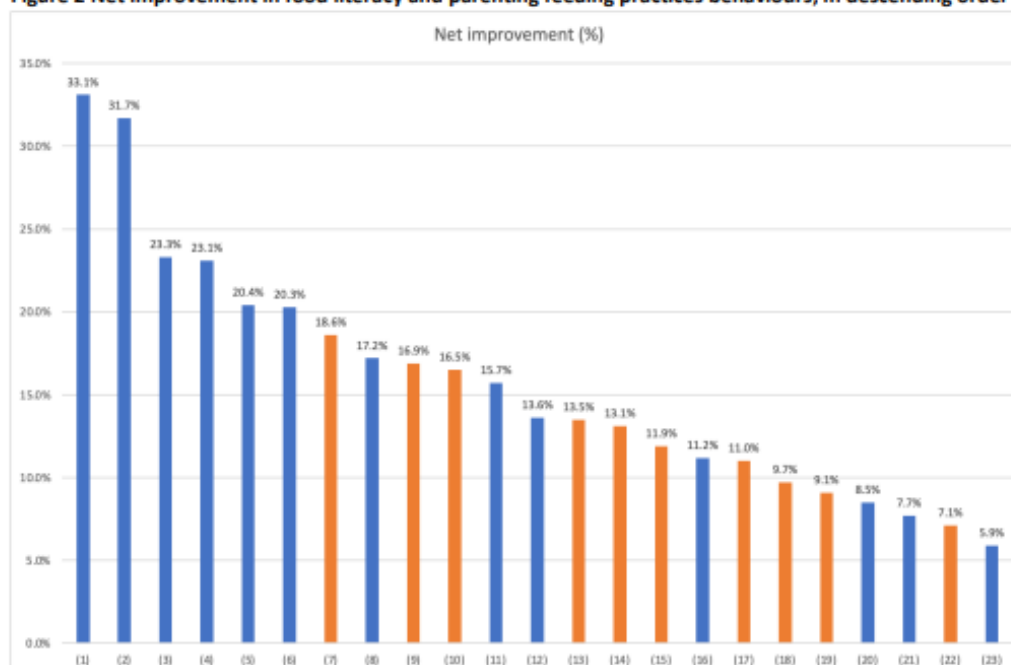
† Variables have been reverse coded

Figure 2 shows the net improvement across all variables, in descending order. The variables are denoted by numbers on the horizontal axis in Figure 2 and described in full in Table 3. It is evident from this graph and table that greater improvement was observed in food literacy behaviours (blue bars) as compared to parenting feeding practices (orange bars).

Six of the 13 food literacy behaviours had the largest net improvement of 20% to 33.1%, and three of the 10 parent feeding practices improved between 15 and 20% (Table 4).

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**Figure 2 Net improvement in food literacy and parenting feeding practices behaviours, in descending order**



*†* Variable numbers appearing on the horizontal axis are as indicated in Table 3.

*‡* Blue-coloured bars denote food literacy behaviours and brown-coloured bars denote parenting feeding practices.

**Table 3B Proportion of program participants that made net improvements in food literacy and parenting feeding practices**

| Range of Net Improvement | Proportion of Program Participants that Made Net Improvements |                                       |
|--------------------------|---|---------------------------------------|
|                          | Number of Food Literacy Behaviours                            | Number of Parenting Feeding Practices |
| ≥ 30%                    | 2 (15.4%)   | 0 (0%)                                |
| ≥ 25% to <30%            | 0 (0%)  | 0 (0%)                                |
| ≥ 20% to <25%            | 4 (30.8%)   | 0 (0%)                                |
| ≥ 15% to <20%            | 2 (15.4%)   | 3 (30%)                               |
| ≥ 10% to <15%            | 2 (15.4%)   | 4 (40%)                               |
| ≥ 5% to <10%             | 3 (23.1%)   | 3 (30%)                               |
| <b>Total</b>             | <b>13 (100%)</b>  | <b>10 (100%)</b>                      |

### 3.4 Multivariable logistic regression analyses

For each of the 13 food literacy and 10 parent feeding practice variables, baseline behaviours were significantly associated with behaviours post program ( $p < 0.05$ ).

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Having English as a first language was significantly associated with five behaviours or practices: (1) a higher likelihood of *Plan meals ahead of time* [OR(95%CI): 2.25 (1.13–4.48)], (2) *NOT Handfeeding my child* [OR(95%CI): 3.71 (1.00– 13.86)], and (3) *NOT Distracting, praising or playing with my child to get them to finish their food* [OR(95%CI): 3.72 (1.23–11.24)]; but (4) a lower likelihood of *Plan meals to include all food groups* [OR(95%CI): 0.50 (0.26–0.96)], and (5) *Use a nutrition information panel to make food choices* [OR(95%CI): 0.34 (0.18–0.63)].

Being female was significantly associated with a higher likelihood of three feeding practices: (1) *Plan to keep food safe when transporting it out of the home* [OR (95%CI): 18.68 (2.63–132.77)], (2) *Model healthy eating for my child by eating healthy food myself* [OR (95%CI): 8.92 (1.06–75.43)] and (3) *NOT Distracting, praising or play with my child to get them to finish their food* [OR (95%CI): 14.99 (1.70–132.08)].

Being older than 35 years, compared to those between the ages of 18 and 35 years, was significantly associated with a higher likelihood of three food literacy behaviours: (1) *Think about healthy choices when deciding what to eat* [OR (95%CI): 3.60 (1.09–11.93)], (2) *Confidence in managing money* [OR (95%CI): 2.96 (1.36–6.42)] and (3) *Compare unit prices of healthy foods when deciding what to eat* [OR (95%CI): 2.38 (1.21–4.71)].

Being a parent versus being a caregiver, guardian, grandparent, or relative was significantly associated with a higher likelihood of three feeding practices: (1) *Model healthy eating for my child by eating healthy food myself* [OR (95%CI): 15.57 (2.47–98.20)], (2) *Eat a meal with my child* [OR (95%CI): 15.64 (1.56–156.66)] and (3) *NOT Distracting, praising or playing with my child to get them to finish their food* [OR(95%CI): 8.29 (1.20–57.09)].

Being from a high SEIFA compared to a low SEIFA area was significantly associated with a higher likelihood of two food literacy behaviours: (1) *Planning meals ahead of time* [OR (95%CI): 2.52 (1.03–6.13)] and (2) *Confidence in cooking a variety of healthy foods* [OR (95%CI): 3.60 (1.25–10.38)]. Being from a middle SEIFA compared to a low one was significantly associated with a higher likelihood two variables: (1) *Think about healthy choices when deciding what to eat* [OR (95%CI): 3.58 (1.18–10.80)] and (2) *NOT Distracting, praising or playing with my child to get them to finish their food* [OR (95%CI): 5.84 (1.32–25.71)].

Identifying as an Aboriginal or Torres Strait Islander was significantly associated with one feeding practice, which was a lower likelihood of *Model healthy eating for my child by eating healthy food myself* [OR (95%CI): 6.91 (1.28–37.25)].

#### 4. DISCUSSION

The FSP program is a novel initiative that combines food literacy with positive parenting feeding practices. Participation in the program resulted in improvements in self-reported food literacy behaviours, positive parenting feeding practices and vegetable intake among parents of young children recruited from socially disadvantaged communities. Our findings showed that behaviour changes related to food literacy were more likely to occur than those related to positive feeding practices. Building on an existing program's design and evaluation processes, using validated instruments<sup>38</sup> and recruitment of participants at the organisation level were strengths of this research.

The FSP program was successful in attracting a range of participants, including people who are considered priority groups or described as hard to teach groups, such as Aboriginal and CALD people.<sup>7, 11</sup> More than one-third of our participants (37.9%) reported their first language to be other than English, which is more than double that of WA (17% are born in non-English-speaking countries).<sup>7</sup> A total of 8.5% of participants attending the program identified as Aboriginal or Torres Strait Islander, which is 2.5 times the WA state representation of Aboriginal people of 3.3%.<sup>42</sup>

##### 4.1 Food literacy behaviours

Participants reported mean positive changes in food literacy behaviour across all domains. The largest improvements in food literacy behaviours were the *Use a nutrition information panel to make food choices*, *Compare unit prices of healthy foods when deciding what to eat* and *Confident to make changes in food choices*. A unique feature of this analysis is the presentation of net improvements in addition to mean change, as very little known about how much change can be expected from a five-week program, with the most change in food literacy behaviours.

Results from other food literacy programs show increases in similar food literacy behaviours as the FSP.<sup>24, 43-46</sup> Programs that incorporate experiential cooking have demonstrated positive outcomes for confidence in cooking with basic ingredients, following a recipe and favourable impacts on food literacy, such as comparing food prices, using shopping lists and planning meals ahead of time.<sup>45, 46</sup> Exposure to healthy foods through cooking and tasting experiences offers opportunities and the potential to increase the likelihood that people will buy and prepare these foods in the future.<sup>45</sup>

##### 4.2 Parenting feeding practices

An important component of positive parenting feeding practices is responsive feeding, which is in line with a child's development and competence. This creates a supportive environment where a child can

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self-regulate their eating and develop autonomy.<sup>4</sup> Parenting feeding practices significantly improved as a result of this, the largest being *Eat a meal with my child* and *Model healthy eating for my child by eating healthy food myself*, with less frequency of *Distracting, praising or playing with children to get them to finish their food*. During the time spent sharing food at the end of each workshop, the program encouraged participants to model eating behaviours and practice responsive feeding strategies with their children. Our findings show that around one in six participants were able to learn and adopt responsive feeding strategies within five weeks. These strategies included net improvement in establishing routines around their child's feeding, such as reducing the likelihood of allowing their child to eat whenever they want or preparing a different meal for their child from the family meal.

Another positive result was the mean reduction in controlled feeding practices, with an increase in practices, such as allowing children to serve themselves or less distracting, praising, or playing with children to get them to finish their food. These results are consistent with those from other interventions that have been conducted for longer periods of time, such as a 12-week USA intervention with mothers of children aged three to five<sup>47</sup> and an 18-month New Zealand study with parents of children aged 0–2 years.<sup>18</sup> These interventions resulted in parents using more responsive feeding strategies, such as giving children a guided choice around feeding,<sup>47</sup> putting less pressure on children to eat at mealtimes and supporting children's autonomy around eating.<sup>18</sup>

A plausible explanation for the difference in net improvement between food literacy and feeding practices is that some food literacy behaviours can be learned and adopted in a short time.<sup>24</sup> In comparison, parenting feeding practices require parents to adopt behaviours that support autonomy, such as providing a feeding structure, which may take more psychological effort and time to develop.<sup>33</sup> Further, once certain behaviours become habitual, they may be more difficult to change within the short duration of a program. The behaviour that saw the largest net improvement was the *Use a nutrition information panel to make food choices*. This example illustrates a behaviour that is simple to apply when shopping and may have been easier for the participants to adopt. Parents also reported improvements in their confidence in several food literacy behaviours such as, increased confidence in making dietary changes and selecting low-cost, healthy foods. It may also be that, for those participants who did not change the frequency of a behaviour or practice, the program may have reinforced behaviours and practices they were already doing.

### 4.3 Dietary behaviours

In line with past food literacy initiatives<sup>24, 46, 48</sup>, we found a mean change in participants' own dietary behaviour at post-program, with a one-third serving increase in vegetable consumption per day. An

improvement in vegetable consumption is an encouraging result, given that only 7.5% of Australian adults consume the recommended daily servings.<sup>28</sup> Parental role modelling of positive dietary behaviours during family meals and using encouragement rather than pressuring children to eat have been found to have the most significant influences on children's eating habits.<sup>49</sup> Considering this, it is reasonable to assume that improving the nutritional habits of parents will benefit children's eating habits. Although not directly measured in this study, there is potential for future programs to examine this.

#### **4.4 Implications for future program delivery**

Applying multivariate logistic regression analysis enabled us to determine which participants benefitted the most from the FSP program to provide directions for future program iterations. The most variables associated with any demographic characteristic was five of the 23, indicating small predictive factors affecting reported outcomes. The program was more effective in improving food literacy behaviours for participants with English as their first language, older than 35 years and from a higher SEIFA within the domains of planning and selection. Participants who were older (>35 years) and from a higher SEIFA were more likely to report increased food literacy behaviours post program, including improved confidence in managing money and preparing a variety of healthy meals. This suggests that food literacy skills may take time and experience to build. More than two-thirds of the program participants were under the age of 35; therefore, our findings suggest that it might not be feasible to improve all variables for younger participants (<35 years) in five weeks.

Significant improvements in parenting feeding practices were more associated with parents attending the program than with participants in other roles such as caregivers, guardians, grandparents, or relatives. Participants identified as Aboriginal or Torres Strait Islander were equally likely ( $p < 0.05$ ) to make significant improvements as other participants for 22 out of the 23 variables. This finding supports the conclusion that the FSP program is suitable for a range of participants in the target group.

To focus on parents who need more support to change, future program design could consider sub-groups of parents where there are significant associations for less likelihood of change. For example, participants from CALD backgrounds, as those participants who reported English not being their first language, were less likely to report significant changes to several food literacy behaviours and positive parent feeding practices. This is a future focus area; people from CALD backgrounds have been recognised by the Department of Health WA as a priority group due to disparities in their health outcomes.<sup>7</sup> Language can act as a barrier and hinder access to location-based services, such as



antenatal checkups.<sup>11</sup> Future programs can be strengthened by ensuring that messaging and recruitment strategies are tailored to a range of CALD groups.

#### 4.5 Limitations

Participants may have been more motivated and interested in nutrition and cooking, as can be reported in such programs.<sup>45</sup> The FSP program was developed to be delivered in person; however, due to COVID-19 restrictions, the program pivoted to only online delivery for short periods, which impacted recruitment of participants from low SEIFA areas. Due to the recognised digital divide between socially disadvantaged and advantaged groups,<sup>50</sup> programs that were delivered online may have resulted in participants with a higher SEIFA index being recruited. The absence of a control group and the possibility of response bias were the limitations of this study. Although statistically significant, the associations reported above have wide confidence intervals, as to be expected given the low number of attendees in some categories. In some positive parent feeding practices, a decrease in frequency was noted post program, with the highest decrease occurring in *Allow my child to choose the food they want to eat from food already prepared* and *Model healthy eating for my child by eating healthy food myself*. Research shows that response shift bias or a higher perception of a behaviour and/or practice at the start of the program might lead to a decline in positive change<sup>51</sup> for example, when respondents overestimate the frequency of a behaviour during the pre-test and then report less at the post-test. This may transpire when they have a greater understanding of a behaviour or practice at the post-test. Since the children's own food intakes was not evaluated, it was unclear whether the program had improved their diets. Owing to the sample size of online participants, a comparative analysis between in-person and online program delivery could not be performed. However, considering the changing environment, future research should assess the efficacy of multimodal delivery approaches.

#### 5. CONCLUSIONS

The FSP program has demonstrated encouraging dietary behaviour change resulting from an innovative curriculum that integrates the principles of food literacy and positive parenting feeding practices. To the best of our knowledge, this finding has not been reported in Australia. The program framework and curriculum were found to be an effective model that enabled behaviour change over a relatively short time frame (five weeks). These results strengthen the proposition that programs that emphasise parents' own dietary choices while incorporating food literacy and positive parenting feeding practices, such as responsive feeding methods, can be successful in modifying the frequency

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of behaviours and practices. The success of the FSP program lays the foundation for and supports the continued implementation of the program across WA in a larger and broader sample of parents.

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# Chapter 4 Discussion

The following discussion will reflect upon the four phases of the present research, which were the scoping review (systematic search and summary), qualitative inquiries (Study 1 – parent focus groups and Study 2 – stakeholder interviews), program implementation and evaluation, and the strengths and limitations of each of the phases.

## 4.1 Target group

Parents and children living in areas of social disadvantage are a priority group because socioeconomic status is a contributing determinant in health inequalities in children (World Health Organization, 2018a). Children are a priority group recognised by the WA Department of Health that require additional support, intervention and follow up, including children from socially disadvantaged families, children of refugee and CALD families and Aboriginal children (Department of Health, 2017a). Half of the of the studies within the scoping review recruited parents considered low socioeconomic or from disadvantaged areas. Being from a lower socioeconomic status is associated with both a higher risk of chronic non-communicable disease and a lower uptake of health promoting behaviours, including healthy eating (Lioret et al., 2020). Children from Australian families classified as low socioeconomic are at greater risk of persistent and late-onset childhood overweight than children living in higher levels of advantage (Jansen et al., 2013).

Both the scoping review and stakeholders identified the need to address risk factors for poorer dietary outcomes in the target group, such as lower consumption of fruit and vegetables, higher intakes of discretionary foods, and reliance on convenience foods (Australian Bureau of Statistics, 2017).

Historically, mothers have had the responsibility of feeding children and as such mothers have been the focus of recruitment for interventions. Although feeding children is still predominantly mothers' responsibility, research shows there is an increasing share of responsibility for fathers in feeding children (Walsh et al., 2017). Fathers view themselves as active participants in informing their children's dietary behaviours and place importance on their

healthy eating behaviours (Walsh et al., 2017). Most participants in the *Food Sensations for Parents* program were women (97%), which is comparable to interventions reported in the scoping review, for example (93%) of the intervention group reported by Roset-Salla et al. (2016) and (100%) reported by Jancey et al. (2014) were women. Although most interventions targeted parents in general, mothers were overwhelmingly over-represented than fathers in all but one intervention (De Bock et al., 2012). Only four interventions specifically targeted mothers (Fisher et al., 2019; Fox et al., 2020; Hughes et al., 2020; Jancey et al., 2014).

#### **4.1.2 Multiple barriers to healthy eating**

There are multiple reasons for poorer dietary intakes for parents and children living in disadvantaged areas, because they experience more barriers (Moore T, McDonald M, & McHugh-Dillon H, 2014; World Health Organization, 2018a). Some of the barriers to healthy eating can be addressed with nutrition education that supports improving knowledge, skills, and attitudes towards healthy food. Reported barriers to healthy eating in the scoping review were consistent with focus group findings in this present study, and included lack of time to prepare healthy meals, lack of transportation and reduced accessibility to larger food stores, greater reliability of smaller convenience stores, inadequate knowledge of nutrition, a lack of food preparation knowledge and skills (Miller et al., 2017; Tartaglia, McIntosh, Jancey, Scott, & Begley, 2021), and the convenience and greater availability of fast food outlets promoting consumption of these foods (LoRe et al., 2019). Parents from disadvantaged areas are often targeted in interventions as they have greater difficulty in obtaining and understanding health advice and are less able to access and engage with health information and services (Myers et al., 2019). Parents in the focus groups in this present study were motivated and had positive intention to their child's nutrition, however the barriers they experienced made feeding their children challenging.

The parents' focus groups gave insight into the experiences and barriers parents face towards feeding children and was invaluable in the formative research to develop the FSP program. Stakeholders working with parents have an in-depth understanding and insight into the experiences and barriers



parents encounter with feeding children. Although structural barriers faced by parents in feeding children means that healthy diets are not easily changed or addressed, it was important to understand these barriers and identify gaps in parents' knowledge to inform the development and implementation of the FSP program.

Stakeholders who worked with families were able to explain the effects financial hardship had on the ability of some parents to provide healthy diets for their children. A recent scoping review of the habitual dietary costs in low socioeconomic groups compared to high socioeconomic groups in Australia found families with low incomes relied more on takeaway foods, which were seen as low cost, quick and easy (Lewis, McNaughton, Rychetnik, & Lee, 2020). Consistent with this finding, another Australian study found families who live with food insecurity and socially and economically disadvantaged people consume more takeaway and fast foods because of the convenience, speed and value for money (Butcher, O'Sullivan, et al., 2021). Stakeholders felt parents viewed healthy food as costly and unattainable, which was also reflected by focus group parents who described healthy food as expensive and unachievable on their limited budgets. Although people classified as low socioeconomic spend less on food, they spend a greater proportion of their household income on food that is often lower in dietary quality (Lewis et al., 2020). Food unaffordability or food stress occurs when more than 25% of a household's disposable income is spent on food (Lewis et al., 2020). A parent's perception that the cost of healthy food is outside of their budget can also negatively impact on a child's diet quality (Adamo & Brett, 2014).

For parents with low incomes, healthy eating can be time intensive and challenging. Food insecurity influenced parents' behaviours around food selection and feeding children. Food insecurity causes high levels of stress that can affect the way they respond to their child during feeding (Arlinghaus & Laska, 2021). Parents experiencing food insecurity feel there is stigma around not having money to pay for food and to feed children, which is associated with parents experiencing stress, shame and embarrassment (Kleve, Booth, Davidson, & Palermo, 2018). Although not overtly discussed, a small group of parents from the focus groups in this present research had

experienced or were experiencing food insecurity, which may have further exacerbated unhealthy eating and negatively impacted on their experience of feeding children. Understanding how food insecurity may shape parents' eating behaviours and how it effects parent feeding practices is an important consideration for a parent nutrition education program in disadvantaged areas.

In Australia it is estimated that between 4% (Australian bureau of Statistics, 2012) and 13% of the general population are food insecure (Bowden, 2020). This is likely underestimated by 5–10% in the general population whereas other data using different measurements indicate that this figure could be as high as 17% (McKechnie, Turrell, Giskes, & Gallegos, 2018). "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Food Summit, 1996; (Food and Agriculture Organization of United Nations, 2008, p. 1). Food security requires four pillars, which are addressing food availability, food accessibility including physical and economic, utilisation that includes food literacy, and stability of food supply and access. However, the FSA program, which targeted low to middle income earners within the Perth metropolitan area, found 40% of participants reported running out of money for food in the last month (Begley, Paynter, et al., 2019a).

One study reported in the scoping review found up to one third of parents who were classified as low income or CALD experienced food insecurity, which impacted on feeding practices (Fox et al., 2020). A major concern of food insecure parents was if their child was eating enough food, regardless of whether it was healthy or not (Fox et al., 2020). These parents were also reluctant to repeatedly introduce new foods to their child for fear of wasting food (Fox et al., 2020). A fear of wasting food was also expressed by focus group parents who said takeaway food was chosen over home cooked meals because it was a cheaper option that would be eaten with minimal waste.

Families in low SEIFA areas such as low-income earners, Aboriginal people, single parent householders and people who are socially or geographically

isolated, are considered at greater risk of experiencing food insecurity (Bowden, 2020). Evidence from National Nutrition Surveys shows significantly higher rates of food insecurity within Aboriginal and Torres Strait Islander households with rates between 22% and 31% (Australian Bureau of Statistics, 2015), and 50% in very remote Aboriginal communities (Brimblecombe, Ferguson, Barzi, Brown, & Ball, 2018). Food insecurity has implications for parents feeding their children and it is important to consider the unique barriers that parents may experience around food security. For example, parents who were themselves food insecure as a child are less likely to monitor their children's intake of discretionary foods and more likely to pressure their child to eat (Orr et al., 2020) or perceive their child's healthy weight as underweight (Arlinghaus & Laska, 2021). Parents who experience food insecurity can be supported to adopt healthy eating practices by improving their food literacy knowledge and skills through food utilisation. The underpinning strategy of food utilisation that supports food security is for practical knowledge and skills to transform food into household meals (Begley, Paynter, et al., 2019b).

#### **4.1.3 Parents' non-adherence to dietary guidelines**

Children under 5-years old in WA are not meeting dietary guidelines (Australian Bureau of Statistics, 2014). The processes involved in feeding children are influenced by many factors that are complex and multifaceted (Begley, Ringrose, et al., 2019; Dattilo, Carvalho, Feferbaum, Forsyth, & Zhao, 2020; McPhie, Skouteris, Daniels, & Jansen, 2014) and the challenges of meeting feeding recommendations start early (Begley, Ringrose, et al., 2019). Non-adherence to dietary guidelines results in children not meeting their daily recommended serves of core foods. For example in Australia only 18.5% of 2–3-year old children are meeting their daily recommended serves of fruit and vegetables (Australian Bureau of Statistics, 2017). Further, Australian children in low socioeconomic areas consume more junk foods and beverages (Boylan, Hardy, Drayton, Grunseit, & Mahrshahi, 2017).

The complexities of feeding children were highlighted in parent focus groups , with parents describing their experience of feeding children as highly emotional and challenging, and often led to parents feeling anxious, guilty

and frustrated (Tartaglia et al., 2021). Parents' lack of feeding strategies also supported the non-adherence to dietary guidelines, which occurred through parents trying to avoid conflict and resulted in children being allowed to decide what to eat. In order to avert a power struggle with their child, parents considered it more important to allow their children to eat anything than focus on their goal of providing healthy food. One of the barriers that parents face in providing nutritious food to their children included being overloaded with information that was often conflicting (Tartaglia et al., 2021). Parental challenges are mirrored in the literature with parents reporting they worry about their child eating enough, have a lack of time to feed children, experience challenges in getting their child to eat the same meal as the family, and that children will tend to choose discretionary foods when allowed to choose what they want to eat (Fox et al., 2020).

Non-adherence to dietary guidelines and increasing obesity rates for children was reported as the rationale for all the international studies within the scoping review (De Bock et al., 2012; Fangupo et al., 2015; Fisher et al., 2019; Fox et al., 2020; Garcia et al., 2020; Hughes et al., 2020; LoRe et al., 2019; Marsh et al., 2020; Miller et al., 2017; Roset-Salla et al., 2016).

Stakeholders who saw firsthand non-adherence to dietary guidelines, reported their experiences of parents feeding their children a considerable amount of discretionary snack foods and milk, or using infant feeding bottles beyond the recommended age. Although stakeholders worked closely with parents and had formed strong and trusted relationships, they were reluctant to discuss their concerns with parents about feeding children in fear of losing any trust they had carefully established. A reluctance of stakeholders to communicate concerns has been reported in another study (Dev et al., 2017) as a barrier that can hinder the provision of nutrition information for parents.

Choosing foods for children is complex and is influenced by individual factors and wider social and environmental conditions (Miller, Miller, & Clark, 2018). An Australian study found mothers' beliefs, values, norms and knowledge were central determinants in food choices for children under 5 years (Boak et al., 2016). Parents' own dietary behaviours influence a child's food

environment through food availability and food modelling observed by children (Larsen et al., 2015). Improving parents' knowledge about healthy eating is vital because they are the gatekeepers to healthy food within the home environment, and they strongly influence and shape children's eating behaviours (Birch et al., 2007; Musher-Eizenman et al., 2019; Vaughn et al., 2016)

#### **4.1.4 Priority groups within target group with specific barriers to healthy eating**

The FSP program, which targeted people living in low SEIFA areas, recruited families that are most at risk of experiencing social inequalities and health inequity. The program evaluation identified CALD and Aboriginal families as being two priority groups of parents who experience additional barriers to healthy eating (Cassells et al., 2020; Department of Health, 2019). More than one third of program participants (37.9%) indicated their first language was not English. The qualitative studies in this research identified parents from CALD backgrounds who had the following unique barriers to providing healthy food for their children: navigating unfamiliar foods in a new country, not understanding the food environment, and a limited knowledge of healthy food. Additionally, traditions that were learned and appropriate within their own culture around feeding children may have thwarted their child's feeding autonomy, such as pressuring children to eat (Evans et al., 2011; Vaughn et al., 2016). Variations in the definition of health, as well as differing values and beliefs around food and language, are important considerations when working with CALD parents. Language can act as a barrier for CALD parents and can hinder access to location-based services, such as antenatal checkups (Cassells et al., 2020).

