Identifying the Needs and Essential Components of a Food Literacy Program for Parents of Young Children Attending Childcare Centres in Edmonton, Canada

by

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Abstract

Food literacy refers to the combination of "knowledge, skills and behaviours" that will help people to make food informed decisions. Parents are fundamental in the development of young children's behaviours; thus, this represents a great opportunity to explore and improve parents' food literacy which can ultimately impact the development of their children's eating behaviours. Some of these early behaviours are likely to continue once children grow up which can also bring benefits to their health. Therefore, creating initiatives targeting parents and their children will help to enhance food literacy at the household level.

The purpose of this study was to conduct a needs assessment with parents of children attending childcare centres in Edmonton to determine the general attributes and essential components of a food literacy program targeting parents and young children. This qualitative study consisted of a needs assessment guided by a focused ethnography. An exploration of the different components of food literacy was conducted using Vidgen's food literacy model and definition. Parents of young children (aged 2-5 years old) were invited through three childcare centres. Parents must have had at least one child attending childcare to be included and be fluent in English. Three focus groups using a semi-structured interview guide were conducted from November 2017-January 2018 (4-6 participants in each group), a subset of parents also participated in follow-up individual interviews from April – May 2018. Verbatim transcriptions were generated. Data were analyzed using thematic analysis and organized using NVivo 11 software.

The mean age of the 15 participants was 35 years, while 13.3% were men and 86.7% women. No household had more than 2 children. Around 73% of the participants have a bachelor degree or above. The majority of parents were employed full-time (n=9). About half of the participants self-identified as Canadian, while the others self-identified among five other different ethnic origins. The main results of the needs assessment showed that parents are knowledgeable about food literacy. They make sure to have food accessible

at home when they need it through formal or informal planning. Regarding the selection of food, parents pay particular attention to limiting sugar, sodium and processed foods for their households; different factors drive their decisions of specific grocery stores and foods. Parents developed their cooking skills through active and passive learning; they focused on practical, easy and healthy recipes for their households and they used different venues for recipe inspiration. Parents in this study considered diet important for children's health, and they usually have family mealtimes. Furthermore, parents mentioned making decisions about portions sizes but usually respecting children's hunger cues. Parents also indicated that children are interested in learning about food and parents take this as an opportunity to include them in the different areas of food literacy. Overall, parents experienced some barriers such as limited time, but they also had some facilitators to overcome those.

According to parents in this study, the essential components of a food literacy program is a program that includes both, parents and children; involves cooking healthy meals appropriate for children's age; is conducted during the weekends and equally important, is a fun activity. Parents were also highly interested in an online component to be able to learn more information or support each other.

Results from this comprehensive exploration help to understand parent's behaviours, knowledge, needs, barriers, facilitators, and interest regarding food literacy. The exploration along with the general and essential components highlighted in this thesis will help in the future planning of food literacy initiatives targeting this audience.

Preface

The project of this thesis is part of a larger multicomponent intervention developed by Dr. Anna Farmer and collaborators called the Food Literacy Intervention Program (FLIP). This program is a multicomponent intervention with the objective of increasing food literacy in childcare centres of Edmonton addressing the different levels such as children, parents, childcare educators and the childcare centre. The FLIP project was funded by the Monsanto Fund in 2017. The current thesis work addressed the needs of the parents of this larger multicomponent intervention. I was responsible for the review of the literature, data collection and analysis for this thesis under the supervision of Dr. Anna Farmer and Dr. Noreen Willows.

The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name "Development of a food literacy program aimed at parents of children attending childcare centres", ID: Pro00074396, on September 8, 2017. Renewal/approval received by the University of Alberta Research Ethics Board on August 14, 2018. Study Amendment/Renewal ID: Pro00074396_REN1.