A higher proportion of CALD participants was recruited to the program, with more than one third of participants reporting their first language to be other than English. Large scale Australian obesity prevention RCTs recruited a much lower percentage of non-English speaking parents. The InFANT study recruited 6.2% of participants (Campbell et al., 2013) that did not speak English at home, and the Nourish Study reported 22% of parents were born outside of Australia (Daniels, Mallan, Nicholson, Battistutta, & Magarey,

2013). The findings from the FSP evaluation found participants from CALD backgrounds were significantly less likely to change food literacy behaviours and feeding practices, which justifies the focus on this priority group for recruitment in future interventions.

Aboriginal people are a priority group for interventions as they experience both health and social inequities (Department of Health, 2021). Health disparities between Aboriginal and non-Aboriginal people can be explained by social determinants of employment, level of schooling and household income, and health risk factors such as poorer diet quality and excess weight (Australian Institute Health Welfare, 2022). Studies of the prevalence of chronic disease among Aboriginal people has found that 46% of Aboriginal or Torres Strait Islander people have at least one chronic health condition, and higher rates of overweight and obesity. Of Aboriginal children aged 2 to 14 years, 37% are overweight or obese, which is higher than the 24.9% for Australian population rates in children (Australian Bureau of Statistics, 2017, 2019). Aboriginal and Torres Strait Islander people have unique cultural priorities regarding food and nutrition, such as valuing traditional foods and culture being central to their health and wellbeing (Christidis, Lock, Walker, Egan, & Browne, 2021). Societal factors include the systemic and interpersonal racism experienced by Aboriginal people, the high availability of discretionary foods and drinks, and community level factors such as food affordability and physical access to food (Christidis et al., 2021). At the individual level, overcrowded housing, inadequate equipment and infrastructure for food preparation, and knowledge and skills around cooking and nutrition, are also barriers to healthy eating (Christidis et al., 2021).

The proportion of Aboriginal participants recruited to the FSP program was like other Australian community-based interventions targeting people from disadvantaged areas, with 8.5% of participants identifying as Aboriginal. This compares to 6.2% in the FSA program (Begley, Paynter, et al., 2019a) and 9% in an intervention targeting parents in supported playgroups (Myers et al., 2019).

#### **4.1.5 Need for early nutrition intervention**

Targeting parents of young children is a priority, as early nutrition intervention recognises the first 1000 days of life, from conception to 2 years of age, as a crucial time for child growth and development, and improves health outcomes (Lioret et al., 2020; Mameli et al., 2016). More recently there has been support to extend early intervention to the first 2000 days, up to 5 years of age, of a child's life for obesity prevention (Skouteris et al., 2020). Focusing on early nutrition intervention was recommended by authors of three studies in the scoping review (De Bock et al., 2012; Fangupo et al., 2015; LoRe et al., 2019). A positive result of the FSP program was that almost two thirds of parents reported having children aged 2 years and under, which is supportive of an anticipatory approach. Anticipatory guidance supports and advises on issues or a situation before they occur, for example the timing of introducing solids foods to infants (Laws et al., 2014).

#### **4.1.6 Food literacy knowledge, skills and behaviours**

Food literacy is important for the target group to ensure they have the knowledge and skills to effectively plan, manage, select, prepare and eat healthy food (Vidgen & Gallegos, 2014). Improving parents' food literacy skills in meal planning and cooking with basic ingredients, compared to selecting pre-prepared foods, has been positively associated with children's vegetable intake (Vaughn et al., 2016).

Not a lot is known about the food literacy knowledge, skills and behaviours of the target group, because in Australia there is no current national monitoring or surveillance of food literacy indicators. The WA Department of Health's Nutrition Monitoring Survey, last conducted in 2015, provided some food literacy information about the target group. The survey found people wanted assistance with knowing quicker and more ways of preparing healthier foods, and to know more about cooking to help them and their families to eat a healthier diet (Miller & Miller, 2017). The survey also found females were significantly more likely than males to take sole responsibility for food shopping, and most adults (73.1%) reported they 'can cook a wide variety of foods' or 'can cook almost anything' (Miller & Miller, 2017, p. 14).

Both in Australia and internationally, large scale parent nutrition interventions have focused on obesity prevention and do not especially target priority groups. For example, nutrition interventions in New Zealand have been part of universal healthcare offered to parents from birth to 5 years (Fangupo et al., 2015). In Australia, interventions have targeted first time parents in population-based research trials with a focus on parenting feeding practices, children's dietary improvements, and parents' nutrition knowledge, rather than on food literacy behaviours. These interventions were intended to improve parent self-efficacy for promoting and modelling healthy eating, but did not target food literacy behaviours (Campbell et al., 2013; Daniels et al., 2014; Spence, Campbell, Crawford, McNaughton, & Hesketh, 2014).

In other developed countries, parent interventions only incorporated one or two domains of food literacy. In the United Kingdom, the Eat Better Feel Better cooking program was a large scale government funded public health initiative, which targeted people living in areas of socioeconomic deprivation. The program focused on two food literacy domains: food selection and preparation (Garcia et al., 2020). The program was delivered by community-based organisations in Scotland as part of a global strategy to promote healthy lifestyles (Garcia et al., 2020). The intervention reported favourable outcomes in the dietary intakes of both parents and children who cooked together, such as a decrease in the consumption of discretionary food and an increase in fruit and vegetable intake (Garcia et al., 2020).

In the USA three recent interventions incorporated food literacy, and targeted parents with children under 5 years from communities classified as low-income (Fox et al., 2020; LoRe et al., 2019; Miller et al., 2017). The intervention which covered most domains of food literacy (plan, select, manage and cook) was a small 12 module home based RCT with 55 parents. The intervention resulted in significant changes to parents' nutrition knowledge, which was reported to be an important step towards behaviour change (LoRe et al., 2019). Other USA large scale interventions have been cooking programs such as Cooking Matters (Overcash et al., 2018). The program recruited low-income families, including children aged 9 to 12 years



and aimed to increase cooking confidence, nutrition knowledge and availability of healthy food within the family home (Overcash et al., 2018).

Inconsistencies in terminologies and design, and limited description of program curriculum in publications reporting food literacy interventions, makes comparisons difficult. The most recent review of home food preparation (cooking) interventions, with adults as the target group, identified only two parent focused interventions of the 28 identified (Reicks, Trofholz, Stang, & Laska, 2014). Overall, the review found home preparation interventions showed positive result in dietary outcomes, food choices and food preparation with most interventions focusing on improvement in food preparation, knowledge and skills.

#### **4.1.7 Multiple children within the family unit**

Implementing positive parenting feeding practices within a family unit with multiple children presents complexities for parents. A scoping review of interventions examining parent feeding practices and styles across two or more children within the same family unit found some evidence about the differences in the way parents used feeding practices and styles between children (Ayre, Harris, White, & Byrne, 2022). Parents adapt their feeding practices and style for each child, based on the child's individual differences such as weight status, eating behaviours, food preferences, temperament traits, age, birth order, and/or gender (Ayre et al., 2022). For example, differences can be seen in practices such as restriction and/or pressure to eat, and whether parents use more restrictions toward children perceived to overeat or of a heavier weight compared to a sibling with a lighter weight.

#### **4.1.8 Child feeding information sources**

Becoming a new parent is a time when information is vital in learning the what, why, when and how of feeding infants and children. Although mothers of young children are receptive to new information relating to feeding their children at this stage in their lives, they find it difficult to find reliable sources of information (Spence, Hesketh, Crawford, & Campbell, 2016). Difficulty in finding reliable information is supported by the findings of the parent focus groups in this present study; parents described difficulty in navigating the

overwhelming amount of information about healthy eating, which often was contradictory from advice they received from a health professional (Tartaglia et al., 2021). Some parents relied on information given to them by family members, a finding supported by research elsewhere that shows parents are more likely to take advice from family rather than what they perceive to be untrustworthy advice from health professionals or sources without practical experience with infants and children (Boak et al., 2016; Dattilo et al., 2020). Parents want reliable information and support without judgement about their feeding decisions but find obtaining reliable information difficult (Dattilo et al., 2020). Knowledge relates to a parent's timing, choices and processes for introducing solid foods to infants. Family and culture are strong external influences on a parent's attitudes, beliefs and perceptions around feeding decisions that is passed down by family members, and can be contradictory to evidenced based nutrition guidelines (Dattilo et al., 2020). Often information is associated with added judgement, and mothers can experience feelings of shame, guilt or stigma to live up to the expectation of being a 'good mother' (Dattilo et al., 2020).

Ongoing support for participants is important to assist them to maintain healthy eating behaviours. Parents from the focus groups found the amount of information available overwhelming and found it difficult to find reliable sources of information (Tartaglia et al., 2021). The scoping review found important strategies for supporting healthy eating behaviours were to refer parents to reputable sources of information and reinforce program messages. Utilising Facebook® as a component of an intervention for communication has been shown to be an effective and efficient way to communicate with parents and provide social support, trusted information, and to reinforce intervention messages (Love, Laws, Hesketh, & Campbell, 2019). Participants of the FSP program were invited to join a closed Facebook® group during the program that was hosted by Foodbank WA to provide ongoing support and reliable information for participants.

## 4.2 Program development

The FSP program is the first nutrition education program of its kind in Australia to address both food literacy and parenting feeding practices for parents of 0–5-year olds. Half of the reported studies in the scoping review incorporated components of both food literacy, sometimes just cooking and food parenting practices, but there was heterogeneity. Interventions varied in the underpinning theories and frameworks, number of sessions, session length and frequency, facilitator training, delivery mode, setting, and duration. Interventions were diverse in the types of activities, key messages and topics offered, the outcomes that were measured, and how data was collected and reported. Many studies were RCTs, considered the gold standard in research study design. The RCTs provided high quality evidence and recommendations, which usefully informed the development of the FSP program about appropriate theories, module topics (LoRe et al., 2019), and the use of supporting strategies to reinforce program messaging (Jancey et al., 2014).

Although the reported interventions provided evidence to support the development of the program, there was limited evidence of nutrition education interventions that incorporated all domains of food literacy together with strategies that supported parents' feeding practices. One small RCT ( $N = 55$ ) incorporated four food literacy domains (plan, select, manage, and prepare), however positive parenting feeding practices was limited to role modelling, and the intervention only assessed changes in parents' knowledge and did not measure any parental behaviour change (LoRe et al., 2019). One cooking based program, the What's Cooking pilot program (Miller et al., 2017), was the only cooking intervention that integrated positive parenting feeding practices, such as role modelling and family meals, with three food literacy domains of select, prepare and eat (Miller et al., 2017). However, this program was assessed qualitatively so it was not known if the program achieved dietary improvements or behaviour change within the target group.

The FSP program aimed to support parents to navigate the complex task of feeding children with the when, what and how of feeding by improving their knowledge and skills within a social learning environment. Parents value social interactions with other parents, which can provide learning opportunities and foster the adoption of healthy feeding practices (Russell et al., 2016). Social support among parents participating in the FSP program also may have contributed to parents' learnings through discussion with other parents of infants and young children at a similar age. Parents from the focus groups placed value on the social connection they built through attending community-based parenting organisations, a finding supported by stakeholders who expressed they had built trust and engaged parents in a range of supportive programs.

The majority of interventions in the scoping review had a group delivery mode with face to face group sessions, for example face to face cooking classes (Garcia et al., 2020) or parent study groups (Fisher et al., 2019). Learning through a group setting has advantages such as providing opportunities for observation and modelling behaviour (Bandura, 1998), through discussions that can be flexible and adaptive to the group (Garcia et al., 2020), and provide opportunity for including culturally relevant examples (Hughes et al., 2020). Social support has been reported as a way to engage parents in social settings such as a playgroup (Jancey et al., 2014) and to use a discussion based format for parents to raise their understanding of intervention messages (Myers et al., 2019).

#### **4.2.1 Effectiveness of food literacy interventions**

Food literacy is considered a dynamic term that encompasses a complex related set of skills, knowledge and behaviours to meet a person's nutritional requirements (Vidgen & Gallegos, 2014). The term, *food literacy*, was not explicitly used in any of the scoping review interventions. More commonly it was described as healthy eating (De Bock et al., 2012), nutrition intervention (Fangupo et al., 2015), or cooking skills intervention (Garcia et al., 2020; Miller et al., 2017). Food literacy is considered to include a greater understanding of health behaviours, to apply information and to critically

reflect on food decisions, and how those decisions impact on health (Krause, Sommerhalder, Beer-Borst, & Abel, 2018). Therefore, food literacy has an important significance to enable parents to apply this knowledge critically to have a greater impact on their family's health. Modest improvements in food literacy, even at a basic level of healthy food selection such as referring to food guidelines or reading labels when shopping, has shown significant improvements in diet quality (Fernandez et al., 2019).

In Australia limited interventions have specifically aimed to improve parents' food literacy, with only one identified in the scoping review. However, that intervention did not specifically target parents in disadvantaged areas (Jancey et al., 2014). Other food literacy programs implemented in Australia have targeted adults in general, and were not specifically developed for parents. Food literacy programs implemented by Foodbank WA have been effective with priority populations and have shown to be successful in improving food literacy skills and behaviours within groups at risk of experiencing economic and social disadvantage (Butcher, Platts, et al., 2021). For example, the FSA food literacy program has been the largest food literacy intervention reported in Australia. Although it did not specifically target parents, the program aimed to recruit a similar target group (adults with a low to middle incomes). The program was successful in improving adult food literacy in the domains of planning, management, selection and preparation, and increased the consumption of fruit and vegetables (Begley, Paynter, et al., 2019a).

Another Australian large scale cooking skills program, Jamie's Ministry of Food, was a community-based program delivered in Ipswich in Queensland, which is considered to be a population with low socioeconomic status (Flego et al., 2013; Rees et al., 2022). The program aimed to improve participants' cooking skills, knowledge and self-efficacy, and how to cook healthy meals quickly and cheaply. Cooking confidence and increase in vegetable intake by around half a serve per day were reported (Flego et al., 2014). It is not known if either of these Australian interventions had any positive flow on effects to children's dietary intakes within the same household, as these were not outcome measures of the program evaluations.

#### **4.2.2 Planning and management**

The planning and management domains of food literacy are important inclusions for the target group because a lack of financial resources can be a major barrier for these priority populations. The *plan* and *manage* terms in food literacy include knowledge and skills to prioritise money and time for food, have regular access to food, and make food decisions based on resources available such as time and money (Vidgen & Gallegos, 2014). A positive outcome of the focus groups was that parents reported since becoming parents they felt more confident in food literacy behaviours, such as planning meals. Stakeholders reported some parents were lacking in food literacy skills around cooking and nutrition, were not able to plan meals on a budget, and often made poor food decisions. For people on low incomes, the amount of money spent on food is seen as more flexible compared to other fixed expenses, such as rent or utilities. Therefore when faced with a sudden additional expense they may reduce the amount of money spent on food, making planning more difficult (Lewis et al., 2020). Food insecure families are less likely to plan meals therefore improving meal planning knowledge and skills may increase efficiency and reduce waste for families with limited economic resources (Fiese, Gundersen, Koester, & Jones, 2016). Through the formative research the importance of providing parents with recipes that were practical, low cost, healthy and quick to prepare, using basic nutritious ingredients was identified. Integrating a cooking component into the program design provided a safe and convenient way for parents to experiment with new recipes without the cost of purchasing recipe ingredients.

#### **4.2.3 Selection**

The food literacy domain of selection was integral to the design of the program. The food literacy term, *selection*, encompasses the knowledge and skills in selecting healthy food to be able to make critical decisions and judgements on the quality of the food (where it came from and what is in it), where to access food, and how to store it safely (Vidgen & Gallegos, 2014). Parents reported improvement in and more effort in eating healthier food through regularly having more healthy food available, such as fruit and

vegetables throughout the week and accessing cost-saving stores or markets to purchase food (Tartaglia et al., 2021). However, some parents considered healthy foods expensive and unattainable, which was also a view supported by the stakeholders. Program strategies and activities were developed to support changing parents' attitudes and improving their food literacy skills and confidence to make healthier food decisions.

#### **4.2.4 Preparation and Cooking**

The importance of addressing the preparation and cooking domain in food literacy has long been recognised as critical to improving dietary outcomes across all levels of socioeconomic status (Caraher & Lang, 1999). Having preparation skills enables people to make a tasty meal from available food, skills to experiment with food and adapt recipes, and to be able to handle food safety and hygienically (Vidgen & Gallegos, 2014). The parent focus groups in this present research found that since becoming parents, they carried out more cooking in the home and for some it was seen to save money, however there are numerous demands on a parent's time and parents expressed the view that feeding children needed to be fast and easy (Tartaglia et al., 2021). A lack of time was a major barrier for parents in preparing and eating nutritious meals. Keeping things quick and easy were also barriers to providing opportunities for children to be involved in food preparation as it was seen as messy and time consuming.

Cooking interventions from the scoping review reported improvements in dietary intakes that had a flow on effect to all family members. For example, improvement in parents' attitudes to allowing children to assist with cooking (Miller et al., 2017). Cooking interventions also provided exposure to new foods (Garcia et al., 2020) and a hands on approach to learning (Miller et al., 2017). Similarly other cooking interventions with adults have had a positive impact on dietary intakes, knowledge of healthy food, and healthier cooking strategies (Reicks et al., 2014). Positive improvements in children's dietary intakes were also reported in interventions incorporating a cooking component that included increasing fruit and vegetables intakes (De Bock et al., 2012; Miller et al., 2017), less consumption of takeaway/fast foods and

ready meals, and less consumption of convenience foods, discretionary food and drinks (Garcia et al., 2020).

#### **4.2.5 Eating**

Eating is considered a domain within food literacy and is particularly important for parents within a social context of eating with their child or with the family. The term *eating* includes knowing appropriate portion sizes, frequency of intake and balancing intake, and the knowledge of the impact of food on wellbeing and health (Vidgen & Gallegos, 2014). The FSP program was developed with experiential strategies that emphasised parents as role models for healthy eating and cooking. Experiential strategies included opportunities for parents to cook and taste new recipes, and for parents and children to eat together at the end of each session. Interventions conducted with social groups, such as new mothers groups, provides opportunities for observing other mothers who use positive parenting feeding practices, and facilitates discussion among parents (Spence et al., 2016). Eating together as a family and developing mealtime routines are an important concept that can integrate both capabilities of food literacy and positive parenting feeding practices.

Family meals provide an opportunity to expose children to healthy food, observe others eating through role modelling, and establish routines and behaviours in a familiar social setting (Dallacker, Hertwig, & Mata, 2018). A meta-analysis of 57 studies (Dallacker et al., 2018) found that family meals achieved small but significant associations with better diet quality and nutritional health. Most parents involved in this present study's focus groups (89%) reported they had eaten a meal with their child most of the time or always and valued the social connection created through eating together and setting a positive example for their children (Tartaglia et al., 2021). Role modelling and eating together were feeding practices that showed most improvement within the FSP program occurred with parents eating a meal with their child, and modelling healthy eating for their child by eating healthy food themselves. These results indicate role modelling is a behaviour that



parents find easy to implement and can employ without too much effort or time.

#### **4.2.6 Effectiveness of positive parenting feeding practices programs or interventions**

Feeding practices refer to the specific goal-directed behaviours used by parents to directly influence their children's eating, such as restriction or pressure to eat (Shloim, Edelson, Martin, & Hetherington, 2015). Parenting feeding practices have shown to be successful in positively influencing preschool-age children's dietary intakes and eating behaviours in parent interventions (Chen et al., 2021). The perception of stakeholders in the present study was that parents did not have strategies around feeding children and would often 'give into their child's demands', a behaviour that was recognised by parents involved in this present study's focus groups (Tartaglia et al., 2021). Parents can instil positive habits and values in children by demonstrating or encouraging healthy behaviours. For example, strategies such as eating together as a family can have positive impacts on the nutritional health of children (Dallacker et al., 2018). Children who experience family meals are more likely to eat healthy food and help maintain these behaviours than children who do not (Dallacker et al., 2018).

The FSP program supported how parents fed children by parent feeding practices that were integrated into its curriculum, such as hands on activities that taught principles of the sDOR in feeding framework (Satter, 1986), including the what, when and where of feeding children, and a focus on responsive feeding behaviours such as not pressuring children to eat. The program also aimed to improve parents' own dietary behaviours with the assumption that improvements in parents' dietary intakes would have a positive flow on effect and positively influence children's eating behaviours. The importance of a parent's own dietary behaviours is supported by a recent review Mahmood et al., (2021) that recommended interventions should provide parents with information and guidance on how to feed their children

as well as what, with a greater focus on parents' own unhealthy eating behaviours.

Effective parent feeding practices reported in the scoping review included strategies focusing on role modelling, developing feeding routines, family meals and responsive feeding, such as allowing children to serve themselves food. Role modelling was the most effective parenting feeding practice reported (De Bock et al., 2012; Fangupo et al., 2015; LoRe et al., 2019; Miller et al., 2017). Despite the importance of role modelling healthy eating behaviours, only two interventions were specifically designed to improve parents own dietary behaviours.

The qualitative component of the study reported in this thesis provided insight into the experiences of parents and the behaviours and practices they undertook to feed their children (Tartaglia et al., 2021). Parents reported behaviours that both built and thwarted child's feeding autonomy, such as pressuring children to eat and giving into children's demands to avoid conflicts. Parents lacked feeding structure and strategies around trying new foods and reported feeling as if they were losing control of their child's feeding. Unstructured and coercive feeding practices are commonly reported by parents who are impacted by stress, limited time, schedule changes and the child's mood or behaviour (Loth, Uy, Neumark-Sztainer, Fisher, & Berge, 2018). Coercive feeding practices, such as food restriction, pressure to eat, and threats and bribes, have been associated with increased unhealthy eating behaviours of children aged 3–5 years (Chen et al., 2021).

Parents have an intention to create positive structure and routines, however external influences such as the marketing of unhealthy foods to children and peer pressure or judgements from other parents or family also impact feeding children (Loth et al., 2018). Higher parental feeding control has also been linked to higher intakes of discretionary foods in children aged 4–8 years (Johnson et al., 2016). Parents are aspirational in their parenting feeding practices, but will revert to coping strategies that do not support children's feeding autonomy when faced with impacting barriers (Loth et al., 2018).

Positive parenting feeding practices can help parents have structure around mealtimes, and responsive feeding strategies has been shown to improve children's feeding behaviours including less fussiness and more enjoyment of food (Finnane, Jansen, Mallan, & Daniels, 2017).

#### **4.2.7 Obesity prevention**

The scoping review revealed a majority of research targeting parents of 0–5-year olds has an obesity prevention focus (Laws et al., 2014; Ling, Robbins, & Wen, 2016; Mazarello Paes, Ong, & Lakshman, 2015; Skouteris, Hill, McCabe, Swinburn, & Busija, 2016). While outside of the scope of the aim of the FSP program, several key design recommendations for improving intervention outcomes within the obesity field were supportive and consistent with results observed in the scoping review. One such recommendation supports an early intervention approach through the concept of anticipatory guidance. A systematic review of 32 interventions by Laws et al. (2014) found anticipatory guidance during the infancy period was effective in influencing early obesity related behaviours. The authors reported a number of successful interventions targeting children aged 3–5 years had common features including: a dual focus on obesity prevention and school readiness, establishing household routines, an educational component for parents, engaging parents through skill building (e.g., cooking skills, media literacy, communication, problem solving, conflict resolution and parenting skills), social networking, progressive rewards systems, and links to community resources (Laws et al., 2014).

First time parents may also benefit from anticipatory guidance on positive parenting feeding practices, and booster messages that advise them what to expect following the birth of subsequent siblings and how to prepare strategies to respond to such differences (Ayre et al., 2022).

#### **4.2.8 Theories and frameworks**

Integrating theories and frameworks into the program design ensures the program strategies are aligned to the program outcomes and supports the likelihood of greater effectiveness of nutrition education. Most interventions informing the program development reported the most common theory was

the SCT (Bandura, 1986). The main components of the SCT includes self-efficacy, goals, outcome expectancies and external and internal social reinforcement (Bandura, 1986). The FSP program delivered experiential activities for parents, group discussion, sharing experiences, and observation of other parents and children. The experiential activities in the FSP program may have supported parents to practice behaviours and build self-belief in their ability to achieve a desired outcome or behaviour. Goal setting through short term goals and long-term goals motivated parents to achieve outcomes. The program gave opportunities to parents to master new skills such as cooking, learning to read and interpret a food label, or practice a new behaviour such as allowing their child to serve themselves food rather than the parent taking control and deciding how much the child may eat. These strategies are supported in the literature with recommendations from a recent systematic review (Ling et al., 2016; Snuggs, Houston-Price, & Harvey, 2019), which found effective outcomes were achieved in obesity prevention interventions for parents of 2–5-year olds when they incorporated social cognitive theory-based strategies. Recommended strategies were to increase parents' skill development and emphasise feelings of mastery, self-monitor and set short- and long-term goals, increase self-efficacy and self-regulation through individualised positive feedback, and provide role modelling or opportunities for observational learning (Ling et al., 2016).

#### **4.2.9 Online delivery**

Due to the COVID-19 lockdowns, the face to face program was temporarily suspended and an online program was developed to enable continued delivery. Worldwide there has been an expansion in the number of online programs for adults (Organisation for Economic Co-operation and Development (OECD), 2020). Online learning has benefits for addressing participation barriers such as time, location and scheduling, however online learning requires basic digital skills, autonomy and self-motivation to learn (Organisation for Economic Co-operation and Development (OECD), 2020). Online programs have potential as an alternative to face to face delivery because of interactivity and appeal, tailored feedback and strategies for parents, cost-effectiveness, and target group reach.

The components of the FSP program that need further development and adaptation for online learning are interactive program activities to create engaging learning opportunities and group discussions, which is often more difficult to achieve with an online program compared to face to face interaction with participants. A recent review of web-based interventions targeting positive parenting feeding practices for parents with children up to 12 years old, reported small and non-significant effects for web-based interventions, except for parenting feeding practice of food availability and accessibility (Gomes, Pereira, Roberto, Boraska, & Barros, 2021). Further research with larger samples is needed to determine if this mode of delivery can impact parenting feeding behaviours, because the small number of reported interventions were heterogeneous in the data collection, design, sample and outcomes (Gomes et al., 2021).

Evaluation of a nutrition education program utilising the Facebook® Live platform, for adults with low incomes, showed similar results (pre to post) between diet quality and food resource management compared to face to face delivery (Adedokun et al., 2020). Other nutrition education programs reporting pivoting to virtual or online delivery due to the COVID 19 pandemic, reported advantages of online delivery such as accommodating larger class sizes (Saxe-Custack & Egan, 2022), decreased travel time for participants (Panichelli, Middleton, Kestner, & Rees, 2022; Saxe-Custack & Egan, 2022) and opportunities for that allowed for food preparation to occur in participants' kitchens (Panichelli et al., 2022). However, online programs also were considered more burdensome for program facilitators and resulted in less participant engagement with curriculum, reduced social connection compared with in-person workshops (Adedokun et al., 2020; Panichelli et al., 2022), and difficulties with connectivity and technology were reported as barriers to implementation of online programs (Adedokun et al., 2020).

### **4.3 Program setting and recruitment**

The setting of an intervention is important for the design to be contextualised to the needs of the people within the setting and to increase the likelihood of success. An understanding of the setting builds capacity and creates

opportunities for empowering both parents and stakeholders (Poland, Krupa, & McCall, 2009).

#### **4.3.1 Setting**

Parent nutrition education programs have been delivered in a range of settings but the most effective or most common is within a community setting, for the reason that parents are familiar with locations or services they regularly frequent (Garcia et al., 2020; Jancey et al., 2014). The FSP program was delivered within the facilities of community-based parenting organisations that supported the recruitment to the program of parents from the target group. Delivering interventions within existing community-based organisations was supported by the findings of a systematic review, which found interventions were more effective if they were incorporated into a primary health care setting or where parents access health services such as health care clinics (Laws et al., 2014). Taylor et al. (2020) also found the efficacy of parent and child health outcomes would be increased if interventions were integrated long term into practice at, for example, health clinics at local, state and national levels. There is potential for the FSP program to be promoted during routine child health screening and delivered statewide, which has been a strategy adopted by the InFANT intervention (Campbell et al., 2016), which would further support sustainability and ensure the program was delivered routinely (Laws et al., 2014).

#### **4.3.2 Recruitment strategies**

People living in areas of disadvantage are considered to be challenging groups to recruit to health promotion programs, however recruiting parents through community-based organisations in low SEIFA index areas was a successful strategy to reach the target group and priority populations. Evaluation showed just under half of the program participants (42%) indicated that they lived in the most disadvantaged SEIFA index areas. Recruiting parents through community-based organisations also enabled the recruitment of priority groups: more than one third of respondents (38%) indicated that their first language was not English, and 8.5% identified as

either Aboriginal or Torres Strait Islanders, demonstrating the diversity of cultures.

In a recent systematic review of culinary nutrition education interventions, researchers recommended that interventions recruit both women and their partners, target parents at preconception, and offer modules throughout the pregnancy and postpartum periods. Recruiting parents early also supports an anticipatory approach (Taylor et al., 2020). Reported strategies to recruit fathers to healthy eating interventions include marketing using the terms *quality time* and *fun* and delivering workshops on Saturday mornings or after work during the week, thereby reducing the impact on weekends, which were seen as family time (Morgan et al., 2021).

Stakeholders had an in-depth understanding of the needs of parents and what worked best to recruit them into programs within their community-based setting. A safe and inclusive learning environment that facilitates trust and rapport with families was crucial to delivering programs within this setting. Transitioning to parenthood is a time when parents have a heightened receptiveness and look for information around feeding and forming social connections with other parents, particularly if they are first time parents (Love et al., 2018). Important factors for engaging parents – particularly parents from diverse backgrounds in highly socially disadvantaged areas – are the alignment of program processes to the needs of parents, as well as tailoring content and delivery style to enable group discussion and to strengthen social connections (Fisher et al., 2019; Love et al., 2018). Researchers recommend a variety of communication strategies to deliver messages that include discussion, role modelling, and repetition to support understanding and uptake (Myers et al., 2019). Including participants in the program design to ensure the program design is more tailored to the target group has also been reported in the literature as an enabler to recruiting disadvantaged groups (Bonevski et al., 2014).

Incentives such as recipe booklets, basic cooking equipment, monetary incentives (Fisher et al., 2019) and childcare (Hughes et al., 2020) assisted

with recruitment and participation of participants in the studies identified for the scoping review (Fox et al., 2020; Miller et al., 2017). Stakeholders suggested the incentive of free childcare would reduce a barrier for parents to attend the program.

## **4.4 Program effectiveness**

The effectiveness of the FSP program in achieving its outcomes was impacted by the program duration, and the number of activities and time allocated to both competencies of food literacy and positive parenting feeding practices.

### **4.4.1 Duration**

Understanding and setting realistic expectations about what the program can achieve within 5 weeks needs to be considered for future program implementation. Interventions in the scoping review ranged in duration from 2.5 hours to 30 hours, with most having a similar duration to the FSP program with 12 hours face to face contact with participants. The results achieved in the FSP program are similar to other interventions reported in the scoping review (Fisher et al., 2019; Garcia et al., 2020) over a similar time period, which is encouraging to support interventions that may run over 5–6 weeks.

### **4.4.2 Effectiveness**

The evaluation of the FSP found it was more effective in changing food literacy behaviours than parenting feeding practices within the 5-week duration of the program. The evaluation showed the top six highest net improved variables were in food literacy behaviours, with approximately 1 in 3 parents improving these behaviours. The program resulted in around 1 in 6 parents learning and adopting responsive feeding strategies. Positive parenting feeding practices that require parents to adopt behaviours that support autonomy, such as providing feeding structure or routines, require greater psychological effort and may take more time to develop (Di Pasquale & Rivolta, 2018). Further, habitual behaviours may be more difficult to change within the short duration of a program. In addition, each 2.5 hour



workshop was predominantly dedicated to food literacy behaviours including cooking and eating (90 minutes), which may have also impacted on the improvements to positive parenting feeding practices. Less time and a lower number of activities that specifically targeted positive parenting feeding practices may have resulted in these practices not improving to the same extent as the food literacy behaviours.

More than half of the program participants reported 5 of the 13 food literacy behaviours and confidence, and 3 out of 10 positive parenting feeding practices were high at the start of the program reporting these as being *most of the time* or *always*. High food literacy behaviours included food safety behaviours and confidence in managing money and cooking a variety of meals. High positive parenting feeding practices included eating a meal with their child, modelling healthy eating and (not) allowing their child to eat whatever they wanted (reverse coded). Although participants who reported a high frequency of behaviours at the start of the program may not have made considerable changes, they may have still benefited from the program reinforcing behaviours they were already practicing. Further, research shows that being exposed to healthy foods through cooking and tasting experiences increases the likelihood that people will buy and prepare such foods in the future (Overcash et al., 2018). There is, then a suggestion that the evaluation did not capture benefits experienced by program participants, because the evaluation focused on frequency of behaviours, therefore the benefits of behaviour reinforcement were not captured for program participants who reported high food literacy behaviours and confidence and positive parenting feeding practices.

Positive parenting feeding practices did not improve to the same extent as food literacy behaviours within the FSP program. However, the evaluation found there was a mean reduction in controlled feeding practices, as a result of reporting increases in practices such as allowing children to serve themselves or less distracting, praising, or playing with children to get them to finish their food. These results are consistent with interventions from the scoping review that were conducted over longer durations, for example, a 12-

week intervention with mothers of children aged 3–5 (Fisher et al., 2019) and an 18-month New Zealand study with parents of children aged 0–2 years (Fangupo et al., 2015). These interventions resulted in parents using more responsive feeding strategies, such as giving children a guided choice around feeding (Fisher et al., 2019), putting less pressure on children to eat at mealtimes and supporting children’s autonomy around eating (Fangupo et al., 2015).

Undertaking multivariate logistics regression analysis helped to identify which participants benefitted most from the FSP program. The most variables associated with any demographic characteristic were five of the 23, indicating small predictive factors affecting reported outcomes. The program was more effective in improving food literacy behaviours for participants with English as their first language, being older than 35 years and from a higher SEIFA within the domains of planning and selection. Older participants (35+ years) and those from a higher SEIFA were more likely to report increased food literacy behaviours post program, including improved confidence in managing money and preparing a variety of healthy meals, which indicates that food literacy skills might take time and experience to build. More than two thirds of the program participants were under the age of 35; therefore, undertaking qualitative research with younger parents (<35 years) could identify unique barriers faced by this group and identify how to better engage with younger participants to support greater effectiveness of the program.

Comparisons of effectiveness of the FSP program to the scoping review interventions was difficult as the review identified a large heterogeneity within parent interventions, which varied in their design and outcome measures. For instance, only half of the interventions combined both food literacy and positive parenting feeding practices, only two interventions reported improvements in parents own dietary behaviours (as outcome measurers) and both of those did not include positive parenting feeding practices (Jancey et al., 2014; Roset-Salla et al., 2016). The FSP program resulted in all outcome measures showing statistically significant improvement with almost half (47%) of parents self-reported mean increase of 0.33 (1/3) servings of

vegetables per day, which is in line with other food literacy initiatives (Begley, Paynter, et al., 2019a; Garcia et al., 2020; Jancey et al., 2014).

# Research Strengths

## **Phase 1 Scoping review**

Scoping reviews are important to map the literature or key concepts (Arksey & O'Malley, 2005). The scoping review was able to compare 12 studies and highlight effective intervention components to help inform the development of the FSP program. An accepted approach was used to identify and map studies using the Preferred Reporting Items for Scoping Reviews (Prisma-ScR) (Tricco et al., 2018) statement and methods described by Arksey and O'Malley (2005). Scoping reviews do not provide an in-depth analysis and comparison of the quality of research (Arksey & O'Malley, 2005), however this review identified a number of studies with diversity in design and methodology, were theory based and used validated measures and dietary recall methods.

## **Phase 2 Qualitative Inquiry**

### **Study 1 – Parent Focus Groups reported in Paper 1**

Strategies undertaken to ensure rigour and trustworthiness included reflexivity and theoretical triangulation to achieve confirmability.

### **Study 2 – Stakeholder Interviews**

The majority of stakeholders worked in locations classified as low SEIFA (decile 1–4) and two interviews were conducted with stakeholders in high decile SEIFA areas (decile 8) until saturation in findings was reached. It was considered appropriate to include those stakeholders as within those locations there were pockets of reported disadvantage, especially in outer newly built suburbs with less social infrastructure.

## **Phase 3 – Program Development (stages 1, 2 & 3)**

A strength of this phase of the research was the rigorous processes used to triangulate the multiple data sources to develop the program design and curriculum. There was input into and consensus about the program content from a range of stakeholders working with the target group.

A program logic model mapped program activities. A logic model is considered to be an effective tool because it provides an explicit and visual

statement of the program activities required to bring about change (Medeiros et al., 2005). Program activities are linked to evaluation measures and to the results of the program.

Utilising theory and behaviour change techniques to underpin the program design and to select strategies and activities in health promotion planning, explicitly connects the program objectives and activities and improves effectiveness (Murimi et al., 2018). Using existing program activities – which had already been tested with participants from existing programs – also strengthened the program design.

Implementing pilot programs enabled the FSP program to be tested and changes made prior to full program roll out.

#### **Phase 4 – Program implementation and evaluation – reported in Paper 2 (under review for a peer reviewed journal)**

The FSP program was built on an existing program's design and evaluation processes, using validated instruments (Begley et al., 2018) and recruitment of participants at the organisation level.

The FSP program was successful in attracting a range of participants, including people who are considered priority groups or described as hard to teach groups, such as Aboriginal and CALD people (Cassells et al., 2020; Department of Health, 2019) More than one-third of participants (37.9%) reported their first language to be other than English, which is more than double that of WA (17% are born in non-English-speaking countries) (Department of Health, 2019). A total of 8.5% of participants attending the program identified as Aboriginal or Torres Strait Islander, which is 2.5 times the WA state representation of Aboriginal people of 3.3% (Australian Bureau of Statistics, 2021).

# Research Limitations

## Phase 1 Scoping Review

Not all data were presented in the relevant articles. For example, intervention curriculum or key messaging were not described in some studies.

Comparison between studies was limited by the variability of study design, such as varying ranges of outcome measures that were reported. Of the 12 studies identified, most were a RCT design, which provides rigour in research design and methodology. However, the RCTs varied in the number and types of outcome measures. Sample size of reported studies varied between 15 to 666 participants, therefore it is not known if the results can be applied across population groups. The use of self-reported questionnaires, and low completion and attendance rates were limitations in some of the community-based research interventions. Other reported limitations are the small number of behaviour variables measured, and variation between the studies of the duration of follow up on behaviour change. The findings may not be generalisable because of bias with self-reported dietary intake tools such as dietary recalls, and the findings not being comparable because of differences in measurements, and interventions that targeted specific cultural groups. Lastly, the search terms used in the literature search strategy may not have identified all relevant published evidence on similar parent interventions.

## Phase 2 Qualitative Inquiry

### Study 1 – Parent Focus Groups – reported in Paper 1

Participants were purposively selected from disadvantaged areas within the Perth metropolitan area only, as such, the findings do not represent the population of all parents.

While areas of disadvantage were chosen as the setting for this study, some participants reported living in a postcode from middle to high socioeconomic areas. Participants were mostly female and focus groups were only conducted during the daytime, which may have restricted some parents, particularly males from attending.

## **Study 2 – Stakeholder Interviews**

Data collected through this study used a purposive sample with most interviews conducted with stakeholders who were metropolitan based. If the program was to be expanded to regional locations it would be appropriate to conduct formative research with regional stakeholders to consider the unique barriers, experiences and needs of the target group within those locations.

## **Phase 3 – Program Development (stages 1, 2 & 3)**

The pilot program was only implemented with a small sample of participants, and it was not formally evaluated.

It was not known how many program participants were considered food insecure, which may have affected dietary intakes and parenting feeding practices. The FSA program reported that 40.5% of participants ran out of money for food in the previous month at program enrolment (Begley, Paynter, et al., 2019b). Food literacy programs may improve dietary intakes for people considered food insecure, but they only address one aspect of the numerous determinants of food insecurity (Begley, Paynter, et al., 2019b).

## **Phase 4 –Program evaluation – reported in Paper 2 (under review)**

A pre-post evaluation design was able to measure impact, which is suitable for measuring program effectiveness, however long-term behaviour change was not reported therefore it is not known if improvements in food literacy behaviours, confidence and positive feeding practices were sustained.

Participants may have been more motivated and interested in nutrition and cooking, as has been reported in similar programs (Begley, Paynter, et al., 2019a).

The absence of a control group and the possibility of response bias were the limitations of this study, however this one arm pre-post approach is a commonly used design and a cost effective and practical way of assessing impact (Reicks et al., 2014).

Children's own food intakes was not evaluated therefore it was unclear whether the program had improved their diets.

Due to the recognised digital divide between socially disadvantaged and advantaged groups, FSP programs that were delivered online may have resulted in participants with a higher SEIFA index being recruited.

Owing to the sample size of online participants, a comparative analysis between in-person and online program delivery could not be performed.



# Chapter 5 Implications and Conclusions

## 5.1 Implications

The findings from this research highlight several implications for future program implementation which are discussed here, then followed by the conclusions of the research.

### 5.1.1 Target group

#### *Future co-design to target priority groups*

Multivariate logistics regression analysis showed CALD participants were less likely to carry out some food literacy behaviours or positive parent feeding practices. Results from the analysis have implications for the program including the potential of working with priority groups through a co-design approach to tailor the program to their specific needs. Historically, feeding strategies within many cultures aimed to increase children's food intake, reduce distress, and promote weight gain, however within the modern food environment, an overabundance of food can increase the risk of obesity and promote unhealthy dietary intakes (Birch et al., 2007).

Targeting parents in disadvantaged areas requires strategies that reduce barriers for parents to engage in interventions. Effective strategies include working with key stakeholders to gain a clear understanding of the target group and carry out formative work with parents to assess their program preferences and capacity to implement the program recommendations (Miller et al., 2018).

Further research, including qualitative research together with co-design principles, is needed to understand and identify the unique barriers and needs of younger participants (less than 35 years of age) that may not be addressed in the current program.

### **5.1.2 Design and development**

#### ***Importance of parent interventions aiming to improve both food literacy and parenting feeding practices***

Feeding children is multifaceted and can be challenging for parents, therefore parents require a range of knowledge and skills to support healthy eating for themselves and their families. The combination of improving parents' food literacy skills and positive parenting feeding practices can support parents in achieving greater adherence to dietary guidelines and provide them with skills and strategies that support feeding children. Focusing on improved food literacy self-efficacy and skills may support parents to develop resilience to – and improve their management of – food insecurity (Begley, Paynter, et al., 2019b), which is an important consideration for this target group.

Research has highlighted the need for exploration in intervention design that addresses improvements in both parents' dietary behaviours (food literacy) and positive parenting feeding practices. A promising result is that interventions do not need to be extensive for positive behaviour change to be observed, with a duration of around 12 hours showing some positive changes particularly for food literacy behaviours. However, it is recommended the program duration be extended to achieve greater improvements in positive parenting feeding practices.

### **5.1.3 Setting and recruitment**

#### ***Pre-screening participants to tailor the program to the needs of the group***

Pre-screening participants can improve program outcomes by enabling the program to support the specific needs of the participants. The FSA program recommended pre-screening participants to tailor the program, and to provide food relief assistance to help people manage their food security and improve their dietary intakes (Begley, Paynter, et al., 2019b). Pre-screening of participants is also recommended for cooking programs to improve the program outcomes; screening can be achieved with a short paper-based or online questionnaire, or discussion with participants (Asher et al., 2020). Pre-screening identifies key data on relevant factors and needs of participants;

allows content for each session/program to be modified to suit the group; and for recipes to be selected based on food preferences, dietary restrictions and sensory appeal (Asher et al., 2020).

#### **5.1.4 Effectiveness**

##### ***Program duration may require longer than 5 weeks to make significant changes in all food literacy domains***

Food literacy encompasses multiple sets of behaviours. Whether a 5-week program is a sufficient amount of time to enable people to make changes in all domains of food literacy needs to be considered. The program evaluation concluded the program was more effective in improving food literacy behaviours within the domains of planning and selection for participants with English as their first language, being older than 35 years and with a higher SEIFA index. Older participants (35+ years) and with a higher SEIFA index were more likely to report increased food literacy behaviours post program, which suggests that food literacy skills might take time and experience to build. More than two thirds of FSP participants were under 35 years. Younger parents (less than 35 years of age) are more likely to have multiple children under the age of 5 which may result in feeding being more difficult and stressful compared to older parents with school age children who are more independent. Further, older parents with only one child under 5 may be able to afford child care and be back in the workforce at least part-time. Further research is needed to understand and identify the unique barriers and needs of younger participants.

##### ***Investigate the effectiveness of multi-modal delivery for Food Sensations for Parents program***

It was not known if the results from the face to face program were more or less effective than the online version. A separate analysis of the results could not be conducted because of the sample size. Future iterations of the program could investigate the effectiveness of a multi-modal delivery approach. The online version of the program may have been more convenient for parents to participate in, as they could engage with the program from the comfort of their own home. Although changing healthy

eating behaviours within the family home is challenging, a systematic review of 39 interventions found those that delivered information through human interaction and contact were more successful in behaviour change than information delivered through various forms of media but without human contact (Snuggs et al., 2019). The authors concluded elements of an effective intervention design were a carefully designed formative development stage with a well-defined target population, clear objectives, engaging content for parents, and a robust theory and evidence base. Interventions delivered within the home reduce barriers of participation and provide a cost effective alternative to face to face programs (Snuggs et al., 2019).

Covid 19 has accelerated the shift to online learning, which may have enabled some people to participate. However, it is also important to recognise the digital divide barrier in Australia, which reduces online participation for people with lower levels of income, employment and education (Thomas, Barraket, Wilson, & et al., 2020). Further, people living in rural areas have significantly less digital inclusion rates than people living in capital cities. Other sociodemographic groups that are more digitally excluded include people in low-income households, people who did not complete secondary school and who are not in the labour force (Thomas et al., 2020, p. 36).

### ***Advocacy – education alone is not enough***

The family system plays an important role in healthy eating behaviours, such as the availability of healthy food, family meals that expose children to a wide variety of foods, parents who role model healthy eating, and repeated exposure to foods. There are a number of external risk factors for poor nutritional outcomes of children outside of the family environment (Scaglioni et al., 2018). Education to increase parents' knowledge and skills is limited without environmental changes and support. Factors influencing what a child eats are impacted by the wider food environment such as food supply, food composition, food pricing and affordability, nutrition labelling, marketing, and access to healthy and unhealthy retail food outlets (Department of Health,

2021). The food supply system has been blamed for the rise in obesity rates on a global scale and has a negative impact on population health (Department of Health, 2021) .

Strategies recommended by the Western Australian Government to reduce the burden of obesity include a whole-of-population approach, early interventions and throughout life, the promotion of equity and inclusivity, strategic partnerships, and workforce development (Department of Health, 2021, p. 7). Strategic directions can steer healthy policy and implementation that support achievement of the Australian Dietary Guidelines across key settings such as schools, and legislation and regulation that, for example, reduces exposure to the marketing of unhealthy foods and drinks to children (Department of Health, 2021). A broader view should also focus on social policy to improve the determinants of health or factors that are considered protective, such as social support, higher incomes and education to reduce health inequities (Braveman & Gottlieb, 2014; Marmot, 2005). The development of the FSP program targeted modifiable determinants of healthy dietary intakes that a person has some control over, such as knowledge, skills and attitudes. However, a focus on the family, school and community environments are recommended to improve and support healthy eating because they impact on the behaviours of both parents and children (Birch et al., 2007). Children's diet quality can be supported by improvements to the range of environmental influences, such as the transition that children make from home to a school setting, and settings that aim to reduce the intake of discretionary foods (Johnson et al., 2016). These strategies – together with policy, economic interventions, supportive health promoting environments, public awareness and engagement, and the increase in the availability and accessibility of quality, affordable and nutritious food for all – will support the reduction of unhealthy dietary intakes (Department of Health, 2021).

Finally, advocacy for improving nutritional outcomes for children, particularly for the first 1000 days of life, can further support child and maternal health outcomes, such as paediatricians and health care providers encouraging exclusive breastfeeding for the first 6 months after birth (Schwarzenberg & Georgieff, 2018). In Australia, the Public Health Advocacy Institute advocate

for five priority action areas to reduce obesity. They are: improving nutrition for children, improving nutrition for Aboriginal people, increasing fruit and vegetable consumption, removing fast food sponsorship from sport, and improving food literacy and labelling (Public Health Advocacy Institute of WA, 2019).

## 5.2 Conclusion

*Food Sensations for Parents (FSP)* is an effective program, demonstrating it is possible to use nutrition education to improve food literacy behaviours and confidence, positive parenting feeding practices, and vegetable consumption.

This research comprised four phases (scoping review, qualitative inquiries, program development, and program implementation and evaluation), reviewed the current published literature, and provided findings relevant to parent and stakeholder experiences of feeding children, together with components of existing Foodbank WA initiatives, which informed the development of the FSP program.

There is a large heterogeneity in parent interventions reported in the literature, which vary in their design and outcome measures. Many studies target obesity related behaviours, however less reported are interventions that target parents' own food literacy skills that can have a flow on effect to improve family eating behaviours.

Findings from the qualitative phase of this study demonstrated variations in the food and nutrition experiences of stakeholders working with parents of children aged 0–5 years. Conducting interviews with stakeholders gave rich insight into their experiences with parents in low SEIFA index areas, which is supported by the literature, and was valuable in the development of the FSP program.

Parents are faced with many factors that influence what and how they feed their children. Engaging with parents through focus groups provided an awareness into the feeding experiences and barriers faced by parents, which was valuable for informing the development of the FSP program. Parents were found to be motivated with good intentions, but their daily reality made feeding children challenging. The focus groups supported a greater understanding of the emotional experience of feeding children and reinforced the need for the program to provide a supportive, non-judgemental learning

environment that supported parents in achieving improvements in both food literacy and positive parenting feeding practices (Tartaglia et al., 2021).

Food literacy skills encompass the knowledge skills and behaviours to navigate the daily food needs of individuals, and can support parents to plan and manage, select, prepare, and eat healthy food (Vidgen & Gallegos, 2014). The FSP program demonstrated that within 5 weeks parents can improve food literacy behaviours and confidence, and increase their vegetable intake. Most improvement can be made by participants older than 35, have English as their first language, and are from higher SEIFA index areas.

Despite positive parenting feeding practices, such as role modelling healthy eating – which was reported by parents as important during their child's development and easily incorporated into daily routines – parents require more time to develop these practices than food literacy behaviours. Positive parenting practices may require more psychological effort from parents to implement, therefore a longer program duration may be required to support parents achieve greater improvements in these practices. Further, qualitative research with younger parents (less than 35 years) is required to identify their unique barriers and needs to feeding children which may support greater improvements in parenting feeding practices which may not have been addressed by the FSP program.

Factors influencing what a child eats are impacted by the wider food environment. Supportive policy and advocacy is needed to reduce the barriers parents face in providing healthy food for their children and supporting the achievement of dietary guidelines.

The results of this research show the combination of both food literacy behaviours with positive parenting feeding practices provides parents with the knowledge, skills and ability to apply their knowledge and to make critical feeding decisions for positive outcomes for themselves and the health of their children.



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## Appendix A. Attribution Tables

|  | Conception and Design | Acquisition of Data and Method | Data Conditioning and Manipulation | Analysis and Statistical Method | Interpretation and Discussion |
|--|-----------------------|--------------------------------|------------------------------------|---------------------------------|-------------------------------|
| <b>Publication 1.</b><br><b>Exploring Feeding Practices and Food Literacy in Parents with Young Children from Disadvantaged Areas. <i>Int J Environ Res Public Health</i>, 18(4). doi:10.3390/ijerph18041496</b> |                       |                                |                                    |                                 |                               |
| Co-Author 1.<br>Jennifer Tartaglia   | ✓                     | ✓                              | ✓                                  | ✓                               | ✓                             |
| Co-Author 1 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed   |                       |                                |                                    |                                 |                               |
| Co-Author 2.<br>Michelle McIntosh  |                       | ✓                              |                                    |                                 |                               |
| Co-Author 2 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed   |                       |                                |                                    |                                 |                               |
| Co-Author 3. Jonine Jancey   |                       |                                |                                    |                                 | ✓                             |
| Co-Author 3 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed   |                       |                                |                                    |                                 |                               |
| Co-Author 4<br>Jane Scott  |                       |                                |                                    |                                 | ✓                             |
| Co-Author 4 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed   |                       |                                |                                    |                                 |                               |
| Co-Author 5 Andrea Begley  | ✓                     | ✓                              | ✓                                  | ✓                               | ✓                             |
| Co-Author 5 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed   |                       |                                |                                    |                                 |                               |

|  | Conception and Design | Acquisition of Data and Method | Data Conditioning and Manipulation | Analysis and Statistical Method | Interpretation and Discussion |
|--|-----------------------|--------------------------------|------------------------------------|---------------------------------|-------------------------------|
| <b>Publication 2.</b><br><b>Effectiveness of a food literacy and parenting feeding practices program for parents of 0 to 5 year old's in Western Australia. (under review)</b> |                       |                                |                                    |                                 |                               |
| Co-Author 1.<br>Jennifer Tartaglia   | ✓                     | ✓                              | ✓                                  | ✓                               | ✓                             |
| Co-Author 1 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed               |                       |                                |                                    |                                 |                               |
| Co-Author 2. Jonine Jancey   |                       |                                |                                    |                                 | ✓                             |
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| Co-Author 3. Jane Scott  |                       |                                |                                    |                                 | ✓                             |
| Co-Author 3 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed               |                       |                                |                                    |                                 |                               |
| Co-Author 4<br>Satvinder Dhaliwal  |                       |                                | ✓                                  | ✓                               | ✓                             |
| Co-Author 4 Acknowledgment: I acknowledge that these represent my contribution to the above research output and I have approved the final version.<br><br>Signed               |                       |                                |                                    |                                 |                               |
| Co-Author 5 Andrea Begley  | ✓                     | ✓                              | ✓                                  | ✓                               | ✓                             |
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## **Appendix B. Focus Group Script**

### **Food Sensations for Parents Focus Group Script Overview for facilitator (version 3)**

#### **Preparation**

Ask participants where possible to fill out demographic questionnaire (ask if they need assistance- can read out questions) (offer tea/coffee –morning tea).