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Chapter 1. Literature Review

1.1 Introduction

This chapter reviews the importance of healthy eating behaviours in early childhood and how parents are key players in the formation of these behaviours. It also presents an introduction to the promotion of nutrition and health. Additionally, it presents the effectiveness of health promotion interventions in the childcare setting. It also provides an overview of the current knowledge and conceptualization of food literacy. Finally, it expands on each of the domains of a food literacy approach and the current evidence on food literacy and the relationship of these domains to parents.

The purpose of this thesis was to conduct a needs assessment with parents of children attending childcare in Edmonton to determine the general attributes and essential components of a food literacy program for parents. The needs assessment consisted of an exploration of parents' knowledge, skills, and behaviours regarding the different aspects of a food literacy framework.

This research had two research questions. The first research question was, "what is the status of, needs and interest in food literacy of parents of young children attending childcare centres?" and the second question was, "what are the general attributes and essential components of a food literacy program targeting parents of young children attending childcare?"

The objectives of this study were divided in order to answer the two research questions. The objectives to answer the first research question were: (1) to explore knowledge, skills, and behaviours toward healthy food choices of parents of young children attending childcare centres; (2) to identify the barriers of and facilitators to food skills acquisition and practice from the parent's perspective; (3) to identify which aspects of food literacy parents are interested in knowing more about. The objectives to answer the second research question were: (4) to identify the general attributes of a food literacy program that will promote parent's participation and (5) to identify the essential components of a program aimed at parents of children attending childcare. This thesis will help to better understand the current food literacy situation of parents of young children which can help in the future planning of initiatives targeting this group.

1.2 Background

Children start to establish their eating habits in the early years (Birch, Savage, & Ventura, 2007). A child's health status later in life (i.e. adolescence) can be influenced by the way they develop and grow during their early years (Kudlová & Schneidrová, 2012). Children can develop and grow at their full potential through healthy eating habits (food choices) (Government of Alberta, 2012) and they might maintain these healthy eating behaviours as adults (Movassagh, Baxter-Jones, Kontulainen, Whiting, & Vatanparast, 2017). For this reason, it is important to instill and promote healthy eating habits during this early stage in life (Kudlová & Schneidrová, 2012).

The importance of promoting healthy eating habits in children is part of public health initiatives focusing on the prevention of diseases worldwide. Globally, according to the World Health Organization (WHO), "one in three persons suffers at least one form of malnutrition" (World Health Organization, 2017, p. 1). There are different forms of child malnutrition; however, being overweight is the form that mostly affects children in North America (also known as Northern America region) (UNICEF, WHO, & The World Bank Group, 2018). It is estimated that 7.9% of children under five-years-old are overweight in North America (UNICEF et al., 2018).

In Canada, according to the Public Health Agency of Canada, the prevalence of overweight and obesity (combined) in children 2-17 years of age has decreased from 35% in 2004 to 30% in 2017 (children aged 5-17) (Public Health Agency of Canada, 2018). To our knowledge, there is no information about the prevalence of overweight in Canadian children under five-years-old. In Alberta, the prevalence of overweight and obesity (combined) in children (2-17 years old) was 21.8% in 2004 (Alberta Health Services, 2010). Although the national prevalence of childhood overweight and obesity has decreased, it is still high; therefore, this problem continues to be an important public health concern.

Children with excess weight can be at risk of developing chronic diseases later in life such as cardiovascular disease (Umer et al., 2017) and obesity is associated with mental health consequences (Pizzi & Vroman, 2013). Children with obesity are likely to continue with this problem as they grow into the next stages of life (i.e., adulthood) (Simmonds, Llewellyn, Owen, & Woolacott, 2016); although obesity may not persist into adulthood for all children (Simmonds et al., 2016). Yet, it is important to instill healthy eating habits in children as this could have immediate and long-term benefits for them.

Different factors can influence the weight status of children and among them is the influence that parents and family have on children (Davison & Birch, 2001). According to Davison and Birch (2001), children's eating behaviours are influenced by several factors, such as the food their parents have in the home (exposure) and their food preferences (role modelling) or how much their parents know about nutrition (Davison & Birch, 2001). Additionally, parents also make some important decisions such as when, how and how much food to offer to their children (Birch & Anzman, 2010; Clark, Goyder, Bissell, Blank, & Peters, 2007). Parents of young children are key to health behaviours because they are completely in charge of the decisions that might influence children's weight status and eating behaviours. Therefore, to achieve healthy eating habits in young children, it is crucial also to address their parents.