#### **Introduction**

Thank you for coming along today. Introduce self, colleagues and Foodbank WA. Foodbank WA provides a range of services such as education programs on healthy eating for all ages and also distributes food to those who don't have enough through agencies and their regional centres. If you need to know more, please speak to Jenny/Michelle after the group.

We are interested in what it's like to feed kids, what works for your households and what challenges you face. Foodbank have received a money from Healthway to develop a program/workshop to assist parents like yourselves. We are speaking to a range of parent groups like this across Perth and will write up a report summarising what our findings are. Jenny, Michelle and I have kids in their 20s, so we don't know what it's like to be a parent in 2019.

**GROUND RULES** In this discussion we want to hear about your own experiences and to share these with the group – everyone's experience is different. You are the expert on your child/children. We want to stress that this is a judgement free zone- there are no right or wrong answers. We do ask that you respect what others in the group are sharing, even if your experiences are different and what is said here- says here, that you don't discuss what others said outside the discussion group.

The format for today is that the discussion group should take approximately 60 minutes. If you need to deal with your child please leave whenever you need to – they are your priority. We will be audiotaping as not good at taking notes and speaking. It would help if we just speak one at a time. You might be tempted to jump in but wait until that person finishes speaking- we have time to hear from everyone.

**ANONYMITY** Your participation is voluntary and confidential. While we are taping, we are only using first names and it wouldn't be possible to identify you. We have a consent form that we need you to sign that indicates you are aware of the purpose of the research and Jenny's Masters, the confidentiality of your name and comments that we will maintain, you've asked any questions you have and that you've received your \$20 voucher.

Any questions before we begin?

#### **Icebreaker**

To start I'd like everyone to share how long you've been coming to this centre and what child/children aged between 4 months and 18 months/2 years OR 2 and 5 years. Focus on that child/children so we can get an idea of what age ranges you are going to be talking about. What is your youngest child's name, age and favourite food? Who'd like to go first?

#### **PART 1- PERSONAL FEEDING EXPERIENCES (Objective 1 Discuss involvement in food planning, selection and preparation)**

1. **To start off with, we are interested in hearing about what decisions do you make about what your child eats?**
  - What extent do you feel you can influence your children's eating OR your child makes the decisions?
  - Who or what else influences the way your children eat? How so? (e.g., cost, access, other adults, child preferences, media, nutrition)
  - Does healthy eating feature in the decision making?
  
2. **We are interested in the process of feeding your baby/toddler/pre-schooler. Think back to yesterday afternoon and evening. If I had a video camera in your house (fly on the wall) what would I have seen when your child was being fed?**
  - How was your household eating together, high chair?
  - What kinds of routines or rules related to eating does your family follow?
  - What affects what or how much your children eat?
  - Suppose your child does not like what is being served for a meal. What happens?
  - Suppose your child does not finish his meal. What happens?
  
3. **Who is involved in preparation/cooking in your household?**
  - Cooking regularly or buying in food
  - Commercial baby and kids food use

**PART TWO- DIFFICULTIES/CHALLENGES AND STRATEGIES THAT WORK (Objective 2 Identify the challenges faced by parents feeding children 0-5? Misconceptions)**

4. **We hear a lot about the difficulties in parents face when feeding their children. We'd like to get a sense of what you think makes it difficult to feed kids- what do you think or hear about the difficulties parents' face then feeding children.**

*Topics-* Introducing new foods, Fussy eating, Texture changes, Milk or other food jags

*External influences –* Costs of foods, influence of grandparents, others

- How do you deal with this challenge?
  - How or where did you learn to do this?
  - What support or help have you gotten to deal with this challenge?
  - Are there things you wish you could do differently or tried to do differently?
5. **What is it like to feed your children- how do you feel- when do you feel good about feeding?**
    - What did that look and feel like?
    - What is the experience like for you?
    - What is it like for your child?
  
  6. **When it comes to feeding your child, what comes to mind as being most important to you?**

*Probe on addressing hunger, waste, finishing plate, health/nutrition, variety*

    - This seems really important to you, please tell me more about it
    - What are the reasons you feel this way?

**7. Tell us about what things parents can do to help children develop healthy eating habits?**

Prompts...focus on behaviours rather than information

- Routine
- Rules around mealtimes
- Being a role modelling
- Providing healthy food

**8. What are some things you might have tried to get your child to eat healthy food?**

- What worked and/or what didn't work?

**PART THREE- FINDING INFORMATION AND POTENTIAL PROGRAM**

**CONTENT (Objective 3 Identify what assistance parents would like with family meals and feeding children; Objective 4 Determine the barriers and enablers to engage parents in nutrition education sessions)**

**9. What kind of food-related activities do you like to do with your child (pre-schoolers)?**

**10. Have you gone searching for information about feeding kids- what have you found useful? How do you use information about feeding kids that you hear about?**

- How easy is it to use this information?
- Do you use of apps and what for?

**11. One of the reasons for this discussion today is that Foodbank are developing a program for parents? We'd like to hear your views on what would be useful topics and activities to cover in a program?**

Prompts...

- **Healthy eating topics-** How much and what to feed your child? When to introduce solids? Information on allergies, how to pack a healthy Lunch boxes, Nutrition and links to child development and growth, strategies to deal with fussy eating
- **Food Literacy type activities** Food label reading, healthy cooking, Recipes, Menu planning & budgeting, Food safety

**12. What programs have you attended at the centre and what did you like about them?**

- Delivery method, length, resources given out

**13. Is there anything else you think is important to tell us about feeding kids?**

**14. Foodbank use Superhero Foods figures to promote healthy eating in schools – how do you think your pre-schooler aged child would respond to these characters?**

**END**

Thank participants for sharing and that it's been a valuable experience. Your opinions will be valuable to the research and we hope you've found the discussion interesting. Provide one or two sentence summary.



## **Appendix C. Stakeholder Interview Guide**

### **Interview Guide**

#### **Overview for facilitator**

*Thank you for participating today.*

*The aim of this interview is to identify the key nutrition issues facing parents of children aged 0-5 years old. The information you provide us will help inform the development a parent nutrition education program for parents of 0-5 year olds.*

#### **Format for today:**

- *The interview should take approximately 60 minutes.*
- *Confidential.*
- *Audio-taped and research assistant taking notes.*
- *There are no right or wrong answers, we are interested in your experiences.*

#### **ICEBREAKER – informal discussion**

*Tell me about the parents that come to this centre.....types/family structure/CALD and so on*

1. *I'm interested to hear about your experiences with parents in this centre relating to them feeding their kids*
  - *Discussions you've had with parents about food*
  - *Types of foods you see parents feeding – break into age groups – less than 12 months/toddlers/preschool aged*
  - *Ways in which parents feed kids (coercion- pressure to eat, praise)*
2. *Can you tell me about your experiences with the parents that come to this centre and your sense of what happens around planning, selection and preparation around of food for their kids?*
  - *What do you think is happening at home for your parents around cooking and meal preparation?*
  - *What sort of cooking activities (if any) do you run at your centre?*

3. *What do you think parents want to know about feeding kids?*
  - *Are there any other topics that you think should be covered or would be relevant with your clients/groups?*
  - *Are there any particular cultural issues that affect nutrition for vulnerable groups that you work with (e.g., CALD, Aboriginal, etc).*
4. *In thinking about a workshop/program for parents, what has been your experience with in engaging/attracting parents to attend workshops at your centre?*
  - *Type of programs that have worked well? Have any of those covered nutrition or cooking?*
  - *Promotion/Recruitment (e.g., methods of promotion and communication that work well)*
  - *Have you used any incentives e.g., cost, food, childcare, social interaction*
  - *What time of day is more accommodating for parents? (straight after school drop off, afternoons prior to school pick up, anytime during school hours)*
  - *Child involvement in workshops?*
  - *Level of attendance- week to week program*
  - *Have interpreters been required?*
5. *What are the barriers or challenges to engaging parents in workshops of sessions?*
  - *What has prevented parents attending programs at your centre in the past?*
  - *For example time, cost, childcare, language/literacy, cultural factors, priority*
6. *Can you provide any suggestions that may improve ongoing attendance of parents?*
  - *If it is a 4-week program, what strategies ensure the same parents attend weekly for the duration of the program?*
7. *Based on your experience, what format do you think would work best with parents?*
  - *Frequency (e.g., Weekly workshops with the same group running over a number of weeks or one-off workshops)*

- *Duration? 1½-2 hours overall, Length of education versus cooking?*
  - *Structure (e.g., including cooking and hands on activities?)*
  - *Participation? Parents only? With children?*
  - *Interpreters?*
  - *Creche available?*
8. *What type of resources works well with your target audience?*
- *What type of resources do you think the target group will be interested in?*
    - *Combined recipe book with education information (e.g., FSA)*
    - *Handouts (brochures, posters, flyers, fact sheets) for further information?*
    - *Recipes booklets/pamphlets*
    - *Online resources/websites*
  - *What resources would assist parents in feeding their kids and promoting nutrition? What do you think would be useful for parents?*
    - *Plates, lunchboxes, cups (provide examples)*
    - *Storybooks*
    - *Placemats*
9. *Thinking about the groups of parents you work with, are there any other key issues or factors that you feel may be important or useful for us to know about in the planning and implementation of a parent nutrition education program?*
10. *Summary question – Is there anything else you'd like to add about feeding kids and your experiences in this centre with healthy eating and programs that work for your parents?*
11. *Do you have any other key contacts or people you think would be important for us to talk to?*

## Appendix D. Stakeholder Demographic Survey

### Stakeholder Interview Questions



Curtin University

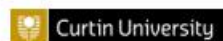
*Design and evaluation of the Food Sensations for Parents program*

Tick (✓) in the box provided which is the best answer for each question. Please answer all questions & return to a Foodbank WA staff member.

**1** These questions help us describe who is attending the stakeholder interviews.

1. What is the postcode of the centre? \_\_\_\_\_
2. Are you?      Male       Female       Prefer not to say
3. How old are you?  
<18    18-25    26-35    36-45    46-55    56-65    66+
4. What sector would you classify your organisation? (Select the best answer)  
Government   
Non-government   
Not-for-profit   
Other (please list) \_\_\_\_\_
5. What is your role/title in the organisation?  
\_\_\_\_\_
6. How long have you worked with parents?  
\_\_\_\_\_
7. Do you work with Aboriginal, Culturally and Linguistically Diverse (CALD) or other disadvantaged/vulnerable groups?  
Yes    No    Please specify \_\_\_\_\_
8. Do you identify as Aboriginal or Torres Strait Islander?  
Yes    No

Thank you for completing this questionnaire.  
Please check you have answered all questions and give to a Foodbank WA staff member



Appendix E. Forum Power Point Presentation



**FIGHTING HUNGER  
IN AUSTRALIA**

**FORUM**

**FOOD SENSATIONS FOR PARENTS (0-5 YEARS) PROGRAM**

3 OCTOBER 2019



Welcome

## FORUM OVERVIEW

- **Introduction** - Dr Roslyn Giglia
- **Research Processes & Qualitative findings** - Dr Andrea Begley
- **Morning Tea**
- ***Food Sensations*<sup>®</sup> for Parents** - Jenny Tartaglia
- **Example group activity** - Michelle McIntosh
- **Feedback activities** - Dr Andrea Begley
- **Phase II implementation plan** - Jenny Tartaglia
- **Tour of Foodbank** (time permitting/optional)



ACKNOWLEDGEMENT



GOVERNMENT OF  
WESTERN AUSTRALIA



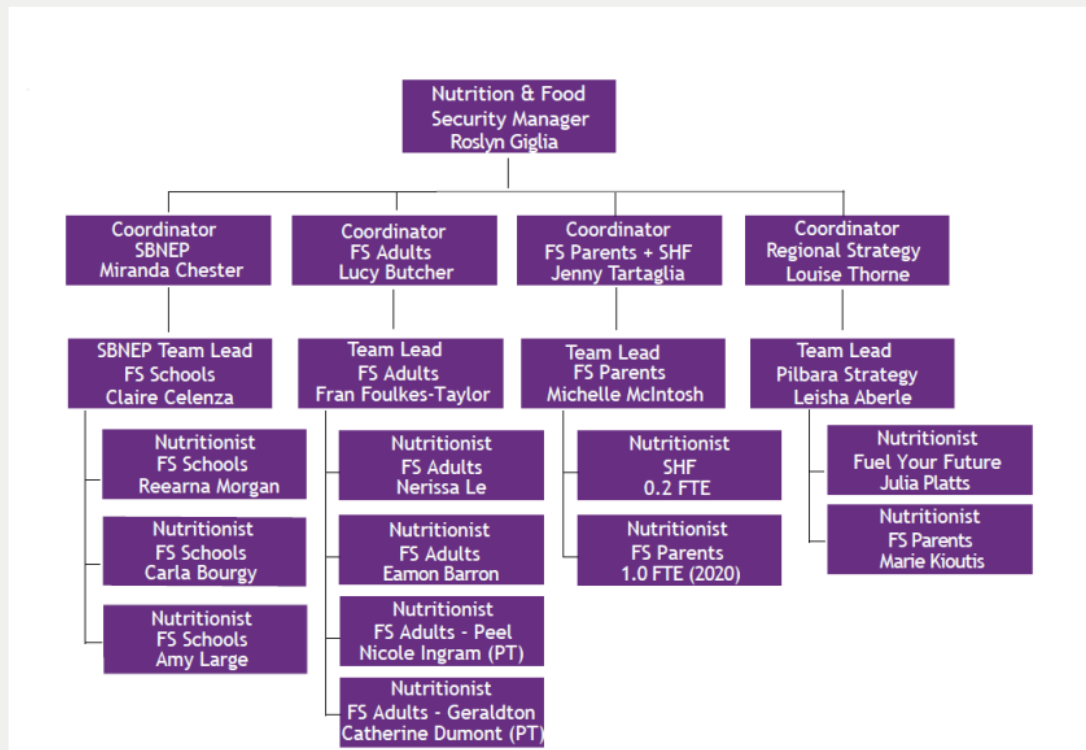




DR ROSLYN GIGLIA  
MANAGER, NUTRITION AND FOOD SECURITY



## HEALTHY FOOD FOR ALL TEAM & FOOD SENSATIONS FOR PARENTS



FS - Food Sensations

SBNEP - School Breakfast & Nutrition Education Program

SHF - Superhero Foods



## IMPROVING THE HEALTH & WELLBEING OF CHILDREN IN THE EARLY YEARS

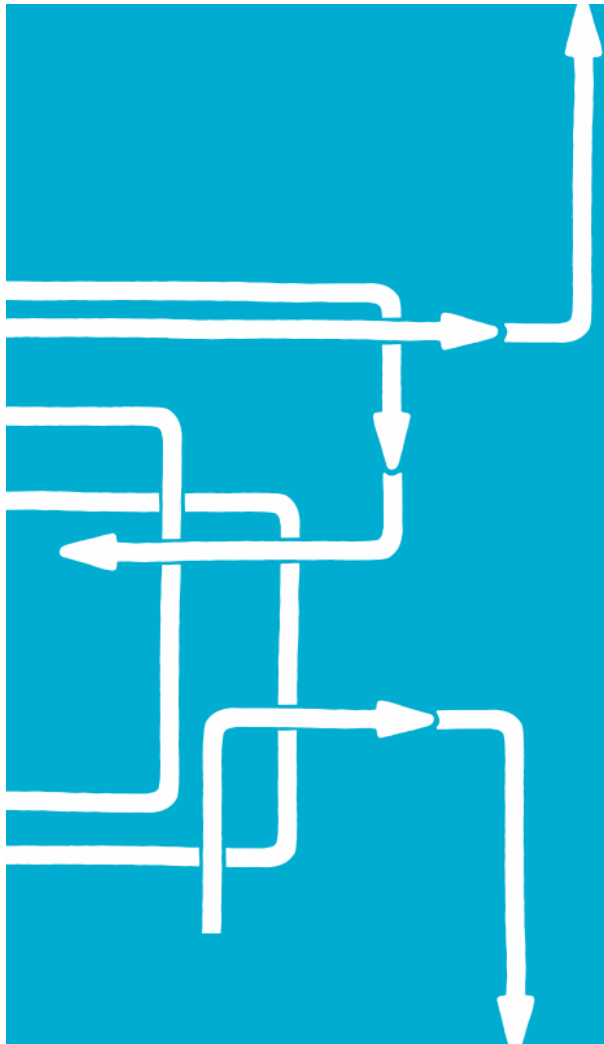
### AEDC Domains

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills (school-based)
- communication skills and general knowledge




FSP in the Pilbara






DR ANDREA BEGLEY



Curtin University



## RESEARCH PROCESSES-FORUM RESEARCH AND INFORMED CONSENT

Q1 What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?



### Nutrition

- Dietary Guidelines (breastfeeding)
- Quantities from food groups (portion sizes)
- Key stages newborn (sleep expectations)- first 1000 days
- Early solids
- Rationale for healthy eating early in life
- Fussy eaters
- Allergies
- Encouraging introduction of diverse foods
- Reduce processed foods and eat more whole foods
- Limiting discretionary foods- understanding sugar and salt in foods
- Reducing milk use as going on solid foods
- Realistic expectations



### Parenting Practices

- Parent decides on what, child decides on how much (Child decides approach)
- Understanding child development skills
- Children learn through eating, meals
- Supportive parenting practices/styles (e.g authoritative, Mum & Dad are consistent, tips for grandparents, role modelling)
- Provide calm mealtimes
- Practical tips for encouraging positive meal times
- Realistic expectations around behaviour at meal times
- Setting up for success



### Food Literacy

- Purchasing practices
- Food label reading
- Planning of meals (inc practical tips, convenience), developing & practicing menu skills around menu planning
- Food costs and budgeting- healthy eating on a budget
- Adapting recipes – making them healthier and suitable for infants
- Food preparation
- Supermarket tour (real or virtual)
- Family meal time practices
- Ideas for lunchboxes, go to snack and lunch options (convenient, easy to prepare, low cost)



### Other Considerations

- CaLD using own foods in lunchboxes etc
- Healthy birthday party foods
- Cultural/universal info graphics
- Concerns about grandparents feeding child and not creating independence
- Food marketing tricks, traps and strategies
- Acknowledge complexity of people's lives- issues with family, finances, personal health/wellbeing
- Parents sharing ideas
- Identifying childcare with healthy food practices
- How to assess credible nutrition information

## QUALITATIVE RESEARCH

- Interviews with Stakeholders working in organisations with parents
- Focus Groups with Parents
- Reviewed literature for similar research (including Healthway funded introducing solids focus groups)
- Early initiation of solid foods- desire for child development/eating family food- variability in recommendations from health professionals
- Portion size- reality of children needing smaller portions- concerns about over feeding
- Lack of autonomy and ability for children to self-regulate- parents always feeding (CaLD differences) avoiding messiness, choking concerns- need for responsive parent feeding style.
- Poorer dietary choices- lack of vegetables- parents genuinely wanting to do the best by their child but not being sure what is exactly healthy or unhealthy
- Information sources- internet/social media/apps



Article

### Mothers' Understanding of Infant Feeding Guidelines and Their Associated Practices: A Qualitative Analysis

Andrea Begley <sup>1,\*</sup>, Kyla Ringrose <sup>1</sup>, Roslyn Giglia <sup>2</sup> and Jane Scott <sup>1</sup>

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<sup>2</sup> Telethon Kids Institute, Perth 6008, Australia; Roslyn.giglia@telethonkids.org.au

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Received: 5 March 2019; Accepted: 26 March 2019; Published: 29 March 2019

**Abstract:** There is limited evidence to describe Australian mothers' understanding of the Australian Infant Feeding Guidelines (AIFG). A qualitative inductive methodological approach was used in this study to explore experiences with the introduction of solid food. Seven focus groups with 42 mothers of children aged 4–18 months were conducted in disadvantaged areas in Perth, Australia. The mean age of infants was 9.6 months and mean age of introduction of solid food was 4.3 months (range 1.2 to 7.5 months). Almost half of the mothers in this study were aware of the AIFG however, only half again could correctly identify the recommended age for introducing solid food. Four themes and nine subthemes emerged from the analysis. Themes were (1) *Every child is different* (judging signs of readiness); (2) *Everyone gives you advice* (juggling conflicting advice); (3) *Go with your gut*—(being a “good” mother); and (4) *It's not a sin to start them too early or too late*—(guidelines are advice and not requirements). The findings indicated that in spite of continued promotion of the AIFG over the past ten years achieving the around six months guideline is challenging. Professionals must address barriers and support enablers to achieving infant feeding recommendations in the design education materials and programs.

(Daniels et al 2012; Dev et al., 2017; Schuster et al, 2019)



## QUALITATIVE RESEARCH

- AIMS
- Stakeholder interviews- Identify experiences with parents and food, perceived gaps in knowledge, barriers and enablers to engaging parents in programs.
- Focus groups -Explore experiences and to assess challenges and barriers to feeding their children a healthy diet, sources of information and preferences for programs
- METHODS
- Stakeholder recruitment from Foodbank WA's existing stakeholder list and responses to media release and email communication about program funding.
- Purposeful and snowballing recruitment used
- Human Research Ethics Committee Approval-HRE2019-0167 Curtin University-written consent
- ~60 minutes- scripts developed from literature
- Parents groups 0-2 years, 2-5years-crèche provided where required
- Parents received \$20 store voucher
- Data collection until saturation of content
- Inductive analysis approach- *big ideas*

February 4, 2019



Foodbank WA has announced Healthway will fund a state-wide nutrition education program for disadvantaged parent children from 0 to 5 years of age. The new state-wide **Food Sensations for Parents Program** is a FREE nutrition & cooking program designed to provide parents with an understanding of healthy eating for their children.

Early childhood is a crucial time to establish healthy eating behaviours for optimal health, growth and cognitive development. The program will address the challenges faced by many parents in the early years and provide practical information and skills to make positive changes at meal times, to improve health outcomes for young children.

Foodbank WA Public Health Nutritionist, Jennifer Tartaglia said, "We are very excited to have the opportunity to deliver state-wide nutrition program that focuses on infant and child nutrition. The Food Sensations for Parents program is a fantastic hands-on nutrition and cooking program that will provide parents with the tools to give their children the best food and drink choices for good health."

"We recognise it is difficult for some parents, as they don't have the food budgeting and cooking skills as well as limited knowledge to ensure they can provide healthy meals for their families".

"The program tackles a wide range of topics including the food groups, label reading, fussy eating and the parents get the opportunity to cook a variety of dishes, so that they walk away with some fresh healthy ideas."

Foodbank WA's Food Sensations for Parents Program was initially established in 2016 in partnership with BHP for program delivery in the Pilbara region of WA with the generous funding from BHP. The Healthway funding will enable state-wide roll out of the program, which will benefit parents throughout WA.

For more information visit [foodbankwa.org.au](http://foodbankwa.org.au) or watch **Food Sensations for Parents** (<https://www.youtube.com/watch?v=7eMUTncsQic>) Video Highlights Food Sensations Parents Program in the Pilbara.



## STAKEHOLDER INTERVIEWS- DEMOGRAPHICS

### Stakeholder Interviews

- n = 13 interviews, n = 14 participants
- 100% female
- 15 years average working with parents
- 50% between 36-45 years of age
- 50% work for Not for Profit, 29% Non-government, 21% Government organisation
- 4 interviews in regional areas
- 43% ranked decile 1 - Relative Socio-economic Disadvantage Rank with WA (based on organisation postcode)





## STAKEHOLDER INTERVIEWS- BIG IDEAS

- **Diversity reality**
  - There's lots of CaLD families in this area...and then we get our general mums (Interview 6)
  - Particularly the families that we have access to on our client base, most families are struggling some just seem to be able to manage their food budget better than others....so food security I guess is a big deal for a lot of our families. So they don't, so they're struggling with how to nourish themselves appropriately so from a you know healthy food intake perspective and then I think it, and then so a lot of overweight. I mean we do have a number of parents who are very underweight as well, so just the whole food security thing's an issue (Interview 5)
- **Build Trust**
  - So they feel very comfortable just coming here and then that trust has been developed. So if we say something is really beneficial. They will, they will trust us in that advice. (Interview 7)



## STAKEHOLDER INTERVIEWS- BIG IDEAS

- **Best Intentions- child agency influence**
  - It'll be the kids...the parents would be very influenced by them...if there's potato chips one side and a vegetable, fruit on the other and if the child wants the chips, they'd let them have the chips (Interview 2)
  - The point is definitely that the whole family is eating those same foods....so kind of making them see that you know you don't have to have to be doing really different stuff for your kids...they can actually be having normal family foods (Interview 11)
- **Practical works**
  - "...making it real and giving them kudos that they're not stupid'." (Interview 4)
  - '... think the more you can get it as a family experience then the more likely it's going to, you know it's going to carry on because then they'll apply that positive kind of engagement with their child to lots of different contexts and then you know naturally then you're more likely to do the right. You know to do better and better because you felt good about the time that you spent. (Interview 13)



## PARENTS- DEMOGRAPHIC CHARACTERISTICS

### Focus Groups

- n = 8 focus groups
- n = 68 participants (73% response rate) -metropolitan
- 7% Males
- 51% 26-35 years of age
- 75% Couple living with children, 18% Single parent
- 93% Parent, 3% Grandparent, 4% Carer/Guardian
- 40% 1 child, 37% 2 children, 22% 3+ children
- 57% Born outside of Australia, 60% English first language
- 22% Identified as Aboriginal or Torres Strait Islander
- 15% Previously attended Foodbank WA's *Food Sensations® for Adults*

**ARE YOU A PARENT OR CARER OF A 0-5 YEAR OLD?**

Foodbank WA is developing a nutrition education and cooking program to help improve family mealtimes. We are interested in your experiences feeding children aged 0-5 and invite you to join our discussion group.

To attend, you must be a parent/carer of at least one child currently aged 0-5 years

- Morning or afternoon tea provided
- Crèche available

For more information, please contact Jenny or Michelle on 9463 3230 or email [foodsensationsparents@foodbankwa.org.au](mailto:foodsensationsparents@foodbankwa.org.au)

Confirm your attendance by calling <insert name> on <insert phone> or email <insert email>

healthway

Curtin University's Human Research Ethics Committee has approved this study (HREC-XXXX-19)

If you have any questions about the research, you can contact the supervisor Dr. Andrea Begley on 9366 2773 or [a.begley@curtin.edu.au](mailto:a.begley@curtin.edu.au)

FOOD BANK  
FIGHTING HUNGER IN AUSTRALIA



## FOCUS GROUPS- BIG IDEAS- WHAT PARENTS EXPERIENCE FEEDING THEIR CHILDREN

- Feeding kids is *emotional and exhausting*
  - I try every day, I try every day. Both the kids, mum I don't like it...we don't like yeah. I cook and I like to cook every day but sometime the kids don't like it (Focus Group 6)
  - I think as a parent, you know choking, you know gosh have I done something wrong, have I done something right but really and truly I think it's probably just you know you worry as a parent, having a baby, it's a new, you know it's a whole new world and then you're going to feed them. (Focus Group 5)
- Eating "*enough*" food
  - I think I found, like I used to go on just like Google whatever, like in terms of who much a baby's supposed to eat especially in the beginning 'cause he wasn't eating a lot and I think it was making me more worried like 'cause he wasn't eating what they said (Focus Group 7)
- Decisions around food is *child focused*
  - My kids don't like anything in sauce. They like their plain veggies and their meat. If I make it into a casserole she'll kind of eat it, [name] he'll try it but then they're like nah...(Focus Group 2)



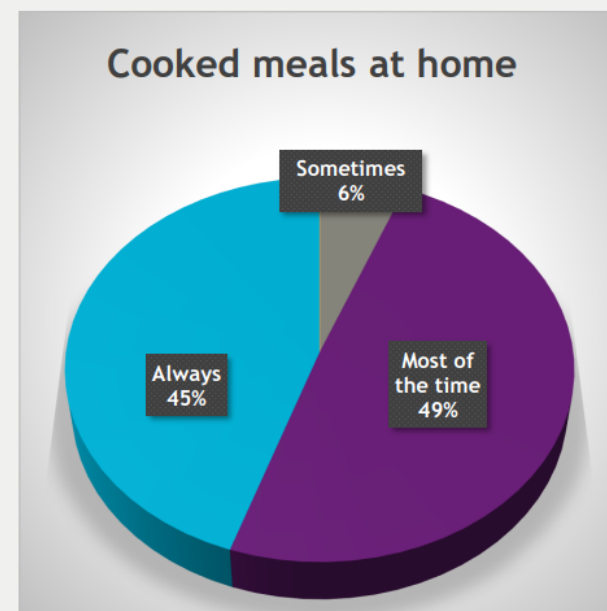
## FOCUS GROUPS- WHAT PARENTS EXPERIENCE FEEDING THEIR CHILDREN

- Parents *manipulate* children to eat “healthy”
  - Absolutely refused dinner, refused going in that chair. I literally, ‘cause my son they were two years gap, I put her in bath seat in the bath and I sat there distracting her feeding her while she was in the bath.....That’s how I started doing it as well...That’s how I had to do my daughter....Hey it was cleaner...When they get the packet and they’re like shush it’s in the bath. (Focus Group 1)
- *Do as I say not as I do*
  - And I don’t make it for myself ‘cause I just get the whole thing of ok I seen it I don’t feel hungry anymore. I don’t eat it myself so then they’re not also seeing me eat and I know that’s a bad thing for them. (Focus Group 2)
- *Making feeding quick and easy*
  - But yeah a lot of the times they just, they’re at breaking point already. It’s late in the day, they may be tired. And that’s one of the big things for me. Like I know what I want to make them, what I want to feed them but half the time it’s a mad dash to put something that resembles nutrition. (Focus Group 7)
  - I buy a lot of jar food. I know it’s lazy but I do, I just do not get time sometimes. Whatever works. And they seem to have a lot more variety than like than what I do. (Focus Group 1)



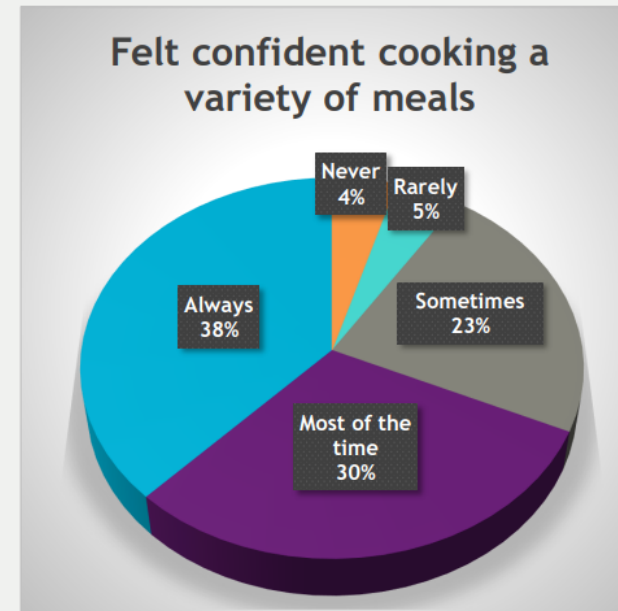
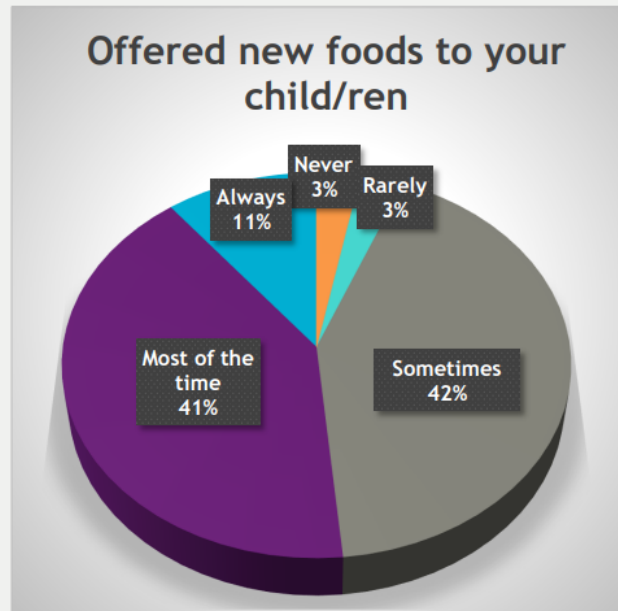
## PARENTS- MEAL TIME AND FOOD LITERACY BEHAVIOURS

*How often have you or someone in your household done the following actions in the last month?*



## PARENTS- MEAL TIME AND FOOD LITERACY BEHAVIOURS

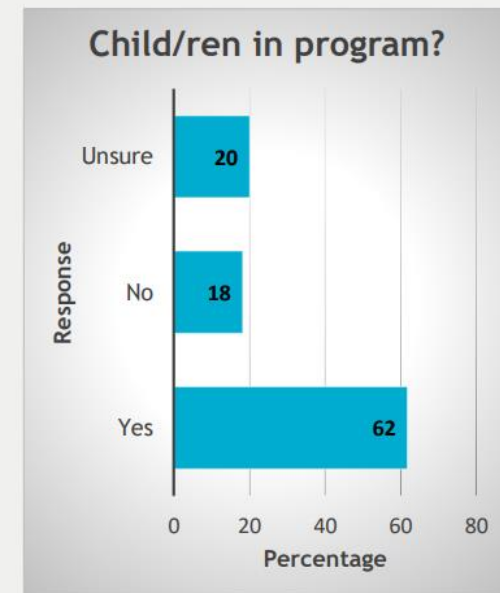
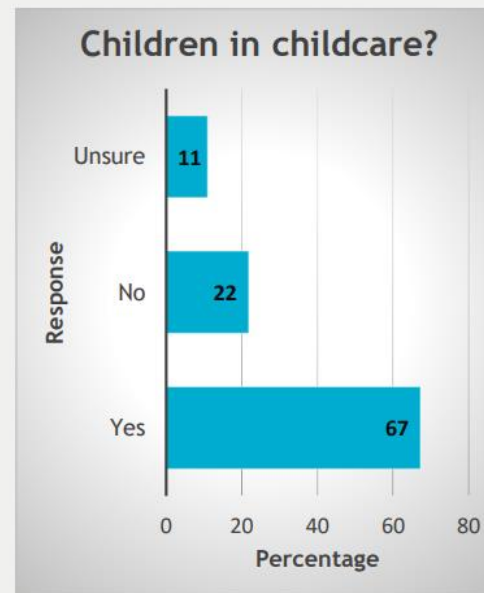
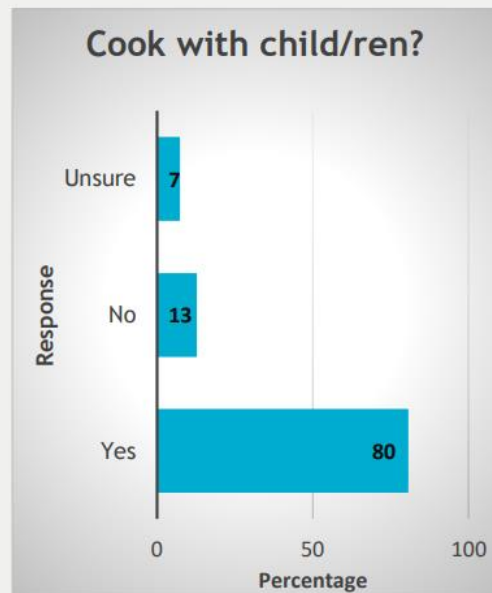
*How often have you or someone in your household done the following actions in the last month?*



## PARENTS- PROGRAM INTEREST

### Interest in a nutrition and cooking program for parents. Parents said...

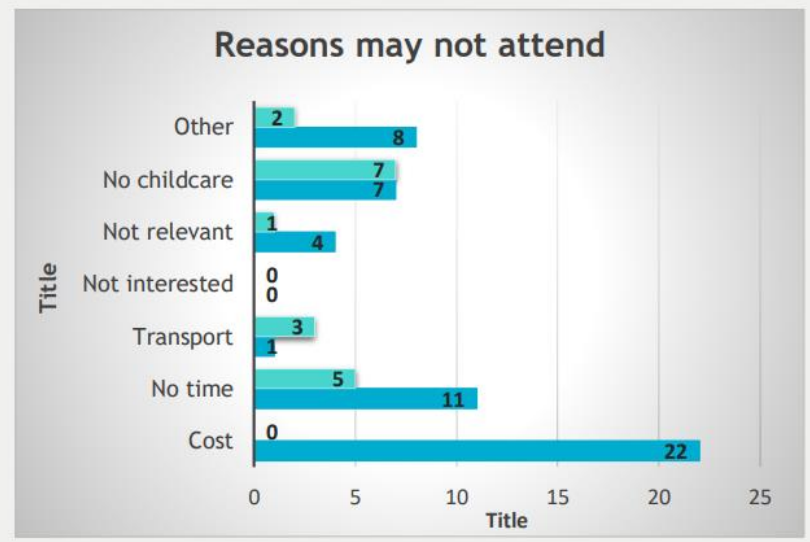
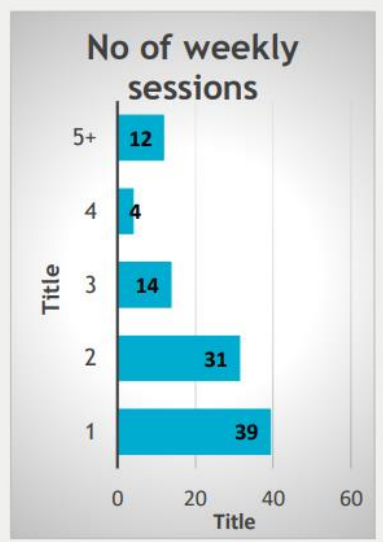
- 77% are interested in a program.





## PARENTS- PROGRAM INTEREST

Interest in a nutrition and cooking program for parents. Parents said...

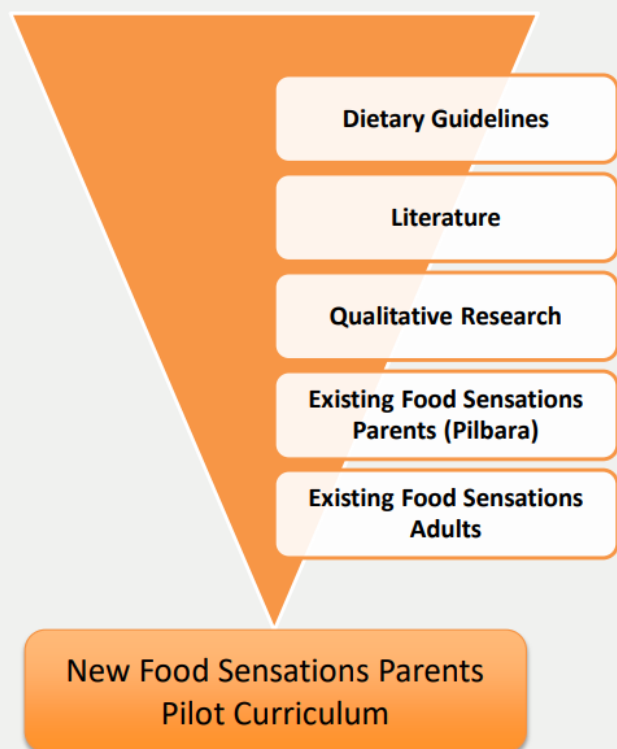




JENNY TARTAGLIA  
FOOD SENSATIONS PARENTS  
PILOT OVERVIEW



## PILOT PROGRAM DEVELOPMENT



### Example program from the literature

Cooking Matters for Families – Family centred approach

- Low-income communities Minneapolis USA (2014-2016)
- Parent-child pairs (9-12 years)
- Vegetable focus
- 6 x 2 hours cooking skills, nutrition education sessions
- Social cognitive theory – self efficacy
- Experiential learning activities, exposure, variety, improve attitudes, increase home availability = increase vegetable consumption
- Results – increase parental cooking confidence, healthy food preparation, child self-efficacy, vegetable variety and home vegetable availability.
- *Overcash, F., Ritter, A., Mann, T., Mykerezzi, E., Redden, J., Rendahl, A., . Reicks, M. (2018). Impacts of a Vegetable Cooking Skills Program Among Low-Income Parents and Children. J Nutr Educ Behav, 50(8), 795-802.*



PILOT PROGRAM OVERVIEW



Week 1 - Getting started



Week 2 - Learning to eat



Week 3 - Family Mealtimes



Week 4 - Food on the move



Week 5 -Feeding the family





GROUP ACTIVITY - HANDS ON LEARNING

*IS HEALTHY FOOD MORE EXPENSIVE  
THAN DISCRETIONARY FOOD?*



## SHOPPING TROLLEY ACTIVITY - IS HEALTHY FOOD MORE EXPENSIVE?



**Healthy**  
Five food groups

- Each group has a **Healthy** OR a **Unhealthy/Convenience** Trolley
- Spend \$30 to buy food for your family (2 adults and 2 children) for breakfast, lunch and dinner for one day.
- Include snacks if you have money.
- Use **unit pricing** to compare value for money.
- Add up the value of each trolley.



**Unhealthy**  
Discretionary & convenience meals



## SHOPPING TROLLEY ACTIVITY - COMPARISON



### Healthy Five food groups



### Unhealthy Discretionary & convenience





# EXPERT STAKEHOLDER CONSENSUS





## RESEARCH PROCESSES-FORUM RESEARCH AND INFORMED CONSENT

**Q1 What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?**



### Nutrition

- Dietary Guidelines (breastfeeding)
- Quantities from food groups (portion sizes)
- Key stages newborn (sleep expectations)- first 1000 days
- Early solids
- Rationale for healthy eating early in life
- Fussy eaters
- Allergies
- Encouraging introduction of diverse foods
- Reduce processed foods and eat more whole foods
- Limiting discretionary foods- understanding sugar and salt in foods
- Reducing milk use as going on solid foods
- Realistic expectations



### Parenting Practices

- Parent decides on what, child decides on how much (Child decides approach)
- Understanding child development skills
- Children learn through eating, meals
- Supportive parenting practices/styles (e.g authoritative, Mum & Dad are consistent, tips for grandparents, role modelling)
- Provide calm mealtimes
- Practical tips for encouraging positive meal times
- Realistic expectations around behaviour at meal times
- Setting up for success



### Food Literacy

- Purchasing practices
- Food label reading
- Planning of meals (inc practical tips, convenience), developing & practicing menu skills around menu planning
- Food costs and budgeting- healthy eating on a budget
- Adapting recipes – making them healthier and suitable for infants
- Food preparation
- Supermarket tour (real or virtual)
- Family meal time practices
- Ideas for lunchboxes, go to snack and lunch options (convenient, easy to prepare, low cost)

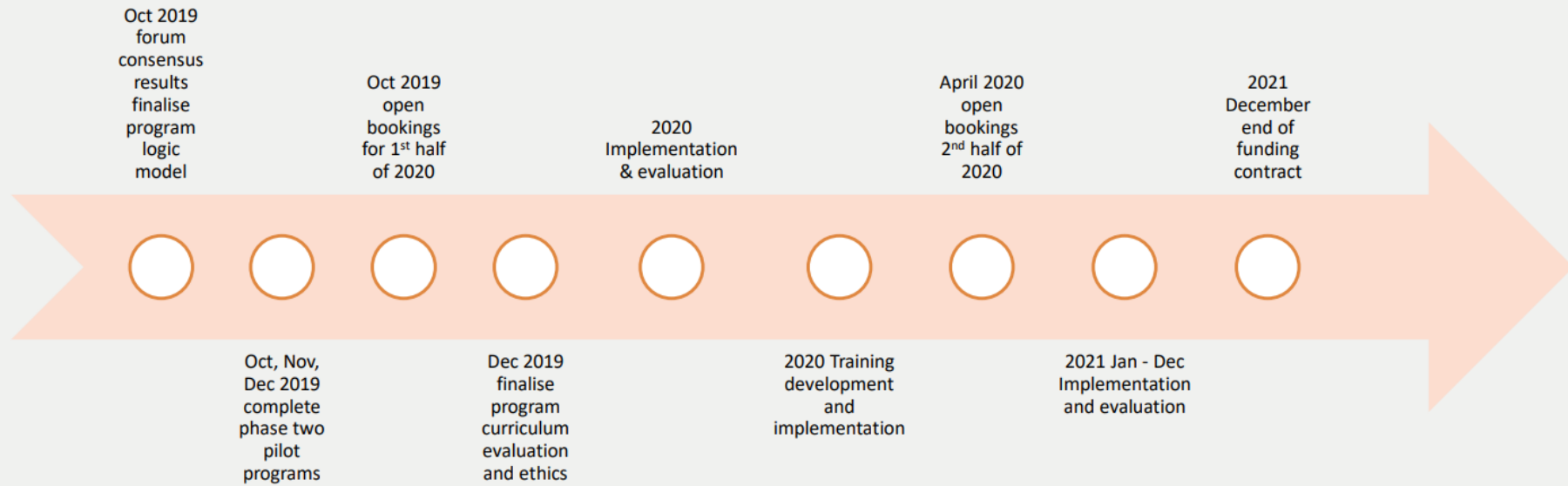


### Other Considerations

- CaLD using own foods in lunchboxes etc
- Healthy birthday party foods
- Cultural/universal info graphics
- Concerns about grandparents feeding child and not creating independence
- Food marketing tricks, traps and strategies
- Acknowledge complexity of people's lives- issues with family, finances, personal health/wellbeing
- Parents sharing ideas
- Identifying childcare with healthy food practices
- How to assess credible nutrition information

## NEXT STEPS

### Food Sensations Parents timeline



## CONCLUSION

We welcome any further feedback.  
Please hand your comments sheet to a Michelle or myself.

Thank you!



## Appendix F. Stakeholder Forum Recruitment Email

Dear Stakeholder,

You have recently accepted an invitation to attend the half-day forum (Thursday 3<sup>rd</sup> October) as part of the development process for the new *Food Sensations*® for Parents program. Foodbank WA are developing a suite of food literacy focused programs under their *Food Sensations* banner. Food literacy relates to behaviours required for the planning and management, selection, preparation and cooking and eating of healthy foods.

Foodbank WA have received funding from Healthway to develop this program. My role is to provide external evaluator services. In addition, Jenny Tartaglia as the program coordinator has successfully achieved candidacy for the Master of Philosophy at Curtin University.

The forum will present the formative research collected this year and a draft of the program. As part of the forum processes, we would like to collect the opinions discussed to use as consensus data for the overall evaluation and a key stage in Jenny's Masters research project.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HRE2019-0167-05). We invite you to read the attached research information sheet and consent form. We ask that you consent to us using your contributions to discussion at the forum in the research process in developing consensus on the objectives, curriculum, direction and training options for the new *Food Sensations* for Parents program.

Before the forum we invite you to consider the questions below based on your experiences as a starting point for consensus building and record your responses anonymously using the online link below. We will use the responses as a starting point in developing consensus.

**Based your opinion what are the main nutrition-related behaviours to be addressed in a food literacy program for parents of 0 to 5 year olds?**

[https://curtin.au1.qualtrics.com/jfe/form/SV\\_3Po9WFqXWUDooQJ](https://curtin.au1.qualtrics.com/jfe/form/SV_3Po9WFqXWUDooQJ)

Please advise me if you wish to withdraw consent for us to use your contributions to discussion. Your participation in the forum is valued and is not comprised if you choose not to consent to the use of your opinions as part of the research processes being used to develop the program.

If you have any questions, please contact me.

Looking forward to seeing you on the 3rd October.

Yours sincerely,

**Dr Andrea Begley AdvAPD**

DrPH, MPH, Grad Dip Diet, BAppSc (Nutr & Food Sc)

**Senior Lecturer | School of Public Health- Food and Nutrition**

**Curtin University**

**Tel |** +61 8 9266 2773

**Fax |** +61 8 9266 2598

**Email |** [a.begley@curtin.edu.au](mailto:a.begley@curtin.edu.au)

**Web |** [www.curtin.edu.au](http://www.curtin.edu.au)

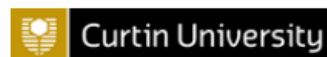


Attachments

- Research Information Sheet
- Consent Form

## Appendix G. Stakeholder Forum Information Sheet

Development of the Food Sensations for Parents Program



### PARTICIPANT INFORMATION SHEET Development and Evaluation of the *Food Sensations*® for Parents Program Stakeholder Forum

Student Investigator: Jenny Tartaglia (Masters)  
Investigator: Dr Andrea Begley, Senior Lecturer

#### What is the project about?

- Curtin University providing the external evaluation for Foodbank WA's development of a new food literacy program for parents.
- This research has been funded by Healthway 2019 -2021 and will help provide Foodbank WA. The program will be called *Food Sensations for Parents*.
- The project is being conducted by Masters Candidate Jenny Tartaglia and her supervisor Dr Andrea Begley.



#### Why am I being asked to take part and what will I have to do?

- We have invited a range of stakeholders with expertise in either the nutrition and health promotion areas of parents with children aged 0 to 5 years or who work primary with parents with children aged 0 to 5 years older to a half day forum to discuss the progress of the research including interviews and focus groups results and the drafting and piloting of a new program.
- At the forum should we would like to record participant responses to the findings to date and use these as part of the research process. We will ask your opinions on the nutrition education priorities for children in the 0-5 year age group and their parents using nominal group techniques.
- We will make a digital audio recording so we can concentrate on what you have to say and not distract ourselves with taking notes. After the interview we will use the recording to confirm the main ideas from participants at the forum and will send a summary of the main ideas to all participants.
- There will be no cost to you for taking part in this research and you will not be paid for taking part. There are no immediate benefits to your participation but your responses will be collated to assist Foodbank WA to develop a parent program that may be of use to your organization and benefit your clients.

#### Are there any risks or inconveniences from being in the research project?

- There are no foreseeable risks from this research project.

#### Who will have access to my information?

- All information you provide will remain confidential and stored securely at Curtin University. Electronic data will be pass-word protected. The information we collect in this study will be kept under secure conditions at Curtin University for 7 years after the research is published and then it will be destroyed.
- Standard procedures for data collection will be employed to minimise the risk to subject confidentiality. We ask the discussion at the forum remains confidential and that participants maintain respect for the discussion and not repeat findings outside the forum that may embarrass or upset other participants.
- The information collected in this research will be re-identifiable (coded). This means that we will collect data that can identify you, but will then remove identifying information on any data or sample and

#### Development of the Food Sensations for Parents Program

replace it with a code when we analyse the data. Only the research team have access to the code. Reports describing the results of the research will not reveal the identity of any participant.

- Any information we collect will be treated as confidential and used only in this project unless otherwise specified. The following people will have access to the information we collect in this research: the research team and, in the event of an audit or investigation, staff from the Curtin University Office of Research and Development.
- We may use ideas from the forum but no names will be associated with any quotes in association with any publications or presentations.

#### Will you tell me the results of the research?

- We will write to you at the end of the research (in about 5 months) and let you know the results of the research. Results will not be individual but based on all the information we collect and review as part of the research.
- Findings from this research will be disseminated in report format and published in relevant professional journals. Presentations will be made at appropriate professional conferences and you will be provided with the publications on the outcomes of the research if you choose.

#### Do I have to take part in the research project?

- Participation in this study is voluntary. You may choose not to answer any of the questions during the forum or you may decide to stop participating in this research at any time even when you have already consented to participate.
- If you decide not to take part in this research or if you decide to withdraw you can still participate in the forum and continue to receive full services from the University and Foodbank WA.
- There are no expected adverse effects from your participation in this research.

#### What happens next and who can I contact about the study?

- If you decide to take part in this research we will ask you to sign the consent form. By signing it is telling us that you understand what you have read and what has been discussed. Signing the consent indicates that you agree to be in the research project and have your information used as described. Please take your time and ask any questions you have before you decide what to do. You will be given a copy of this information and the consent form to keep.
- If you have any questions you can contact the evaluator Dr Andrea Begley on 9266 2773 or [a.begley@curtin.edu.au](mailto:a.begley@curtin.edu.au). Your participation and involvement will be greatly appreciated and we thank you in anticipation of your assistance.

#### Ethics Approval

Curtin University's Human Research Ethics Committee has approved this study (HRE2019-0167-05). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email [hrec@curtin.edu.au](mailto:hrec@curtin.edu.au).

## Appendix H. Forum Consent Form

### Development of Food Sensations for Parents



|   |
|---|
| <p><b>Consent Form</b></p> <p>Development and Evaluation of <i>Food Sensations</i><sup>®</sup> for Parents Program</p> <p>Stakeholder Forum</p> <p>Student Investigator: Jenny Tartaglia (Masters)</p> <p>Chief Investigator: Dr Andrea Begley, Senior Lecturer</p> |
|---|

- I have read the Participant Information Sheet version 1 and I understand its contents.
- I believe I understand the purpose, extent and possible risks of my involvement in this research project.
- My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.
- My participation is voluntary and I have the right to withdraw from the study at any time and to decline to answer any particular questions or have my discussion removed from the record.
- I agree to the forum being digitally audio recorded.
- Any information which might potentially identify me will not be used in published material.
- My name will not be used without my permission and that the information I provide will be used only for this study and publications arising from it.
- I agree to participate in the forum to inform the development of the *Food Sensations for Parents Program*.

|                       |  |
|-----------------------|--|
| Participant Name      |  |
| Participant Signature |  |
| Date                  |  |



Declaration by researcher: I have supplied an Information Sheet and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent and possible risks of their involvement in this project.

|                      |  |
|----------------------|--|
| Researcher Name      |  |
| Researcher Signature |  |
| Date                 |  |

## Appendix I. Food Sensations for Parents pre/post surveys

### Food Sensations® for Parents Start of Program Questions

Initials: \_\_\_\_\_



These questions ask about how you plan and prepare food for you and/or your family. Think about how you usually do things. Put a tick (✓) in the box that is the best answer for each question.