1.3 Understanding health promotion and health education

In an attempt to help the population keep healthy, the promotion of health at the population level started to be more common in the last years. Health promotion according to the World Health Organization (WHO) is "the process of enabling people to increase control over, and to improve, their health" (World Health Organization, 1986, para. 3).

A more recent and broader definition from the Joint Committee on Terminology says that health promotion is "any planned combination of educational, political, environmental, regulatory, or organizational mechanisms that support actions and conditions of living conducive to the health of individuals, groups and communities" (Joint Committee on Terminology, 2012, p. 14). Health promotion, as seen in this definition, takes into account not only the individual factors but also the environment in which every individual lives.

Health education, akin to health promotion, is defined as "consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills, which are conducive to individual and community health" (World Health Organization, 1998, p. 4). The World Health Organization also mentions that health education is not only about the spreading of information; health education also focuses on "fostering the motivation, skills and confidence (self-efficacy) necessary to take action to improve health" (World Health Organization, 1998, p. 4). For this reason, health education would be an essential approach that health professionals would have to take to promote healthy lifestyles across the population.

1.3.1 Raising awareness of healthy eating

Different countries have food-based dietary guidelines to help their population keep healthy (Food and Agriculture Organization of the United Nations, 2018a). In Canada, the national food guide is Eating Well with Canada's Food Guide (EWCFG) which provides nutrition recommendations to Canadians 2 years of age and older (Food and Agriculture Organization of the United Nations, 2018a; Health Canada, 2011).

Eating Well with Canada's Food Guide recommends the number food guide servings based on the specific age and sex. For example, children from 2-3 years old, according to EWCFG, should eat four servings of vegetables and fruit per day, three servings of grain products, two servings of milk and alternatives and one serving of meat and alternatives (Health Canada, 2011). However, studies have shown that the majority of Canadian children and adolescents are eating fewer food servings than those that EWCFG recommends (Health Canada, 2011; Jessri, Nishi, & L'Abbe, 2016; Pabayo, Spence, Casey, & Storey, 2012).

Moreover, Black & Billette (2013) conducted a study based on data drawn from the Canadian Community Health Survey (CCHS) to determine if Canadians met the nutrition recommendations for vegetables and fruit. They included Canadian males and females from all different ages from young children (2 years) to older adults (51 years or older) (Black & Billette, 2013). Of the 17,509 respondents, they found that 26.3% met the suggested food servings for vegetables and fruit. Fifty four percent of young children (2-3 years) complied with the recommended food servings for vegetables and fruit, representing the largest proportion of all age groups in this study (Black & Billette, 2013). However, half of young children were not meeting the recommendations, which is crucial during periods of rapid development and high nutritional needs. It is also alarming that only 31.2% of children of 4-8 years-old in the sample met the recommendations for vegetables and fruit (Black & Billette, 2013). More efforts are needed to improve the consumption of enough servings of the different food groups in Canadian children, especially for vegetables and fruit.

Furthermore, according to 2004 Canadian Community Health Survey (CCHS) data, the adherence to the EWCFG for the consumption of vegetables and fruit decreased for young adults (males 18.5%) and increased again among older adults (males 41.2%) (Black & Billette, 2013). Despite this, as people grow, the quality of the distribution of the type of fruits and vegetables consumed seems to improve. For instance, the consumption of dark green vegetables in this study is lower in children of 4-8 years old (8%) compared with adults 51 years old or more (13% males and 15% females) (Black & Billette, 2013).

Equally important, according to 2004 CCHS data, since young children (2-3 years old) have the highest consumption of fruits and vegetables in the form of juice (41%) (Black & Billette, 2013), this is an opportunity to create awareness and motivate parents about the benefits of whole fruits and vegetables over juices. Whole fruits provide more nutritional advantages than juice does and also the risk of dental problems can increase if children drink juice in great quantities (Heyman & Abrams, 2017).

Higher intakes of fruits and vegetables are linked to reducing the risk of developing cardiovascular diseases (i.e., stroke, hypertension and coronary disease) (Boeing et al., 2012). Eating Well with Canada's Food Guide is a useful tool to help the general population to understand the amount, number of food servings sizes of each group and other general advice to keep them healthy. However, given that the recommendations for a food group as important as vegetables and fruit are not being met by more than half of the people in the different age groups, there is a clear need to intensify the efforts in the public health sector and make available different strategies to empower Canadians to keep a healthy lifestyle.

1.3.2 Health promotion interventions in the childcare setting

The implementation of health programs can help to enhance healthy behaviours in people. These health programs can intervene at different levels or take into account one or more components. In general, studies using multicomponent interventions have shown to be more effective and have a higher likelihood of having an impact on change behaviour compared to a single intervention (Chawla, Panza, Sirikulchayanonta, Kumar, & Taneepanichskul, 2017; Serra-Paya et al., 2015). The reason for this greater impact is because a multicomponent intervention takes a more comprehensive approach. The socioecological model (which takes into account the different levels: individual, interpersonal, community, organization, policy) can help to better deal with different health behaviours (Golden & Earp, 2012; McLeroy, Bibeau, Steckler, & Glanz, 1988). Thus, there is a call for health educators to "extend our efforts to better address structural levels of social-ecological influence on behavior" (Golden & Earp, 2012, p. 368). Therefore, the work of this thesis aims to address one level (parents) of a multi-level intervention.

Regarding young children, Harvard Center on the Developing Child published a framework to help guide the development of health promotion initiatives for this age group (Center on the Developing Child, 2010). This framework helps to understand from the health promotion lens what is important to address in the development of health initiatives to "strengthen lifelong health" in children (Center on the Developing Child, 2010).

In this framework, they mention "four interrelated dimensions" that are "the biology of health", "the foundations of health", "caregiver and community capacities" and "public and private sector policies and programs" (Center on the Developing Child, 2010, p. 3-4). Family capacities (caregiver) are an important component in the development of health promotion programs toward children, and these can be improved through policies and programs (Center on the Developing Child, 2010; Mistry et al., 2012). Capacities refer to, when "raising children," the "resources" parents have and use (Mistry et al., 2012, p. 1690). These resources could be "financial," "time," "psychological" and "human capital" (Mistry et al., 2012, p. 1690). Health programs can and should aim to improve more than one capacity at the same time to provide a stronger reinforcement for children's health (Mistry et al., 2012).

Financial resources would include the family's "economic ability to purchase material goods or services" (Mistry et al., 2012, p. 1690). Another resource of the family capacity is how much time parents dedicate to their children (Mistry et al., 2012). Psychological resources refer to the "physical and mental health" of parents which will influence children's health (Mistry et al., 2012). Lastly, human capital, in which the most common form is education, refers to the skills and knowledge that parents or caregivers have (Mistry et al., 2012). Therefore, in planning health programs to improve children's health, it is important to also address other factors such as these capacities (Mistry et al., 2012). For this reason, families would be an excellent venue to conduct health promotion for young children.

The childcare setting is an important setting for health and nutrition promotion. In Alberta, Canada there are different categories of childcare but for the purpose of this thesis, we will refer to childcare to settings licensed as "day care programs" according to Alberta Regulation 143/2008, 152/2016 (Government of Alberta, 2008/2016). According to this regulation, "day care program" means "a child care program provided to infants, pre-school children and kindergarten children for 4 or more consecutive hours in each day the program is provided" (Government of Alberta, 2008/2016, p. 2). According also to this regulation, an "infant" is considered a child under 19 months of age, "pre-school child" a child 19 months of age or older and a "kindergarten child" a child 4.5 years of age or older "attending early childhood services" (Government of Alberta, 2008/2016, p. 2).