#### 1 How often have you done the following actions in the last month?

1. **Plan meals ahead of time?**  
 Never  Rarely  Sometimes  Most of the time  Always
2. **Make a list before you go shopping?**  
 Never  Rarely  Sometimes  Most of the time  Always
3. **Plan meals to include all food groups?**  
 Never  Rarely  Sometimes  Most of the time  Always
4. **Plan to keep food safe when transporting outside of the home?**  
 Never  Rarely  Sometimes  Most of the time  Always
5. **Use a nutrition information panel to make food choices?**  
 Never  Rarely  Sometimes  Most of the time  Always
6. **Compare unit prices of foods to select low cost healthy foods?**  
 Never  Rarely  Sometimes  Most of the time  Always
7. **Think about healthy food choices when deciding what to eat?**  
 Never  Rarely  Sometimes  Most of the time  Always
8. **Change recipes to make them healthier?**  
 Never  Rarely  Sometimes  Most of the time  Always

#### 2 How often have you felt confident with the following actions in the last month?

1. **Managing your money to buy healthy food?**  
 Never  Rarely  Sometimes  Most of the time  Always
2. **Selecting low cost healthy foods?**  
 Never  Rarely  Sometimes  Most of the time  Always
3. **Cooking a variety of healthy meals?**  
 Never  Rarely  Sometimes  Most of the time  Always
4. **Making changes in your food choices?**  
 Never  Rarely  Sometimes  Most of the time  Always
5. **Keeping my food safe to avoid food poisoning?**  
 Never  Rarely  Sometimes  Most of the time  Always

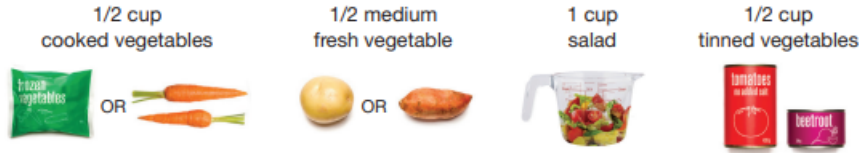


**3** In thinking about a child or children under 5 years in your care - How often have you done the following actions in the **last month**?

1. Allow my child to choose the food they want to eat from food already prepared?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
2. Prepare a different meal for my child from the family meal?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
3. Serve something else for a meal or snack if my child does not like what is served?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
4. Model healthy eating for my child by eating healthy food myself?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
5. Eat a meal with my child?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
6. Hand feed my child (over 12 months)?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
7. Let my child serve her/himself?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
8. Distract (e.g. use electronic devices), praise or play with my child to get them to finish their food?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
9. Let my child eat whenever they want?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
10. Discuss with my child why it is important to eat healthy foods?  
 N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)

## ADULT

- 4 Look at the examples in the pictures below which show a serve size.  
1 serve of vegetables =

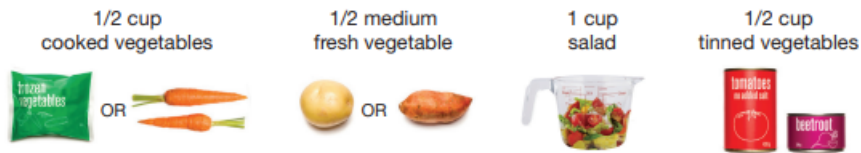


How many **servings of vegetables** do **YOU** usually eat **each day**?

|                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0 serve                  | 1/2 serve                | 1 serve                  | 1 1/2 serves             | 2 serves                 | 2 1/2 serves             | 3 serves                 | 3 1/2 serves             | 4 serves                 | 4 1/2 serves             | 5 or more serves         |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## CHILD

Look at the examples in the pictures below which show a serve size.  
1 serve of vegetables =



How many **servings of vegetables** does **YOUR CHILD** usually eat **each day**?

|                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0 serve                  | 1/2 serve                | 1 serve                  | 1 1/2 serves             | 2 serves                 | 2 1/2 serves             | 3 serves                 | 3 1/2 serves             | 4 serves                 | 4 1/2 serves             | 5 or more serves         |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**5** These questions help us describe who is attending *Food Sensations for Parents*.

**Are you?** Male  Female  Other

**How old are you?**

18-25  26-35  36-45  46-55  56-65  66 and over

**What is your postcode?** \_\_\_\_\_

**Are you a?** Parent  Carer/Guardian  Grandparent  Other

**How many children do you have or care for under the age of 18?**

1  2  3  4  5  6+

**Which age groups are your children under 5?**

<12 months  13-18 months  19-23 months  2-3 years  3-4 years  4-5 years

**Who lives in your house more than half of the time? (Select the best answer)**

Single parent living with child/children

Couple living with child/children

Extended family

Carer/Guardian/Grandparent caring for children

Other (describe)  \_\_\_\_\_

**What is the highest level of education you have completed?**

Primary or some high school

Finished high school (leaving)

Trade/apprenticeship

Certificate or diploma

Bachelor degree or higher

Other (describe)  \_\_\_\_\_

**What is your employment status?**

Full-time  Part-time  Casual  Unemployed  Unable to work

Household duties  Retired  Volunteer  Other \_\_\_\_\_

**Is English your first language?** Yes  No

**Do you identify as Aboriginal or Torres Strait Islander?** Yes  No

**Please check you have answered all questions.**



# Food Sensations® for Parents

## End of Program Questions

Initials: \_\_\_\_\_



These questions ask about how you plan and prepare food for you and/or your family. Think about how you usually do things. Put a tick (✓) in the box that is the best answer for each question.

### 1 How often have you done the following actions in the last month?

1. **Plan meals ahead of time?**  
 Never  Rarely  Sometimes  Most of the time  Always
2. **Make a list before you go shopping?**  
 Never  Rarely  Sometimes  Most of the time  Always
3. **Plan meals to include all food groups?**  
 Never  Rarely  Sometimes  Most of the time  Always
4. **Plan to keep food safe when transporting outside of the home?**  
 Never  Rarely  Sometimes  Most of the time  Always
5. **Use a nutrition information panel to make food choices?**  
 Never  Rarely  Sometimes  Most of the time  Always
6. **Compare unit prices of foods to select low cost healthy foods?**  
 Never  Rarely  Sometimes  Most of the time  Always
7. **Think about healthy food choices when deciding what to eat?**  
 Never  Rarely  Sometimes  Most of the time  Always
8. **Change recipes to make them healthier?**  
 Never  Rarely  Sometimes  Most of the time  Always

### 2 How often have you felt confident with the following actions in the last month?

1. **Managing your money to buy healthy food?**  
 Never  Rarely  Sometimes  Most of the time  Always
2. **Selecting low cost healthy foods?**  
 Never  Rarely  Sometimes  Most of the time  Always
3. **Cooking a variety of healthy meals?**  
 Never  Rarely  Sometimes  Most of the time  Always
4. **Making changes in your food choices?**  
 Never  Rarely  Sometimes  Most of the time  Always
5. **Keeping my food safe to avoid food poisoning?**  
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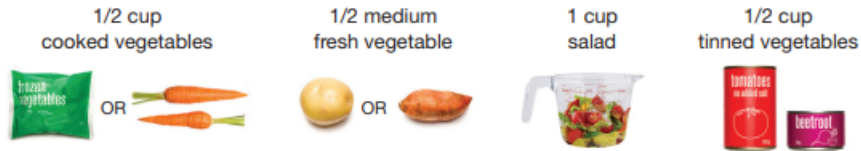


**3** In thinking about a child or children under 5 years in your care - How often have you done the following actions in the **last month**?

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(child under 6 months)
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N/A  Never  Rarely  Sometimes  Most of the time  Always   
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3. Serve something else for a meal or snack if my child does not like what is served?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
4. Model healthy eating for my child by eating healthy food myself?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
5. Eat a meal with my child?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
6. Hand feed my child (over 12 months)?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
7. Let my child serve her/himself?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
8. Distract (e.g. use electronic devices), praise or play with my child to get them to finish their food?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
9. Let my child eat **whenever** they want?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)
10. Discuss with my child why it is important to eat healthy foods?  
N/A  Never  Rarely  Sometimes  Most of the time  Always   
(child under 6 months)

## ADULT

- 4 Look at the examples in the pictures below which show a serve size.  
1 serve of vegetables =

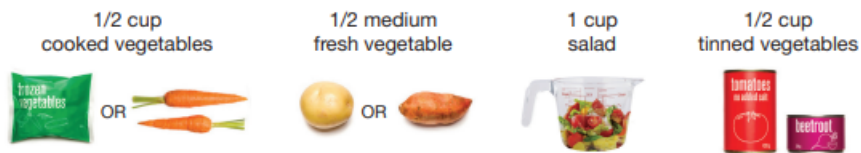


How many **serve**s of vegetables do **YOU** usually eat **each day**?

|                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0 serve                  | 1/2 serve                | 1 serve                  | 1 1/2 serves             | 2 serves                 | 2 1/2 serves             | 3 serves                 | 3 1/2 serves             | 4 serves                 | 4 1/2 serves             | 5 or more serves         |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## CHILD

- Look at the examples in the pictures below which show a serve size.  
1 serve of vegetables =



How many **serve**s of vegetables does **YOUR CHILD** usually eat **each day**?

|                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0 serve                  | 1/2 serve                | 1 serve                  | 1 1/2 serves             | 2 serves                 | 2 1/2 serves             | 3 serves                 | 3 1/2 serves             | 4 serves                 | 4 1/2 serves             | 5 or more serves         |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- 5 What **goals** did you set yourself at the start of the program?

---



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6 What **changes** have you made based on your goals?

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7 Have you shared any of the program materials with family or friends or others?

Yes  No  Not yet

8 What have you **most liked** about *Food Sensations for Parents*?

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9 Do you have any **suggestions for improvement** of *Food Sensations for Parents*?

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We would like to contact you in 3 months' time to ask about your experiences with *Food Sensations for Parents*. This survey will only take 5 to 10 minutes and you will be given a \$20 supermarket voucher to thank you for your time.

We can send you a survey by email to complete online or we can post you a paper survey or we can ring you. **Please indicate how you'd like to complete the survey**

- Send by email and I'll complete online
- Send me a paper copy with replied paid envelope
- Ring me to complete over the phone

Please provide your name and contact details

Name:

---

Email:

Phone No:

---

Mailing address:

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(All details provided are confidential)

**Please check you have answered all questions!**

Thank you for completing this survey and please return to the Foodbank WA staff member.



## Appendix J. Results from stakeholder forum discussion and implications for pilot program

|   | <b>KEY: Black text online survey</b><br><b>Blue text forum feedback</b>   | Action required  |  |  |
|---|---|--|--|--|
|   |   | Need (include)   | Nice (for consideration)   | Include in program resources<br>Not in program scope   |
| <b>Nutrition Topics – <i>What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</i></b> |   |  |  |  |
| <b>Evidence/Importance</b>  | Rationale for establishing healthy eating patterns early in life.<br>Link between nutrition and behaviour.<br><i>Importance of healthy choices.</i><br><i>Focus on developing independent eaters.</i>   | Most of this is covered already. I will review the literature and see what evidence there is in regards to links food/child behaviour.   |  | Each weeks topics to be included in a program booklet (highly visual/infographic style) together with recipes. |
| <b>Types of food and drinks</b>   | Australian Dietary Guidelines (ADGs), healthy eating encouraging introduction of diverse food particularly in the first 1000 days.<br>Australian Dietary Guidelines (including breastfeeding) & Australian Guide to Healthy Eating (AGTHE).<br>Basic information on how to reduce processed foods and eat more whole food.<br>Fruit juice a source of free sugars.<br>Importance of healthy | Contact the Oral Health Promotion team at Dental Health Department of Health (DOH) to determine what current resources exist that can be used as handouts.<br>Milk – include in Week 2 child development nutrition. Include examples of infant | Address specific needs of group at time of booking program. Set up online booking form with option to include special concern e.g., infant bottles beyond 12 months. | Yes  |

| KEY: Black text online survey<br>Blue text forum feedback  | Action required  |  |                              |                      |
|--|--|--|------------------------------|----------------------|
|  | Need (include)   | Nice (for consideration)   | Include in program resources | Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |  |  |                              |                      |
|  | <p>choices.</p> <p>Understanding sugar and salts in foods.</p> <p>Inappropriate drinks and foods for children.</p> <p>Quantity of milk recommended – how to stop bottles.</p> <p>Parents perception that commercial baby foods provide more variety.</p> <p>Sugary drinks and tooth decay link – adding honey to water bottles – milk before bed time.</p> <p>Importance and sources of iron rich first foods when introducing solids.</p> <p>Knowing more about early solids.</p> | <p>bottles filled with discretionary foods.</p>  |                              |                      |
| <b>Introducing Solids</b>  | <p>Milk use reducing as going on to solid foods but many cultures still give children up to one litre a day and the child is <i>healthy happy baby</i> won't eat food.</p> <p>The importance of iron rich</p>  | <p>Research visual handout for signs of readiness for solids to include as hand out.</p> | Yes                          |                      |

|  | KEY: Black text online survey<br>Blue text forum feedback  | Action required |  |   |
|--|--|-----------------|--|---|
|  |  | Need (include)  | Nice (for consideration)   | Include in program resources<br>Not in program scope  |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |  |                 |  |   |
| <b>Textures</b>  | <p>first foods.<br/>Signs of readiness for solids – resource/visual handout.<br/>Importance of texture progression (e.g., lumpy food). Linking the choking/chewing/gag reflex back to the right textures for age groups e.g., when weaning what is the right food textures for each stage 4-5 months, 6-8 months, 8-12 and so forth.<br/>The correct size of chunkier foods it doesn't get stuck (e.g., sized of a 20c piece).<br/>Emphasis on realistic expectations and key nutrition goals around key stages from feeding a newborn (and sleep expectations).</p> |                 | Demonstrate squeezing out pouch of baby food at session (not so appealing impact). | Yes   |
| <b>Development stages</b>  | <p>Understanding the child development skills children learn through eating, meals.<br/>Impact of types of food (e.g., pouches on development of</p>   |                 |  | Yes<br>Sleep expectations – not relevant for program. |

| KEY: Black text online survey<br>Blue text forum feedback  | Action required   |   |   |                      |
|--|---|---|---|----------------------|
|  | Need (include)  | Nice (for consideration)  | Include in program resources  | Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |   |   |   |                      |
|  | chewing, speech, tooth decay.<br>key stages in first 1000 days).  |   |   |                      |
| <b>Allergies</b>   | Allergies   | Already covered.  | The Australasian Society of Clinical Immunology and Allergy (ASCIA) resources is very high literacy. Research another handout more pictorial for lower levels of literacy. Include ASCIA website link on handout. | Yes                  |
| <b>Quantity</b>  | Quantities from each food group.<br>Understanding food portion sizes and portion control.   | Already covered.  |   | Yes                  |
| <b>Cultural/Traditional foods</b>  | For Culturally and Linguistically Diverse (CALD) families introducing their own culture foods into lunch boxes.<br>Include CALD specific food pictures in activities e.g., roti, chapati, lentils, spices, Halal foods. | Add in more CALD food pictures into activities. Specific needs for group to be collected with booking sheet as above. |   | Yes                  |

| KEY: Black text online survey<br>Blue text forum feedback  |   | Action required  |   |                              |                      |
|--|---|------------------|---|------------------------------|----------------------|
|  |   | Need (include)   | Nice (for consideration)  | Include in program resources | Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |   |                  |   |                              |                      |
| <b>Occasions</b>   | Child play dates and birthday parties. Healthy birthday party foods.  |                  | Research/create a resource with these as ideas to use as a handout.                         |                              |                      |
| <b>Fussy eating</b>  | Fussy eaters  | Already covered. |   | Yes                          |                      |
| <b>Parenting Practices</b>   |   |                  |   |                              |                      |
| <b>Division or Responsibility</b>  | Parent provides, child decides approach (e.g., non-coercive feeding).<br>Parent decides on what; child decides on how much.<br>Parents provide, children decide.                                | Already covered. |   | Yes                          |                      |
| <b>Exposure</b>  | Repeated exposure of new foods when introducing solids.   | Already covered. |   | Yes                          |                      |
| <b>Role Modelling</b>  | Importance of role modelling, especially fathers. Father's role in child feeding is overlooked.<br>Role modelling.<br>Role models.<br>Positive language.<br>Not labelling foods as good or bad. |                  | Target father's groups to deliver program, Research existing resources that target fathers. | Yes                          |                      |

| KEY: Black text online survey<br>Blue text forum feedback  |   | Action required                                      |  |  |
|--|---|--|--|--|
|  |   | Need (include)                                       | Nice (for consideration)   | Include in program resources<br>Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |   |  |  |  |
| <b>Positive Mealtimes</b>  | Practical tips for encouraging positive mealtime interactions.<br>Addressing and setting realistic expectations around behaviour at mealtimes.<br>Setting up for success family meal time practices and providing calm meal times.<br>Reinforce meal times as family time – remove screens (is this a key message?).                          | Already covered.                                     |  | Yes  |
| <b>Parenting styles</b>  | Supportive parenting practices/styles (e.g., authoritative; Mum and Dad are consistent).<br>Tips for grandparents.<br>Grand carers spoon feed child up to 3 years and children not independent.<br>Not using food as a reward.<br>Demonstrate how to involve children in cooking (e.g., child safe knives, stools, child friendly equipment). |  | Could include in Week 3 module, Satter Division of Responsibility of feeding framework (sDOR) activity.<br>Include parenting styles brief discussion on different types. |  |
| <b>Child Involvement</b>   |   | Already covered – encourage kids to help in kitchen. |  | Yes  |

| KEY: Black text online survey<br>Blue text forum feedback  |  | Action required  |  |                              |
|--|--|------------------|--|------------------------------|
|  |  | Need (include)   | Nice (for consideration)   | Include in program resources |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |  |                  |  |                              |
| <b>Cues</b>  | Recognising hunger and satiety cues – resources/handouts.  |                  | Child and Adolescent Health Services have included this in the <i>Baby's first Foods booklet</i> . |                              |
| <b>Family influence</b>  | Do not underestimate father's influence (emerging research) – take home materials for Dad's/Grandparents/Foster parents.   |                  | Research if any resources are currently available.   |                              |
| <b>Food literacy behaviours</b>  |  |                  |  |                              |
| <b>Planning</b>  | Particularly around developing and practicing skills around menu planning.<br>Planning of meals.<br>Menu planning & prep.<br>Food planning (including practical tips; convenience).<br>Menu planning and adapting recipes (to make healthier recipes as well as making them appropriate for infants).<br>Eating healthy on a budget. | Already covered. |  | Yes                          |



| KEY: Black text online survey<br>Blue text forum feedback  |  | Action required                                |   |  |
|--|--|--|---|--|
|  |  | Need (include)                                 | Nice (for consideration)                                | Include in program resources<br>Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |  |  |   |  |
| <b>Managing</b>  | Budgeting, child friendly recipes.<br>Food budgeting.<br>Food costs.<br>Purchasing practices.<br>Label reading.<br>Food label reading.<br>Label reading.                                 | Already covered.                               |   | Yes  |
| <b>Selection</b>   | Being able to understand food labels.<br>Understanding food labels.<br>Alias's for sugar.<br>Go to snack and lunch options that are convenient.<br>Ideas for kids lunchboxes and snacks. | Already covered.                               |   | Yes  |
| <b>Preparation</b>   | How easy and cheap it is to make homemade baby foods.<br>Texture progression.<br>Easy to prepare and low cost.   | Already covered.                               |   | Yes  |
|  | Supermarket tour (real or virtual).  | Currently we do the shopping trolley activity. | This would be great, time permitting and size of group. | Yes  |
| <b>Other considerations and comments (specify)</b>   |  |  |   |  |

|  | KEY: Black text online survey<br>Blue text forum feedback   | Action required   |                          |  |
|--|---|---|--------------------------|--|
|  |   | Need (include)  | Nice (for consideration) | Include in program resources<br>Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |   |   |                          |  |
| <b>Cultural</b>  | Cultural/universal infographics.<br>Add cultural foods to activities/handouts x 2.<br>Facilitators/volunteers with multicultural background – multilingual, understanding of traditional foods/cooking methods. | Booking information – as above. Include more cultural foods pictures. |                          |  |
| <b>Marketing</b>   | Food marketing tricks, traps and strategies (including online).   | Already covered.  |                          |  |
| <b>External influences</b>   | Need to acknowledge the complexities of people's lives (e.g., issues with family, finances, personal health and wellbeing) – don't want to add another thing for them to be worrying about.                     | Already covered.  |                          |  |
| <b>Sharing ideas</b>   | Opportunity for parents to share their ideas and experiences with each other.   | Already covered.  |                          |  |
| <b>Childcare nutrition</b>   | Identifying childcare centres with healthy food practices.  |   |                          | Not part of program.                                 |

|  | KEY: Black text online survey<br>Blue text forum feedback   | Action required  |   |  |
|--|---|--|---|--|
|  |   | Need (include)   | Nice (for consideration)                                      | Include in program resources<br>Not in program scope |
| <b>Nutrition Topics – What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</b> |   |  |   |  |
| <b>Assessing nutrition information</b>   | How to assess credibility of nutrition information (e.g., celebrity endorsements).  | Already covered in label reading activity.   |   |  |
| <b>Resources</b>   | Idea – little aprons for kids.  |  | Nice idea for resource.                                       |  |
| <b>Promotion</b>   | How to reach parents/families that don't engage with child health nurse/Child Parent Centres – look at promoting through early years education or early learning centres. |  |   |  |
| <b>Oral Health</b>   | Lift the Lip program from Community Health Nurses.  | Yes, found this and will include as a handout.   |   |  |
| <b>Recruitment</b>   | Explore interest/need for foster carers/Grand carers.   | Already discussed with Wanslea (family support services organisation) and have contact to send program expression of interest. |   |  |
| <b>Sustainability</b>  | Consider links with Child Health services sooner rather than later.   |  | Set up meeting to discuss program before the end of the year. |  |

|   | <b>KEY: Black text online survey</b><br><b>Blue text forum feedback</b>   | Action required   |                          |  |
|---|---|---|--------------------------|--|
|   |   | Need (include)  | Nice (for consideration) | Include in program resources<br>Not in program scope |
| <b>Nutrition Topics – <i>What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</i></b> |   |   |                          |  |
| <b>Risk</b>   | Risk management plan for children trying new foods in session – ask for dietary requirements/allergies on booking form. | Discuss with Centre Managers. Discuss with participants during Week 1.                          |                          |  |
| <b>Training</b>   |   |   |                          |  |
| <b>Conducting</b>   | Those trained should commit to delivery within 3-6 months. This will ensure only those with capacity will get trained.  | Need to determine WA Country Health Services (WACHS) capacity to deliver program.               |                          |  |
|   | Collaboration with partners.  | Need to set up meeting with Ngala to discuss program delivery and training opportunities.       |                          |  |
|   | Rapport/Relationship building.  | Send expression of interest to parenting organisations to determine interest in training staff. |                          |  |
|   | Competing programs to deliver and budget (e.g., Better Health – how do  |   |                          | Not part of program.                                 |

| KEY: Black text online survey<br>Blue text forum feedback   | Need (include)  | Action required  |                              |   |
|---|---|--|------------------------------|---|
|   |   | Nice (for consideration)                                 | Include in program resources | Not in program scope                                    |
| <b>Nutrition Topics – <i>What do you think needs to be covered in a nutrition education program for parents of 0 to 5 year olds in disadvantaged areas?</i></b> |   |  |                              |   |
|   | <p>participants know which is the most useful program &amp; provides the greatest benefits).</p> <p>Strong marketing and promotion explaining learning outcomes and what participants will get out of the program.</p> <p>Online training modules available to regional staff.</p> <p>Budget for partners to deliver FSP – food, kit, creche costs.</p> |  |                              | <p>Not part of program.</p> <p>Not part of program.</p> |
| <b>Supporting</b>   | <p>Webinars/online option.</p> <p>Lesson plans.</p> <p>Infographics – one page, visual, key messages.</p>   | <p>Possibly once training scope has been determined.</p> |                              |   |

## Appendix K. Pilot Program Feedback

| SESSION  | GENERAL OBSERVATIONS  | WHAT WORKED WELL   | CHANGES REQUIRED  | PARTICIPANT QUESTIONS/COMMENTS   |
|--|---|--|---|--|
| <p><b>15/8/19 Location 1.</b></p> <p><b>Session 1</b></p> <p><b>Getting started</b></p> <p><b>(general nutrition).</b></p> | <ul style="list-style-type: none"> <li>• Nine participants attended including three fathers.</li> <li>• Cultural mix of participants.</li> <li>• One mum breast fed her 4-week old most of the time during the session.</li> <li>• One mum had her 2-year old toddler with her during the whole session.</li> <li>• No representative attended from the centre as staff were busy assisting with the crèche.</li> <li>• The eating went past the 2-hour mark as session started late, due to people putting kids in the crèche.</li> <li>• One mum had counted every new food she had introduced to her 8-month old baby – she was up to 94 foods.</li> <li>• When the food was served we saw a few parents trying to get their kids to eat, we also saw</li> </ul> | <ul style="list-style-type: none"> <li>• Lots of questions about the Australian Guide to Healthy Eating (AGTHE) activity.</li> <li>• Before eating, asking parents to choose the food without input from the children.</li> <li>• Emphasising family meals during the AGTHE activity.</li> <li>• Writing goals at the end of the session during the eating. Both facilitators were able to assist people with writing their goals.</li> <li>• Taking photos – we had some great shots of parents with their children.</li> <li>• Participants were really engaged with activities.</li> <li>• Participants enjoyed all the food prepared.</li> </ul> | <ul style="list-style-type: none"> <li>• Need more knives, forks, spoons.</li> <li>• Start on time, even if all participants are not there.</li> <li>• During ice breaker – don't use the word "partner" confusing with life partner instead use "person next to you".</li> <li>• Summarise AGTHE activity with benefits of food – protective, energy and body building.</li> <li>• Bring some Superhero Foods books and cards to entertain young children if they don't go into the crèche.</li> </ul> | <ul style="list-style-type: none"> <li>• Why do kids enjoy eating one day and change the food they will eat the next day?</li> <li>• Can kids have orange juice?</li> <li>• How many discretionary foods can adults have each day?</li> <li>• If your child is underweight, do they still need reduced fat dairy?</li> <li>• Does reduced fat milk have more sugar or added sugar?</li> <li>• Comments about additives in foods – tinned baked beans – not healthy?</li> </ul> |

| SESSION  | GENERAL OBSERVATIONS   | WHAT WORKED WELL  | CHANGES REQUIRED  | PARTICIPANT QUESTIONS/COMMENTS   |
|--|--|---|---|--|
|  | <p>parents feeding (spoon) their toddlers.</p>   |   |   |  |
| <p><b>20/8/19 Location 2.<br/>Session 1<br/>Getting started<br/>(general nutrition).</b></p> | <ul style="list-style-type: none"> <li>• 7 mums – no dads.</li> <li>• No children or babies in the session. All parents were happy for their kids to be in the crèche (they were worried their kids wouldn't want to come out of the crèche to eat).</li> <li>• Parents were confident with being in the Child Parent Centre (CPC).</li> <li>• The centre is used to Foodbank delivering programs there and they had the space ready for us to work in.</li> <li>• One parent was also involved in the focus group at this centre.</li> <li>• Participants didn't know each other.</li> <li>• Mums are cooking separate meals for different family members.</li> <li>• Underlying belief for CALD mums, that you need to be doing a lot of cooking to be a good mother.</li> </ul> | <ul style="list-style-type: none"> <li>• Large space, worked well with the group. Area is well sectioned off from crèche so it wasn't noisy.</li> <li>• Before getting the kids in to eat reinforce some of the <i>Joyful mealtimes tips</i>.</li> <li>• The activity generated lots of great questions about what is and what's not suitable.</li> <li>• Reassuring participants at the beginning that we aren't judging them and even if they aren't doing everything we recommend its ok, we are here to learn. Making sure everyone felt safe to discuss this topic was important.</li> </ul> | <ul style="list-style-type: none"> <li>• Provide additional spoons and forks for children to use, so parents don't feed them with their own cutlery.</li> </ul> | <ul style="list-style-type: none"> <li>• Queried additives in canned vegetables.</li> <li>• Is the sauce with baked beans unhealthy?</li> <li>• Does milk have added sugar?</li> </ul> |

| SESSION   | GENERAL OBSERVATIONS   | WHAT WORKED WELL   | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS  |
|---|--|--|--|---|
|   | <ul style="list-style-type: none"> <li>Tinned fruit was put into discretionary foods during AGTHE activity.</li> </ul>   |  |  |   |
| <b>22/8/19 Location 1.</b><br><b>Session 2</b><br><b>Childhood nutrition.</b> | <ul style="list-style-type: none"> <li>Only 6 out of 9 participants attended.</li> <li>One participant advised she cooked the cheesecake cups at home.</li> <li>Feedback from the CPC Manager was really positive about the week before. She commented that participants particularly liked the workbooks.</li> <li>One participant forgot their folder.</li> <li>We returned participants folder from the week before.</li> <li>One participant when eating with their child told them “eat your good food first” before they gave them a coco loco (chocolate) ball.</li> <li>Two parents fed their children with a fork.</li> </ul> | <ul style="list-style-type: none"> <li>Everyone liked their group photo.</li> <li>Feedback from centre coordinator below:</li> <li>Positives (so many but I’ve just listed a few):</li> <li>Facilitator handled conflict between participants really well.</li> <li>All questions were answered correctly and in the easy to understand format participants needed.</li> <li>Facilitator gave participants the opportunity to participate in the age group that was most appropriate for them for the sorting activity.</li> <li>Good choice of recipes (short and easy ones) for the workshop.</li> <li>AGTHE &amp; Da Rulez (group rules) were blue tacked on the wall so they were still there for reference but allowed</li> </ul> | <ul style="list-style-type: none"> <li>We didn’t discuss goals and need to remember to remind participants to revisit or set new goals.</li> <li>When eating we need to close of the area to the playroom as children were distracted and wanted to leave the table to play.</li> <li>We should ask the parents to make sure the children are seated when we eat – not walk around with food.</li> <li>We went over time with the activity, so short cooking time recipes are most appropriate during this session.</li> <li>Feedback from centre coordinator below:</li> <li>Constructive Feedback:</li> <li>Participants had questions around the Bubs group (starting solids), 6 months, about how long that time frame was. I think it would help</li> </ul> | <ul style="list-style-type: none"> <li>Lots of great questions during the activity (0-5 child development stages).</li> <li>Baked beans – do they contain lots of sugar?</li> <li>Is tinned fruit healthy for kids?</li> <li>First foods – pureed meat is not suitable.</li> <li>Peanut butter – how much can I give them, the texture is too thick, they may choke?</li> <li>How many nuts can I give them?</li> <li>Do I buy all low fat or a mix between full fat and low fat for the family?</li> <li>Can I cook using butter?</li> <li>What type of oil should I use?</li> <li>Are store bought rusks ok?</li> </ul> |



| SESSION | GENERAL OBSERVATIONS | WHAT WORKED WELL   | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS  |
|---------|----------------------|--|--|---|
|         |                      | <p>participants to focus on their activity without being overwhelmed by mess on the table.</p> | <p>instead of writing just 6 months, to put ~ 6–7 months, because that explains that its crucial to move off the silky smooth stage quickly.</p> <ul style="list-style-type: none"> <li>• The portion plates seemed very visually overwhelming when you have food on top on them. The kids can't see their food and the colours of their food as well so it seems like a bit of a sensory overload – this might create a bit of fear eating the food, especially when they aren't involved in the preparation. I suggest having white plates for eating.</li> <li>• After the overview of the workshop, and quick review of what we did last week, suggest to just simply ask the parents... how do you go with knowing what foods to feed your children when? Gives facilitator an idea of</li> </ul> | <ul style="list-style-type: none"> <li>• How many eggs can I feed my child per week?</li> <li>• How often could we eat McDonalds? Is once a week ok?</li> <li>• Feedback from Julia below:</li> <li>• Questions Asked:</li> <li>• Is it bad to take the kids for takeaway once a week?</li> <li>• Questions around what's so unhealthy about a takeaway burger when it contains lots of food groups (grains, meat, veg, dairy).</li> <li>• Is ham also discretionary like salami?</li> <li>• Why is the serve size of nuts so small? What's in them that makes them bad in larger portions?</li> <li>• Same questions as Week 1 on fruit and baked beans.</li> <li>• Is store bought fruit yoghurt okay?</li> </ul> |

| SESSION | GENERAL OBSERVATIONS | WHAT WORKED WELL | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS  |
|---------|----------------------|------------------|--|---|
|         |                      |                  | <p>some of the issues and messages to cover (i.e., a parent might say they have no idea when to start introducing harder foods, or one might express fears of choking and so on, or another parent might say they have been absolutely amazing at it).</p> <ul style="list-style-type: none"> <li>• Serve sizes was a little rushed due to time, which meant that portion sizes verses serve sizes wasn't discussed. I think maybe portion size verses serve size should be the main thing discussed even if time poor.</li> <li>• Hand out resources such as the cook books and ADG pamphlets which show serve sizes upon entering the room. This means facilitator doesn't need to keep them on the desk for the duration of the session (taking up room) or doesn't need to fuss</li> </ul> | <ul style="list-style-type: none"> <li>• Are the pouches and baby food appropriate or not appropriate? Comment on eating in the car.</li> <li>• One participant was adamant that meat was not an appropriate food to introduce to the Bubs group.</li> <li>• Lots of questions around which oil was best. A comment about one mum feeding her child only coconut oil (but uses different oils for herself).</li> <li>• Introductions of peanut butter and common allergens. Participant thought that peanut butter was the wrong texture (too thick) for the Bubs group.</li> <li>• When can we introduce sweet foods like drinking chocolate/coco loco balls to babies?</li> </ul> |

| SESSION   | GENERAL OBSERVATIONS   | WHAT WORKED WELL  | CHANGES REQUIRED  | PARTICIPANT QUESTIONS/COMMENTS  |
|---|--|---|---|---|
|   |  |   | about handing it out midway through the session.  |   |
| <b>27/8/19 Location 2.</b><br><b>Session 2</b><br><b>Childhood nutrition.</b> | <ul style="list-style-type: none"> <li>• All seven participants came back this week. One additional participant attended which was a participant's mother-in-law who is visiting from India.</li> <li>• Feedback from the centre manager was very positive and other parents asked if they could also join the program.</li> <li>• One child stayed during the cooking session and helped cook. We gave her a Kiddy Kutter knife, and she was happy chopping lettuce and helping with rolling out the flat bread.</li> <li>• Participants said they had been sharing recipes with family members.</li> <li>• Calm and relaxed atmosphere during eating this week.</li> <li>• Children sat and ate with the parents.</li> </ul> | <ul style="list-style-type: none"> <li>• Small discussion about portion size at end of activity and gave out eat for health brochures for parents to look over at home.</li> <li>• We took smaller plates for the children. We set up the food on low tables. We spoke to the parents about letting the children help themselves (choose) to the food. Gave parents tips like, it doesn't matter if they choose one thing or nothing. We gave the children their own forks and spoons and let them feed themselves. This worked really well.</li> <li>• Participants remembered from the previous AGTHE activity about tinned, frozen fruit &amp; veg being healthy options.</li> <li>• We took more photos and also a brief video</li> </ul> | <ul style="list-style-type: none"> <li>• The 0-5 foods activity is quite long and required about 1 hour. Reducing the number of photos may help with time.</li> <li>• Provide children size forks and spoons for kids.</li> <li>• At the start of cooking, we could re-emphasise like last week about the importance of getting kids to help in the kitchen. <ul style="list-style-type: none"> <li>• Need to bring- <ul style="list-style-type: none"> <li>• Magnets</li> <li>• Band-Aids</li> <li>• Hand wash</li> <li>• Spare paper for workbooks</li> </ul> </li> <li>• Need to remind participants to bring a take away container for left overs.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Participants weren't sure about why we need to start introducing foods at 6 months–They said; because they are ready to eat new foods, good for them to explore different foods – nobody new – iron requirements.</li> <li>• When we asked participants for examples of foods high in iron many participants said spinach.</li> <li>• Toddler milk – participants thought this was an appropriate food beyond 12 months.</li> <li>• Commercial baby food – participants didn't have an understanding why we should not give these frequently – (e.g., they said they are high in sugar or</li> </ul> |

| SESSION  | GENERAL OBSERVATIONS  | WHAT WORKED WELL   | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS   |
|--|---|--|--|--|
| <p><b>29/8/19 Location 1.</b></p> <p><b>Session 3</b></p> <p><b>Family Mealtimes</b></p> <p><b>Division of Responsibility.</b></p> | <ul style="list-style-type: none"> <li>All participants brought back their workbook.</li> <li>The concept was a little confusing at first for people, but generally people understood it. It generated lots of good questions about what participants should do with their own children.</li> <li>One participant made the gnocchi knock out dish during the week and the noodle salad.</li> <li>Parents took photos of the Satter Division of Responsibility of feeding framework (sDOR) activity.</li> <li>The handouts were well received, parents were keen for more information.</li> <li>There is a good rapport being built between participants and with the facilitators.</li> <li>Having this topic in Week 3 worked well, gave time for participants to get to trust us and see us as a</li> </ul> | <p>which will be great to show at the forum.</p> <ul style="list-style-type: none"> <li>Starting with the <i>What</i> was an easy opening question, then moving to <i>Whether</i> then the more difficult concepts of <i>Where, How Much</i> and <i>When</i>.</li> <li>Moving to the toddler example using the same order <i>What</i> and so forth.</li> <li>At the completion of the activity it was good to talk about slowly introducing the concept and there may be some back lash by the kids as we are taking away their <i>Power</i> or responsibility. Showing the difference between the infant and the child was a good visual representation.</li> <li>Letting the children help themselves to choose what they wanted to eat by providing small plates and tongs. Parents wanted to help them, but we encouraged to let the kids do it themselves.</li> </ul> | <ul style="list-style-type: none"> <li>We didn't do the ice breaker as we only started the session with two people.</li> <li>Using the ice breaker may have gradually introduced the topic.</li> <li>We could use some of the question to turn them into scenarios for the activity.</li> <li>Discuss goals during the eating time, participants may want to reassess their goals based on what they had learned with this new concept.</li> </ul> | <p>because they contain additives.)</p> <ul style="list-style-type: none"> <li>Lots of questions:</li> <li>What if he doesn't eat at dinner time. I want to feed him as I don't think he will eat enough.</li> <li>What if he doesn't want to come to the table?</li> <li>Normally I would say if you don't want to eat, I put away the toys and send him to bed early (Answer: this is a punishment for not eating – remember who is responsible for the what and whether) Tell him it's time for dinner, we are all sitting together. Try and make it fun, rather than feeling cross if he doesn't eat. When he goes to bed and if he asks for food say "I'm sorry you will need to wait until breakfast" We have finished eating dinner.</li> </ul> |

| SESSION   | GENERAL OBSERVATIONS  | WHAT WORKED WELL   | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS  |
|---|---|--|--|---|
|   | <p>credible source of information.</p>  | <ul style="list-style-type: none"> <li>• During the eating time we gave the parents some tips such as “How about mum serves herself some food as well so “toddler” can see her eating the food too”.</li> <li>• It was good for the parents to see the kids were capable to serve themselves.</li> </ul>   |  | <ul style="list-style-type: none"> <li>• How do I stop him watching iPad at dinner time? (participants answered this for her- Take it away).</li> <li>• Is too much chicken bad?</li> </ul>   |
| <p><b>3/9/19 Locations 2.</b><br/><b>Session 3</b><br/><b>Family Mealtimes</b><br/><b>Division of Responsibility.</b></p> | <ul style="list-style-type: none"> <li>• All but one participant showed up to the session.</li> <li>• One participant brought in a Dreamy Date Bake cake for us all to share she had made at home. She had baked the cake twice at home.</li> <li>• Another participant still came along even through her daughter was sick. She had her dad babysitting her. This showed commitment to the program.</li> <li>• Some parents still hand fed their child during the eating time.</li> <li>• One participant still offered her child a small</li> </ul> | <ul style="list-style-type: none"> <li>• Participants enjoyed talking about what foods they cooked during the week.</li> <li>• Participants understood the session format and were keen to get into cooking.</li> <li>• Another staff member came to this session while one facilitator was on leave – great to have an extra pair of hands and for her to observe the program.</li> </ul> | <ul style="list-style-type: none"> <li>• During Ice breaker facilitator to give a scenario (not too positive) to show the reality of feeding is difficult.</li> <li>• Cultural norms may play a bigger part/role in feeding children than what I thought. Especially the “feeding” children to the sDOR concept may be too difficult for people to accept.</li> <li>• We asked participants if they were happy to include the desert dishes with all the food and allow the children to help themselves to whatever</li> </ul> | <ul style="list-style-type: none"> <li>• During the icebreaker activity the participants took <i>positive</i> scenario images and spoke of how mealtimes were fun and enjoyable. They may have been reluctant to be honest about the difficulties.</li> <li>• There wasn't many questions and it was very quiet. My perception was the participants were taking in the new concept and thinking about it. Generally, what was discussed was agreed to by all participants, but the</li> </ul> |

| SESSION | GENERAL OBSERVATIONS   | WHAT WORKED WELL | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS  |
|---------|--|------------------|--|---|
|         | <p>container of fruit she brought with her, when her child refused to eat any of the savoury food.</p> |                  | <p>they wanted. We wanted to experiment with the concept. Most of the children helped themselves only to the desert food. Possibly we could offer the desert food later to avoid this. I wanted to teach the participants that by only providing “treats” once the main meal was finished created a concept of “good” and “bad” food. Foods which are taboo or more desired. Possibly this backfired, but it was still good for the parents to see what the children would take. I suggested that tomorrow as the parents decide the “what” to feed cakes or sweet foods may not be on the menu :)</p> <ul style="list-style-type: none"> <li>This activity needs to be reconstructed again for next week as it gave the concept that having these foods first is okay. Maybe this could be a</li> </ul> | <p>reality of implementing it may be difficult.</p> <ul style="list-style-type: none"> <li>Possible that this was an awkward conversation for the participants as they obviously knew what was right but then putting it into practice can be much harder than the theory.</li> <li>Maybe it's around identifying one change and then seeing how they went. I know you asked, had anyone tried anything, but just like goal setting if they have something to focus on then it's easier to report back on this one thing (among other things).</li> </ul> |

| SESSION  | GENERAL OBSERVATIONS   | WHAT WORKED WELL   | CHANGES REQUIRED  | PARTICIPANT QUESTIONS/COMMENTS   |
|--|--|--|---|--|
|  |  |  | talking point/learning point for next week around what happened and what you thought would happen but didn't.   |  |
| <b>5/9/19 Location 1.</b><br><b>Session 4</b><br><b>Food on the Move</b> | <ul style="list-style-type: none"> <li>Two late arrivals which was a bit disruptive as the participants missed out on key information regarding label reading activity.</li> <li>CALD participant took photos of cream cheese and UHT (long-life) custard as she hadn't purchased them before and didn't know what they were.</li> <li>One participant was not familiar with fresh herb rosemary, she had seen it growing in her garden but didn't realise you could use it in cooking, we explained it was great with meat dishes.</li> <li>One participant said he used the health star rating to choose between products.</li> <li>During the crèche the staff provided the children</li> </ul> | <ul style="list-style-type: none"> <li>Four recipes worked well. Recommend no more than four recipes for 5–6 participants which reduces waste.</li> <li>Cost per kilo display of toddler snacks worked well and participants were really interested in the cost.</li> <li>Participants came up with good suggestions themselves about saving time with taking food out of the home – batch cooking, using leftovers.</li> <li>One participant (male) said he would make the Atomic Apple Crumble Cups in batches to take out as snacks for his daughter.</li> <li>Having the AGTHE poster up during the activity was good so we could keep referring back to the food groups.</li> </ul> | <ul style="list-style-type: none"> <li>Asking the centre to remind the participants to arrive on time, bring their workbook and a container to take food home.</li> <li>It would be great to run a training session with some of the CPC staff so they have the knowledge to upskill parents they see in the centre.</li> <li>We could possibly run four trainings per year (Metro).</li> <li>Suggest CPC provide kids with veggies to complement the amount of fruit offered for snacks.</li> <li>Use recipes in this session which relate to the topic (e.g., foods that can be frozen and used in lunch boxes pikelets, muffins).</li> </ul> | <ul style="list-style-type: none"> <li>Which cereal is better Rice Bubbles or Milo? After label reading activity, we looked at fibre and explained how low it was in these cereals.</li> <li>How do you prepare Weetbix? (CALD participant) This participant had only purchased <i>porridge</i> in a box which was flavoured and didn't know that the \$1 packet of oats was the same, cheaper and less sugar.</li> <li>Comment from a Filipino participant about taking food (rice &amp; chicken) to school in the Philippines without any refrigeration.</li> <li>Do schools have microwaves to heat up food?</li> </ul> |

| SESSION  | GENERAL OBSERVATIONS  | WHAT WORKED WELL   | CHANGES REQUIRED  | PARTICIPANT QUESTIONS/COMMENTS   |
|--|---|--|---|--|
|  | <p>with small sandwiches (Vegemite) and fruit including rockmelon, strawberries and apples..</p> <ul style="list-style-type: none"> <li>Some participants had never heard of a <i>thermos</i> to keep foods hot.</li> </ul>   |  |   | <ul style="list-style-type: none"> <li>What are the cut offs for fat on the label reading card for cheese?</li> <li>Peanut Butter and Jam – where do they fit on the plate?</li> </ul> |
| <p><b>10/9/19 Location 2.</b><br/><b>Session 4</b><br/><b>Food on the Move</b></p> | <ul style="list-style-type: none"> <li>Participants were really interested in the label reading activity. This was a very engaging activity.</li> <li>Most participants said they do read labels and looked at additives, artificial colours, flavours and MSG, sugar and fat.</li> <li>One participant said she liked to choose organic produce because it was less use of pesticides which was better for the environment.</li> </ul> | <ul style="list-style-type: none"> <li>We asked the participants to provide some feedback on what they have enjoyed or learned through program so far and they said –</li> <li>“I’m using less oil and fat when I cook”.</li> <li>“I’ve added in more fish into my diet, particularly tinned fish like tuna”.</li> <li>“I’ve learned that healthy food can be tasty”.</li> <li>“It’s easy to cook tasty dishes that are quick and easy”.</li> <li>Parents loved the Superhero Foods placemats and asked if they could purchase them.</li> <li>One parent told us she had been to the Foodbank Superhero</li> </ul> | <ul style="list-style-type: none"> <li>Each week at this session one participant’s child come into the session to be with her mum. We have let her help with the cooking and let her join in. This week she didn’t want to go into the crèche at all and wanted to come straight into the education part of the session. We may have made it too appealing or fun. This week this child was quite distracting and talking over us while we tried to do the label reading activity. We gave her some Superhero Foods placemats to look at and keep her occupied. Later when another child</li> </ul> | <ul style="list-style-type: none"> <li>Good suggestions about making it quick and easy to pack lunch boxes, such as making bulk and packaging into smaller portions.</li> </ul>        |



| SESSION  | GENERAL OBSERVATIONS  | WHAT WORKED WELL  | CHANGES REQUIRED  | PARTICIPANT QUESTIONS/COMMENTS  |
|--|---|---|---|---|
|  |   | Foods HQ website looking at the recipes. <ul style="list-style-type: none"> <li>We could develop a child friendly placemat as a giveaway at the last week. This would reinforce the healthy eating message and the make mealtimes joyful (fun) too.</li> </ul>  | came into the session. she has a big meltdown when the other child looked at the placemats. It was quite disruptive. Next time we should consider not making it too attractive for kids to participate to stop this from happening.   |   |
| <b>12/9/19 Location 1.</b><br><b>Session 5</b><br><b>Feeding the Family.</b> | <ul style="list-style-type: none"> <li>One participants child's 1st birthday today. We sung happy birthday and mum videoed the moment.</li> <li>All participants were very relaxed and comfortable in each other's company (built good rapport).</li> <li>Participants that missed the previous week were very keen to get the resources they missed out on.</li> <li>One CALD participant told us her husband does all the food shopping as he didn't want her spending too much money.</li> </ul> | <ul style="list-style-type: none"> <li>Comment from one facilitator when presenting "Just by coming here you are making an investment for your family".</li> <li>Participants liked the certificate and plate incentives.</li> <li>The shopping trolley activity was well received.</li> <li>Idea for getting kids to eat veggies as a snack – canned corn kernels in patty pans with a small fork or spoon.</li> </ul> | <ul style="list-style-type: none"> <li>Add SMS reminders to booking process.</li> <li>Include an AGTHE poster in toolkit.</li> <li>One page flyer for veggie snack ideas for CPC's.</li> <li>Add website address to collage.</li> <li>Laminate the meal planning and shopping list hand out so it can be written on in white board marker and reused.</li> <li>This is a long session (education) so quick recipes are ideal.</li> <li>Cover off goals each week rather than leave until the end.</li> <li>Reduce length of saving money discussion as this week has lots of</li> </ul> | <ul style="list-style-type: none"> <li>How many days is it safe to use leftovers.</li> <li>How long can you keep veggies in the freezer?</li> <li>We asked for feedback from participants and they said the following about the program:</li> <li>Improvements include using less pictures in activities.</li> <li>Run program over more weeks.</li> <li>Have another "intermediate" program.</li> <li>Have a catch up/refresher session for participants, with each bringing a recipe</li> </ul> |

| SESSION | GENERAL OBSERVATIONS   | WHAT WORKED WELL | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS  |
|---------|--|------------------|--|---|
|         | <ul style="list-style-type: none"> <li>• Other participant said she only purchased foods on special.</li> <li>• Another went shopping most days on the week.</li> <li>• Another had a f/n strict food budget.</li> </ul> |                  | <p>things to get through. Handouts for this may reduce time spent.</p> <ul style="list-style-type: none"> <li>• Cost out a workbook including all resources for future budgeting.</li> </ul> | <p>they can bring from home.</p> <ul style="list-style-type: none"> <li>• More information on food myths/dieting trends (e.g., coconut oil being unhealthy).</li> <li>• The program was enjoyed by all, favourite topics from two participants were the sDOR – they told us they have made lots of changes including not controlling so much, no longer eating with iPad, - this parent said she taught her children the importance of respecting your food and when on iPad this isn't happening, children are eating themselves, eating more veggies, meal times are less stressful.</li> <li>• Participant with 8-month-old said the eating time with including children was great, she learned</li> </ul> |

| SESSION | GENERAL OBSERVATIONS | WHAT WORKED WELL | CHANGES REQUIRED | PARTICIPANT QUESTIONS/COMMENTS  |
|---------|----------------------|------------------|------------------|---|
|         |                      |                  |                  | <p>what the older children are doing around mealtimes and was a great learning opportunity for her,</p> <ul style="list-style-type: none"> <li>• Using more canned food as she thought (before) canned food was “bad”.</li> <li>• One participant had lost weight and had started excising (catalyst for making a change).</li> <li>• One participant set a goal to cook a recipe and post of the Food Sensations Forum Facebook® group.</li> <li>• One participant’s son was eating more veg, helping with cooking and when he helped with cooking, he was eating more vegetables through doing this.</li> <li>• Enjoyed getting a recipe booklet each week and decide on recipes for the following week.</li> </ul> |

| SESSION  | GENERAL OBSERVATIONS   | WHAT WORKED WELL  | CHANGES REQUIRED   | PARTICIPANT QUESTIONS/COMMENTS   |
|--|--|---|--|--|
|  |  |   |  | <ul style="list-style-type: none"> <li>Label reading was the favourite for one participant.</li> </ul>   |
| SESSION  | GENERAL OBSERVATIONS   | WHAT WORKED WELL  | WHAT WE CAN DO DIFFENTLY   | PARTICIPANT QUESTIONS/COMMENTS   |
| <b>17/9/19 Location 2.</b><br><b>Session 5</b><br><b>Feeding the Family.</b> | <ul style="list-style-type: none"> <li>All participants came to this last session.</li> <li>The CPC coordinator loved the collage we left behind and wanted to be able to show other parents the key messages – we could ask about feedback to develop a resource they could use in the centre?</li> <li>Half the participants said healthy food was more expensive than unhealthy/convenience foods.</li> </ul> | <ul style="list-style-type: none"> <li>Participants really liked the workbooks and had shared with family and friends including recipes.</li> <li>Starting with the shopping trolley activity worked well and was quicker to do it this way.</li> <li>Keeping the dessert to one side until the main food had been eaten.</li> <li>Participants really liked their certificates and the plates.</li> <li>Participants like the Superhero Foods placemats but didn't want to purchase any – they wanted freebies.</li> <li>Participants were keen to get resources they missed out on if they didn't attend a session.</li> <li>Telling people about the Superhero Foods HQ</li> </ul> | <ul style="list-style-type: none"> <li>Add more milk pictures into the activity.</li> <li>Get participants to write one goal and include first week in folder, revisit each week.</li> <li>Reinforce goal setting in final week.</li> <li>Price up the cost of resources we give out to work out budget for future funding.</li> </ul> | <ul style="list-style-type: none"> <li>Feedback from the group was:</li> <li>The program has helped one participant with her daughter getting used to going into the crèche.</li> <li>High satisfaction from participants. One participant commented on how much she enjoyed the social factor of being with other mums.</li> <li>Have become more lenient with ingredients when purchasing foods (not so strict) better understanding.</li> <li>Helped her partner to cook now gets him cooking once a week and trying Foodbank recipes.</li> </ul> |

| SESSION | GENERAL OBSERVATIONS | WHAT WORKED WELL   | CHANGES REQUIRED | PARTICIPANT QUESTIONS/COMMENTS   |
|---------|----------------------|--|------------------|--|
|         |                      | <p>website and the Food Sensations Forum Facebook® group, people were keen to keep learning.</p> |                  | <ul style="list-style-type: none"> <li>• One participant said she had cooked about half of all the new recipes she received (approx. 30).</li> <li>• They said they liked everything about the program.</li> <li>• Offer the program at night to get dads involved.</li> <li>• Liked quick, easy nutritious recipes including lunch box ideas.</li> <li>• Program folder was useful.</li> <li>• Liked that we provided them with websites to go to.</li> <li>• Liked having kids in for tasting – it encouraged kids to try new food.</li> <li>• Cooking meals together and being able to choose the recipes each week.</li> <li>• Liked family food on a budget.</li> <li>• Request for an advanced program.</li> </ul> |