Almost half of the Canadian parents reported using some type of childcare, and the highest use is for children aged 4 and younger (Sinha, 2014). Children who spend 6-8 hours in childcare commonly receive almost one-half to two-thirds of their daily nutrient intake while

in care (Birch et al., 2007). Since children spend a significant amount of time in this setting, childcare centres represent an important setting for health promotion (Natale et al., 2014). Matwiejczyk et al. (2018) conducted an umbrella review that included twelve different systematic reviews, which among their objectives looked for "the effectiveness of interventions promoting healthy eating behavious" in children attending childcare centre aged 2-5 years old (Matwiejczyk, Mehta, Scott, Tonkin, & Coveney, 2018, p. 2). Matwiejczyk et al. (2018) found that the most effective interventions are those that addressed different levels (multi-component and multi-level: individual and environmental) which regularly included an educational component. Involving childcare educators and parents in addition to the children themselves was associated with positive results (Matwiejczyk et al., 2018).

In order to help children develop healthier eating habits, rather than focusing the intervention on one group, it is important to take a holistic approach by also addressing needs of parents, childcare educators and the childcare setting.

1.4 Food literacy, a new comprehensive approach to health promotion

To understand food literacy, it is important first to understand health literacy. The WHO defines health literacy as "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" (World Health Organization, 2009, para. 1). It seeks to empower people to keep themselves healthy. It is important to pay attention to health literacy because people can have "poorer health outcomes" if they have an inferior level of health literacy (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). Similarly, food literacy is a new emerging concept derived from health literacy, but it is more related to food aspects.

Different authors have developed their definitions of food literacy, yet there is no one "official" way to define this term (Thomas & Irwin, 2011). Truman et al. (2017) conducted a scoping review of 38 included studies of the different food literacy definitions and analyzed them using thematic analysis to identify their main components (Truman, Lane, & Elliott, 2017). They identified six recurring themes across the definitions: "skills/behaviours, food/health choices, culture, knowledge, emotions, and food systems" (Truman et al., 2017, p. 367). According to Truman's review, in 2001, Kolasa et al. was the first to use the term "food literacy" (Truman et al., 2017). Kolasa et al. (2001) defined food literacy as "the capacity of an individual to obtain, interpret, and understand basic food and nutrition

information and services and the competence to use that information and services in ways that are health-enhancing" (Kolasa, Peery, Harris, & Shovelin, 2001, p. 2). However, this early definition, which was based on the concept of health literacy (Kolasa et al., 2001), only includes food/health choices and knowledge themes according to the themes identified in Truman's review (Truman et al., 2017).

The definitions that followed started to include food systems and culture themes among their components, and as the years went by, subsequent definitions included more themes identified by Truman (Truman et al., 2017). According to Truman's review, few definitions were published between 2006 and before 2010, however, in 2010 the number of articles with novel definitions started to increase. Some definitions published from 2011 and onwards also included the skills/behaviours theme within its constructs (Truman et al., 2017).

According to the themes identified in Truman's review, definitions of food literacy normally include more than one theme (Truman et al., 2017). Although no definition included in their review covers all the six themes identified by them, three definitions include five of them (Cullen, Hatch, Martin, Higgins, & Sheppard, 2015; Truman et al., 2017; Slater, 2013; Vidgen & Gallegos, 2014). Slater's (2013) definition includes the themes of skills/behaviours, food/health choices, culture, knowledge, and food system. This definition is based on an adaptation of a health literacy framework (Slater, 2013). Among this definition, Slater included "functional food literacy", "interactive food literacy" and "critical food literacy" (Slater, 2013, p. 623). However, this definition does not include the theme of emotions which in this review was described to "cover the influence of attitudes and motivation" (Truman et al., 2017, p. 367).