## Appendix L. *Food Sensations* for Parents Example Lesson Plan and Facilitator Notes

| <p><b>MODULE 1</b></p> <p><b>GETTING STARTED (LESSON PLAN)</b></p> <p>    </p>   |  |            |  |   |  |           |           |  |  |
|---|--|------------|--|---|--|-----------|-----------|--|--|
| <p><b>ESTIMATED DURATION:</b><br/>50 minutes</p> <p><b>PURPOSE:</b><br/>To provide an opportunity for participants to get to know each other and understand how the Australian Dietary Guidelines can be incorporated into everyday life.</p> <p><b>LEARNING OBJECTIVES:</b><br/>This session will enable participants to:</p> <ol style="list-style-type: none"> <li>1. Categorise foods into the five core and discretionary food groups as outlined in the national dietary guidelines.</li> <li>2. Identify the links between eating a variety of foods and nutrients to maintain good health and prevent chronic disease.</li> <li>3. Choose and prepare healthy family meals and snacks from Foodbank WA's recipe booklets.</li> <li>4. Practice creating a positive food experience for their children.</li> </ol> <p><b>KEY MESSAGES:</b></p> <ol style="list-style-type: none"> <li>1. Choose foods from all of the five food groups every day.</li> <li>2. Eat more vegetables.</li> <li>3. Children learn how and what to eat from those around them.</li> <li>4. Family mealtimes help develop positive food experiences for your child.</li> </ol> <p><b>FURTHER INFORMATION FOR EDUCATORS:</b><br/>NHMRC AGTHE Educator Guide: <a href="http://eatforhealth.gov.au">eatforhealth.gov.au</a><br/>NHMRC Infant Feeding Guidelines (IFG): <a href="http://eatforhealth.gov.au">eatforhealth.gov.au</a></p> | <table border="1"> <thead> <tr> <th colspan="2">ACTIVITIES</th> </tr> </thead> <tbody> <tr> <td colspan="2"> <ul style="list-style-type: none"> <li>- Activity 1: Ice breaker: Food that you like/dislike/now like</li> <li>- Activity 2: Learning expectations</li> <li>- Activity 3: Australian Guide to Healthy Eating (AGTHE)</li> <li>- Activity 4: Portion Plate</li> <li>- Activity 5: SMART goal</li> <li>- Activity 6: Handwashing &amp; Knife skills</li> <li>- Activity 7: Cooking</li> <li>- Activity 8: Shared meal</li> <li>- Activity 9: Key messages, handouts and recipe booklet</li> </ul> </td> </tr> <tr> <th>RESOURCES</th> <th>EQUIPMENT</th> </tr> <tr> <td> <ul style="list-style-type: none"> <li>- Enrolment and consent form</li> <li>- Start of program questionnaire</li> <li>- Let's Feed the Family resource book</li> <li>- Relevant Foodbank recipe booklet</li> </ul> <p>If not using Let's Feed the Family book:</p> <ul style="list-style-type: none"> <li>- Healthy Eating for Adults brochure</li> <li>- Goal setting handout</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>- Attendance list</li> <li>- Name tags, Ice-breaker sheets, butcher's paper, markers, pens</li> <li>- Blue tac, pins or masking tape</li> <li>- Start of program questionnaires</li> <li>- Program overview and Group Expectations (A3 laminated poster)</li> <li>- Australian Guide to Healthy Eating poster (A1)</li> <li>- Felt or poster Australian Guide to Healthy Eating (AGTHE)</li> <li>- Food group labels and pictures</li> <li>- Portion plate</li> </ul> </td> </tr> </tbody> </table>  | ACTIVITIES |  | <ul style="list-style-type: none"> <li>- Activity 1: Ice breaker: Food that you like/dislike/now like</li> <li>- Activity 2: Learning expectations</li> <li>- Activity 3: Australian Guide to Healthy Eating (AGTHE)</li> <li>- Activity 4: Portion Plate</li> <li>- Activity 5: SMART goal</li> <li>- Activity 6: Handwashing &amp; Knife skills</li> <li>- Activity 7: Cooking</li> <li>- Activity 8: Shared meal</li> <li>- Activity 9: Key messages, handouts and recipe booklet</li> </ul> |  | RESOURCES | EQUIPMENT | <ul style="list-style-type: none"> <li>- Enrolment and consent form</li> <li>- Start of program questionnaire</li> <li>- Let's Feed the Family resource book</li> <li>- Relevant Foodbank recipe booklet</li> </ul> <p>If not using Let's Feed the Family book:</p> <ul style="list-style-type: none"> <li>- Healthy Eating for Adults brochure</li> <li>- Goal setting handout</li> </ul> | <ul style="list-style-type: none"> <li>- Attendance list</li> <li>- Name tags, Ice-breaker sheets, butcher's paper, markers, pens</li> <li>- Blue tac, pins or masking tape</li> <li>- Start of program questionnaires</li> <li>- Program overview and Group Expectations (A3 laminated poster)</li> <li>- Australian Guide to Healthy Eating poster (A1)</li> <li>- Felt or poster Australian Guide to Healthy Eating (AGTHE)</li> <li>- Food group labels and pictures</li> <li>- Portion plate</li> </ul> |
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GETTING STARTED (LESSON PLAN)



| LEARNING OBJECTIVES  | UNIT TITLE   | CONTENT   | STRATEGY  | DURATION |
|--|--|---|---|----------|
|  | Introduction and housekeeping  | <ul style="list-style-type: none"> <li>- Attendance list</li> <li>- Start of program questionnaire</li> <li>- Introductions</li> <li>- Icebreaker</li> <li>- Learning expectations</li> <li>- Group expectations</li> <li>- Program overview</li> </ul> | <p><b><u>Activity 1: Ice breaker: Food that you like/dislike/now like</u></b></p> <p><b><u>Resources</u></b></p> <ul style="list-style-type: none"> <li>- Coloured paper and pens</li> </ul> <p><b><u>Activity 2: Learning expectations</u></b></p> <p><b><u>Resources</u></b></p> <ul style="list-style-type: none"> <li>- Butcher's paper and markers</li> <li>- Blue tac or masking tape</li> <li>- Group expectations and Program overview</li> </ul> | 20 mins  |
|  | Evaluation   |   | <p><b><u>Resources</u></b></p> <ul style="list-style-type: none"> <li>- Start of program questionnaires</li> </ul>  | 5 mins   |
| <ol style="list-style-type: none"> <li>1. Categorise foods into the five core and discretionary food groups as outlined in the national dietary guidelines.</li> <li>2. Identify the links between eating a variety of foods and nutrients to maintain good health and prevent chronic disease.</li> </ol> | Australian Dietary Guidelines and the Australian Guide to Healthy Eating | <ul style="list-style-type: none"> <li>- Identify the five core food groups and extra/discretionary group</li> <li>- Explain the nutrients present in each food group and the benefits of a varied diet.</li> </ul>                                     | <p><b><u>Activity 3: Australian Guide to Healthy Eating (AGTHE)</u></b></p> <p><b><u>Resources:</u></b></p> <ul style="list-style-type: none"> <li>- Felt or poster AGTHE</li> <li>- Laminated food group labels</li> <li>- Laminated food pictures</li> <li>- <b>Optional:</b> Healthy Eating for Adults brochure</li> </ul>   | 20 mins  |

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GETTING STARTED (LESSON PLAN)



| LEARNING OBJECTIVES   | UNIT TITLE          | CONTENT   | STRATEGY   | DURATION |
|---|---------------------|---|--|----------|
|   | The Healthy Plate   | <ul style="list-style-type: none"> <li>- Explain the recommended portions of foods in a meal</li> </ul>   | <p><b><u>Activity 4: Portion Plate</u></b></p> <p><b>Resources:</b></p> <ul style="list-style-type: none"> <li>- Portion plate</li> <li>- Food models (if available)</li> </ul>                              | 5 mins   |
|   | Goal setting        | <ul style="list-style-type: none"> <li>- Help participants to set one SMART goals.</li> </ul>   | <p><b><u>Activity 5: Goal setting</u></b></p> <p><b>Resources:</b></p> <ul style="list-style-type: none"> <li>- Let's Feed the Family book p. 34 &amp; 35 OR Goal setting handout</li> <li>- Pens</li> </ul> | 5 mins   |
| 3. Choose and prepare healthy family meals and snacks from Foodbank WA's recipe booklets. | Cooking             | <ul style="list-style-type: none"> <li>- Introduce and explain the recipes, recipe cards and cooking stations</li> <li>- Explain basic knife safety guidelines and knife techniques</li> <li>- Brief parents on hand washing</li> </ul> | <p><b><u>Activity 6: Handwashing and Knife skills</u></b></p> <p><b><u>Activity 7: Hands- on cooking</u></b></p>   | 45 mins  |
| 4. Practice creating a positive food experience for their children.                       | Eating/Sharing meal | <ul style="list-style-type: none"> <li>- Invite parents to bring their children in for tasting</li> <li>- Practice joyful mealtimes</li> </ul>  | <p><b><u>Activity 8: Shared meal with children</u></b></p>   | 15 mins  |

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GETTING STARTED (LESSON PLAN)



| LEARNING OBJECTIVES | UNIT TITLE             | CONTENT  | STRATEGY                                   | DURATION |
|---------------------|------------------------|--|--|----------|
|                     | Conclusion/<br>Summary | <ul style="list-style-type: none"> <li>- Summarise key messages:               <ol style="list-style-type: none"> <li>1. Choose foods from all of the five food groups every day.</li> <li>2. Eat more vegetables.</li> <li>3. Children learn how and what to eat from those around them.</li> <li>4. Family mealtimes help develop positive food experiences for your child.</li> </ol> </li> <li>- Provide Let's Feed the Family book OR handouts</li> <li>- Foodbank WA recipe booklet.</li> <li>- Explain next session</li> <li>- Remind participants to bring workbooks and empty food containers.</li> </ul> | <u>Activity 9: Review the key messages</u> | 5 mins   |

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# MODULE 1



## GETTING STARTED (FACILITATOR NOTES)



### ESTIMATED DURATION:

60 minutes

### PURPOSE:

To provide an opportunity for participants to get to know each other and understand how the Australian Dietary Guidelines can be incorporated into everyday life.

### LEARNING OBJECTIVES:

This session will enable participants to:

1. Categorise foods into the five core and discretionary food groups as outlined in the national dietary guidelines.
2. Identify the links between eating a variety of foods and nutrients to maintain good health and prevent chronic disease.
3. Choose and prepare healthy family meals and snacks from Foodbank WA's recipe booklets.
4. Practice creating a positive food experience for their children.

### KEY MESSAGES:

1. Choose foods from all of the five food groups every day.
2. Eat more vegetables.
3. Children learn how and what to eat from those around them.
4. Family mealtimes help develop positive food experiences for your child.

### FURTHER INFORMATION FOR EDUCATORS:

NHMRC AGTHE Educator Guide: [eatforhealth.gov.au](http://eatforhealth.gov.au)

NHMRC Infant Feeding Guidelines (IFG): [eatforhealth.gov.au](http://eatforhealth.gov.au)

### ACTIVITIES

- Activity 1: Ice breaker: Food that you like/dislike/now like
- Activity 2: Learning expectations
- Activity 3: Australian Guide to Healthy Eating (AGTHE)
- Activity 4: Portion Plate
- Activity 5: SMART goal
- Activity 6: Handwashing & Knife skills
- Activity 7: Cooking
- Activity 8: Shared meal
- Activity 9: Key messages, handouts and recipe booklet

### RESOURCES

- Enrolment and consent form
- Start of program questionnaire
- Let's Feed the Family resource book
- Relevant Foodbank WA recipe booklet

If not using Let's Feed the Family book:

- Healthy Eating for Adults brochure
- Goal setting handout

### EQUIPMENT

- Attendance list
- Name tags, Ice-breaker sheets, butcher's paper, markers, pens
- Blue tac, pins or masking tape
- Start of program questionnaires
- Program overview and Group Expectations (A3 laminated poster)
- Australian Guide to Healthy Eating poster (A1)
- Felt or poster Australian Guide to Healthy Eating (AGTHE)
- Food group labels and pictures
- Portion plate



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MODULE  
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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE                    | KEY CONTENT   |
|-------------------------------|---|
| Introduction and housekeeping | <p>Welcome everyone to the program and thank them for making the time to attend. Thank hosting organisation and staff.</p> <ul style="list-style-type: none"> <li>- Introduce yourself and provide a little bit of relevant information about yourself professionally and personally (qualifications and experience) - it's great to show photo of your kids or family e.g. kids when they were babies, hobbies, partner. Invite colleagues/volunteers to do the same. Explain that you are a parent (if applicable) and that you understand the challenges of feeding a family.</li> <li>- Explain our program is an opportunity to share our experiences and learn from each other in a safe environment, with no judgment.</li> <li>- Priority is your child/children, if you need to attend to them during the session that is ok, however we encourage children to enjoy the crèche during the education and cooking and we will invite them to share the meal with us at the end.</li> <li>- We have the morning together, time out for you to learn new things and empower yourself with the knowledge and skills to feed your children and your entire family.</li> <li>- Explain where tea/coffee/water, toilets, emergency exits are located.</li> </ul> <p><i>Has anyone heard of Food Sensations before? Has anyone attended a Food Sensations program before?</i></p> <p>Briefly explain the suite of <i>Food Sensations</i> programs (schools, adults, FYF, parents), School Breakfast program and <i>Superhero Foods</i> initiative. We are the largest public health nutrition team in Australia.</p> <p>Ask the participants to complete the <b>start of program questionnaire</b> (if they haven't done it before the session commenced). Explain participation is voluntary, there are no right or wrong answers, and there is an information sheet if they would like more information.</p> <p><b><u>Activity 1: Ice Breaker - Food that you like, dislike, now like</u></b></p> <p><b><u>Resources:</u></b></p> <ul style="list-style-type: none"> <li>- Coloured paper with a heart, sad face and child &amp; adult stick figure</li> <li>- Pens</li> </ul> |




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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE | KEY CONTENT  |
|------------|--|
|            | <p><b>Instructions:</b></p> <ol style="list-style-type: none"> <li>Handout a small piece of paper with a heart, sad face and child &amp; adult stick figure and pen to each participant.</li> <li>Explain what each symbol is referring to and what the questions are that you would like them to answer.</li> <li>Give participants 1-2 minutes to write an answer against each picture.</li> <li>Once participants have written their answers, ask them to stand up and find another participant that they don't already know.</li> <li>Ask them to find out their partners name and answers to the icebreaker questions.</li> <li>Invite participants to introduce their partners and their answers to the group.</li> </ol> <p> <i>What food do you absolutely love/will eat?</i></p> <p> <i>What food do you absolutely dislike/won't eat?</i></p> <p> <i>What food did you dislike or wouldn't eat as a child, that you now eat/enjoy as an adult?</i></p> <ol style="list-style-type: none"> <li>Facilitators can also share their food answers. <ul style="list-style-type: none"> <li>- <b>Emphasise</b> - we need lots of practice trying new foods.</li> <li>- Food preferences are shaped by our environment and experience not just taste.</li> <li>- We are all different, just like our kids we are all individuals.</li> </ul> </li> </ol> <p><b>Activity 2: Learning expectations</b></p> <p><b>Resources:</b></p> <ul style="list-style-type: none"> <li>- Butcher's paper, blue tac or masking tape, and markers.</li> </ul> <p><b>Instructions:</b></p> <ol style="list-style-type: none"> <li>Give participants 1-2 minutes to think about what they would like to learn in the program.</li> </ol> |

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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE | KEY CONTENT  |
|------------|--|
|            | <p>2. Encourage participants to share their expectations and record responses on butcher's paper.</p> <p>3. Ensure expectations are displayed each week so you can refer back to them after program overview and at the end of each session to check if the expectation has been met.</p> <p>Explain the <b>Group Expectations</b> and seek agreement from participants so that the program runs smoothly and everyone gets the most of it and has fun. Hold up laminated card and explain each rule (more information on laminated card).</p> <ul style="list-style-type: none"> <li>- Respect each other and the facilitator</li> <li>- Equal air time</li> <li>- Be brave, adventurous and open</li> <li>- Have fun and relax</li> </ul> <p>(Place Group Expectations up on board as a visual reminder for participants)</p> <p>Provide an <b>overview</b> of the <i>Food Sensations for Parents</i> program (format, program overview, duration, funded by Healthway).</p> <ul style="list-style-type: none"> <li>- Run over <b>5 weeks</b>, each <b>2.5 hour</b> session includes 60 minutes of fun, interactive activities and discussion</li> <li>- 60 minutes of hands-on <b>cooking</b> using quick, tasty, budget friendly recipes, followed by a shared meal or tasting session.</li> <li>- Explain what recipes we will be cooking today - link to family meals (all about the food)</li> <li>- Children will be invited to join us to eat/taste at the end of the sessions (great opportunity for them to try something new and be involved in a fun way, no pressure).</li> <li>- Show <b>program overview</b> week by week and explain outcomes for each session</li> <li>- Show <b>Let's Feed the Family book</b> - Explain its purpose and encourage participants to bring it back with them each week.</li> <li>- Each week - <b>giveaways</b> including recipe books, shopping bag, Kids Healthy Eating plate (week 5), certificate of completion.</li> </ul> <p>Link participant's <b>expectations</b> listed on butcher's paper back to program overview to explain what will and won't be covered in the program. Highlight what we can't cover: (explain we like to tailor to our participants needs and child ages)</p> <ul style="list-style-type: none"> <li>- Individual dietary assessments - refer to a Dietitian</li> <li>- Specific medical conditions or allergies e.g. coeliac disease - refer to a GP</li> <li>- Child development concerns - refer to their child health nurse/paediatrician/GP.</li> </ul> |

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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE  | KEY CONTENT  |
|---|--|
| <p>Australian Dietary Guidelines and Australian Guide to Healthy Eating</p> | <p><b><u>Activity 3: Australian Guide to Healthy Eating (AGTHE)</u></b></p> <p><b><u>Resources:</u></b></p> <ul style="list-style-type: none"> <li>- Felt or poster AGTHE</li> <li>- Laminated food group labels</li> <li>- Laminated food pictures</li> <li>- Optional: Healthy Eating for Adults brochure</li> </ul> <p><b><u>Instructions:</u></b></p> <ol style="list-style-type: none"> <li>1. Display the Australia Guide to Healthy Eating (AGTHE) poster.</li> <li>2. Check the participants current level of knowledge by a asking one or a combination of the following questions:               <ul style="list-style-type: none"> <li>- <i>Has anyone seen this poster before?</i></li> <li>- <i>Would anyone like to share what it means?</i></li> <li>- <i>Can anyone name a food group?</i></li> <li>- <i>How many food groups can you see?</i></li> <li>- <i>What is red section?</i></li> </ul> </li> <li>3. Explain: The <i>Australian Guide to Healthy Eating</i> (AGTHE) is a food selection guide which visually represents the proportion of the five food groups recommended for consumption each day. Explain that a diet based on the Australian Dietary Guidelines will help to maintain a healthy weight, reduces the risk of developing chronic diseases and provides a wide variety of foods.</li> <li>4. Explain that we are going to do an activity and categorise foods into food groups.</li> <li>5. Place felt AGTHE in the middle of the table or floor.</li> <li>6. Ask participants if they can name one of the five food groups and place label on corresponding coloured section.               <ul style="list-style-type: none"> <li>- Vegetables (dark green)</li> <li>- Fruit (light green)</li> <li>- Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties (yellow/orange)</li> <li>- Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans (blue)</li> <li>- Milk, yoghurt, cheese and/or alternatives - mostly reduced fat (purple)</li> </ul> </li> </ol> |



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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE | KEY CONTENT   |
|------------|---|
|            | <ul style="list-style-type: none"> <li>- If the food doesn't fit into the food groups above, then it is considered to be a Discretionary food (red). Add label 'sometimes and small amounts'</li> <li>- Healthy fats &amp; oil (label: 'Use small amounts')</li> </ul> <p>7. Provide each participant (or pair/small group) with a selection of food images and/or food models (if available).</p> <p>8. Ask participants to place food images onto the correct food group on the felt AGTHE or the Discretionary section.</p> <p>9. Check for understanding: Pick up any incorrectly placed images and/or food models and ask participants to recommend where they should go. Place them in the correct group</p> <p>10. Once images are correctly matched, discuss the nutrients present in each food group and the benefits of eating a varied diet. Foods from the core food groups are nutrient dense (each food contains a lot of nutrients for each kilojoule that it provides). Eating a balanced diet, in line with the Australian Dietary Guidelines, reduces the risk of developing chronic diseases such as cancer, heart disease and diabetes, can improve mood and will help to maintain a healthy weight.</p> <p><b>Grains and cereals (yellow/orange): Energise</b></p> <ul style="list-style-type: none"> <li>- Provide carbohydrates, protein, fibre and some vitamins.</li> <li>- Carbohydrates are the preferred energy source for muscles and brain function.</li> <li>- Choose wholegrain and/or high fibre varieties to provide a slower release of energy (low GI) and to keep you fuller for longer and maintain good digestive, bowel and gut health.</li> </ul> <p><b>Vegetables (dark green) and Fruit (light green) - Protect</b></p> <ul style="list-style-type: none"> <li>- Provide a number of vitamins and minerals to boost immunity and protect us from illness and disease.</li> <li>- Loaded with fibre (especially in the skin) to feel fuller for longer and maintain digestive, bowel and gut health.</li> <li>- Canned and frozen are great alternatives to fresh, can be cheaper and have a longer shelf life.</li> <li>- Choose reduced salt canned vegetables and fruit in natural juice instead of syrup (sugar).</li> <li>- Frozen fruit and vegetables are snap frozen once picked and contain the same nutrients (sometimes better) than fresh.</li> <li>- Try to buy local in season fruit and vegetables as it is fresher, has travelled less miles, and may be cheaper.</li> <li>- Encourage your family to 'eat like a rainbow' and include a wide variety of different coloured vegetables and fruit in your day, as each colour provides our body with different nutrients.</li> </ul> |

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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE | KEY CONTENT   |
|------------|---|
|            | <ul style="list-style-type: none"> <li>- Dried fruit and juice are easily over-consumed so fresh, frozen or canned fruit in natural juice are the best options.</li> <li>- Only 1 in 13 Australians (7.5% of the population) eat the recommended amount of vegetables and just over half (51.3%) eat the recommended daily serves of fruit. One in 17 (6%) of children aged 2-17 years met the guidelines for recommended number of serves of both fruit and veg (National Health Survey 2017-2018)</li> <li>- Fill half your plate/bowl/lunchbox with vegetables for each meal (show portion plate if available).</li> </ul> <p><b>Milk, yoghurt and cheese (purple) - Build</b></p> <ul style="list-style-type: none"> <li>- Provide protein and calcium to build strong and healthy bones (skeleton, teeth and nails)</li> <li>- The ADG's recommend reduced fat options for all family members over the age of two as it has less saturated fat and higher calcium and protein. However, children under the age of two require full fat options for optimum growth and development.</li> <li>- If you choose a milk based alternative e.g. soy, rice, almond milk etc. ensure it is calcium fortified.</li> <li>- Approximately half of the population eat enough of this food group - reduced fat or otherwise.</li> </ul> <p><b>Lean meat and alternatives (blue) - Build</b></p> <ul style="list-style-type: none"> <li>- High in protein for muscle development and repair and some vitamins &amp; minerals e.g. iron and zinc.</li> <li>- Choose both animal and plant options for a variety of nutrients and to reduce the cost of this group.</li> <li>- Red meat (beef and lamb) is the best source of iron and is easily absorbed by your body.</li> <li>- Iron rich foods are very important for brain development of children and should be introduced around 6 months of age.</li> <li>- Choose the leanest (lowest in fat) options that you can afford, and remove visible fat and skin.</li> </ul> <p><b>Unsaturated spreads and oils:</b></p> <ul style="list-style-type: none"> <li>- Use small amounts of unsaturated fat options e.g. olive oil and canola oil.</li> <li>- Fat is high in energy (kilojoules) so it is important to only use small amounts.</li> <li>- Using a spray or pump bottle rather than pouring oil into a pan makes it easier to control the amount of oil you use.</li> </ul> <p><b>Drink plenty of water</b></p> |

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GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE | KEY CONTENT   |
|------------|---|
|            | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Felt AGTHE using pictures</p> </div> <div style="text-align: center;">  <p>Felt AGTHE using food models</p> </div> </div> <p><b>Discretionary Foods</b></p> <ul style="list-style-type: none"> <li>- If a food doesn't fit into the food groups above, then it is considered to be a discretionary food, junk food or extra food.</li> <li>- Encourage a group discussion on why these foods are in this section, how much and how often they should be consumed, and how they can impact health.</li> <li>- These foods and drinks are high in energy, saturated fat, added sugar and salt (if appropriate mention alcohol) and should only be chosen sometimes and in small amounts. These foods are recognised as energy-dense or extra foods.</li> <li>- Discretionary foods should be limited because they lack many of the nutrients needed for growth and good health. Because they are usually high in energy (kilojoules) they result in a higher energy intake over the day, which over time can lead to health issues.</li> <li>- In 2017-18, 2 in 3 (67%) of Australian adults were overweight or obese and one quarter (24.9%) of children aged 5-17 years were overweight or obese.</li> <li>- Explain: one serve = 600kJ of energy, for most adults 0 to 3 serves a day is suitable, depending on age, height and activity level. Encourage participants to choose their favourite discretionary food and aim to just eat one serve and/or reduce the amount or number of serves they are eating if it's exceeding recommendations.</li> <li>- <b>Children</b> - encourage special occasions only - eating these foods displaces nutritious food which is essential for growth and development.</li> </ul> |

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MODULE  
1



GETTING STARTED (FACILITATOR NOTES)



| UNIT TITLE               | KEY CONTENT   |
|--------------------------|---|
| <p>The Healthy Plate</p> | <p><b><u>Activity 4: Portion plate (time permitting. Can explain during the shared meal)</u></b></p> <p><b><u>Resources:</u></b></p> <ul style="list-style-type: none"> <li>- Portion plate</li> <li>- Food models (if available)</li> </ul> <p><b><u>Instructions:</u></b></p> <ol style="list-style-type: none"> <li>1. Show participants the portion plate to demonstrate the recommended portions of food in a meal.</li> <li>2. Encourage participants to fill ½ their dinner and lunch plate with vegetables, ¼ protein and ¼ carbohydrates*.</li> <li>3. Use food models (if available) to demonstrate how the recommended serve sizes fit on the plate.</li> </ol> <p>*Potato, corn and pumpkin could be included in the carbohydrate section for people with diabetes as they these vegetables tend to be higher in carbohydrates than salad or other vegetables.</p>  |
| <p>Goal setting</p>      | <p><b><u>Activity 5: Goal setting (time permitting. Can explain during the shared meal)</u></b></p> <p><b><u>Resources:</u></b></p> <ul style="list-style-type: none"> <li>- Goal setting section of Let's Feed the Family book (if using) or goal setting handout</li> <li>- Pens</li> </ul> <p><b><u>Instructions:</u></b></p> <ol style="list-style-type: none"> <li>1. Invite participants to set a short term goal in relation to achieving a healthier lifestyle for the family.</li> <li>2. Explain: goals give you purpose and direction in your life and can inspire you to make changes to your current habits.</li> <li>3. Explain: goals will be different for every person, and do not need to be shared with anyone else.</li> <li>4. Participants are invited to set one to two short-term goals using the Goal Setting section of Lets Feed the Family (if using).</li> <li>5. When setting goals use the S.M.A.R.T. process (possibly discuss one on one if assisting participants to set goals):</li> </ol> |



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