Cullen's definition of food literacy includes the themes of skills/behaviours, food/health behaviours, culture, emotions and food systems, excluding knowledge according to Truman's review (Cullen et al., 2015; Truman et al., 2017). Since Cullen's definition does not include knowledge within its constructs, it did not align with the purpose of this study which focused on families.

The other is Vidgen's definition published in 2014, which includes skills/behaviours, food/health choices, knowledge, emotions and food systems, excluding only the culture theme (Truman et al., 2017; Vidgen & Gallegos, 2014). This is the definition of food literacy with a higher number of citations according to this review (Truman et al., 2017).

The collection and analysis of data used in this thesis was based and informed by Vigden (2016) who defined food literacy as:

"A collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat foods to meet needs and determine food intake. It is the scaffolding that empowers individuals, households, communities or nations to protect diet quality through change, and support dietary resilience over time" (Vidgen, 2016, p. 74).

The comprehensive definition of Vidgen was based on a study from experts' perspectives and also on a study based on perspectives of young people in charge of feeding themselves (Vidgen & Gallegos, 2014). This definition was developed by analyzing the results of the two studies (comparing them constantly within and between) using constructivist grounded theory (Vidgen & Gallegos, 2014). This definition was used for this study because it is one of the most comprehensive and because of the rigorous way it was developed representing two combined perspectives.

Most definitions of food literacy have a narrower definition that is focused more on individual skills, while Vigden's and the model that she developed about the relationship of food literacy and nutrition includes different parts that can be adapted to use it at the individual, household, community and population levels (Vidgen, 2016). Food literacy interventions can be developed according to the target audience and adapted depending on the outcomes sought.

1.4.1 Outcomes of food literacy interventions

Food literacy is a promising concept which can help to guide the development of more comprehensive interventions. Enhancing food literacy in people will have different outcomes as a result. Vidgen (2016) developed a conceptual model of the relationship between food literacy and nutrition. Under this model, she shows how food literacy through some "mechanisms" will have an impact on nutrition. The improvement of diet quality is one of the main nutrition outcomes of food literacy through the mechanisms of "more choice," "more pleasure" in the selection of healthy foods and "certainty" of having available food (Vidgen, 2016, p. 67). Other nutrition outcomes included are "food group serve" and "nutrient intake" (Vidgen, 2016, p. 75).

Improvement of food literacy helps to achieve general health due to the improvement of diet quality through healthier food choices (Brichta & Howard, 2013). However, appropriate

expectations are needed when planning and evaluating the outcomes of food literacy interventions due to the different "risk factor pathway" that might also influence chronic diseases and body weight (Vidgen, 2016). Vidgen states that it might be that "food literacy is an enabler of healthy eating and health overall, rather than risk factor" (Vidgen, 2016 p. 81) and that the promotion of nutrition should focus on "well-being," "nourishment" and "sustainability" (Vidgen, 2016, p. 83).

According to the report "Improving Food Literacy in Canada", fewer incidents of food poisoning (food safety) can be another outcome related to food literacy (Brichta & Howard, 2013). Food literacy helps to have fewer adverse incidents with food because of knowing how to handle and store food properly (Brichta & Howard, 2013). One out of eight Canadians get sick from food poisoning, annually; having as a consequence hospitalizations and in extreme cases deaths (Public Health Agency of Canada, 2016). This could be prevented by enhancing "food safety" and by taking care of all the different aspects that can cause food poisoning such as cross contamination. For instance, at the household level, parents would know basic food safety to prevent disease associated with food poisoning in them or their children.

Outcomes of improving food literacy are not restricted to only nutrition outcomes (Vidgen, 2016). As a result of Vidgen's work, other outcomes were identified such as food security, selection of food based on "ethical and sustainable" concerns and people being more connected (Vidgen, 2016, p. 79). Food security can be enhanced throughout food literacy by knowing how to adapt diets to available food resources. For instance, Watson et al. (2017) conducted a study with university students to explore food insecurity and food literacy through focus groups. Among their findings, they mentioned that a situation of food insecurity in college students might be improved, along with other actions, with training specifically in food preparation and budgeting, and thus improving their food literacy (Watson, Malan, Glik, & Martinez, 2017).

Furthermore, initiatives have been implemented to help mitigate food insecurity. An 8-week nutrition education program ('Foodmate') was implemented with homeless young people, and an impact evaluation was conducted through interviews and focus groups with some of the participants after program completion (Meiklejohn, Barbour, & Palermo, 2017). Participants perspectives were that this program helped them to decrease their dependence on food emergency aid, to find peer support and friendships, and to improve their food

knowledge and food skills (i.e. better shopping strategies, cooking skills, food storage, eating habits and better management of their budgets) (Meiklejohn et al., 2017).

Most of the current knowledge on food literacy is based on studies focusing on adolescents (Brooks & Begley, 2014; Ronto, Ball, Pendergast, & Harris, 2016a; Ronto, Ball, Pendergast, & Harris, 2016b; Vaitkeviciute, Ball, & Harris, 2015). For instance, Vaitkeviciute et al. (2015) conducted a systematic review to determine the relationship between food literacy and dietary behaviours in adolescents and found that food literacy may shape the diets of adolescents. However, some of the studies included in the review did not show this relationship, leading Vaitkeviciute and colleagues to conclude that further research in the area should be done (Vaitkeviciute et al., 2015).

Food literacy is learnt generally at home. However, the majority of food literacy studies with adults focused mostly on cooking perspectives or determinants in food preparation (Smith, Dunton, Pinard, & Yaroch, 2016; Wolfson, Bleich, Smith, & Frattaroli, 2016). Therefore, there is room for research in exploring all the components of food literacy among parents.

To our knowledge, to date, there is only one Canadian study that explored food literacy among "youth, young pregnant women and young parents at risk of poor health" (Desjardins & Azevedo, 2013). They found that participants who gained skills with food when they were young were more confident when they prepared food (Desjardins & Azevedo, 2013). According to Vidgen, the model of food literacy can be used as a guide to developing programs adapting it specifically to the target population (Vidgen, 2016). This model represents a promising strategy that can help to guide the development of more comprehensive health programs. To help contain and decrease the current trends of chronic diseases and obesity in adults and children, it will be important to create innovative health programs that could address in a better way the needs of the population.

1.4.1 Factors influencing children's weight status

Davison and Birch (2001) developed an ecological model, which helps to understand the risk factors for child weight status (Davison & Birch, 2001). At the centre of the ecological model are those factors related to behaviours and characteristics of children (i.e. behaviours: dietary intake, sedentary behaviour, and physical activity; characteristics: gender, age). Characteristics of the family will then influence those child factors (Davison & Birch, 2001). Parents may influence child weight status according to: "parents' food preferences", "nutritional knowledge", "parents' dietary intake (role modelling)" and "family interactions"

(Davison and Birch, 2001, p. 5). The factors mentioned in this model are also consistent with other literature, which mentions that parents are a key factor in children's eating behaviours (Birch et al., 2007; Patrick & Nicklas, 2005; Scaglioni, Arrizza, Vecchi, & Tedeschi, 2011; Nicklas et al., 2001). Through role modelling, attitudes, preferences and "feeding practices" parents can help instill eating habits in children (Birch et al., 2007; Patrick & Nicklas, 2005).

Moreover, at a higher level, the environment (i.e. community, society and their demographic characteristics) will also influence child weight status (Davison & Birch, 2001). This environment includes the home environment such as "socioeconomic status, the number of hours worked by parents, accessibility to food and spaces to have physical activity" and the school environment in which children also spend a great part of their day (Davison & Birch, 2001, p. 6). This model shows that the various factors that are at these three levels will interact and influence one to the other on a "bi-directional" way to have an impact on child weight status ultimately (Davison & Birch, 2001). The food provided and the way they provide it, along with other factors both at home and at the childcare, certainly would play a key role in the development of certain eating habits and food preferences in children. Both environments are important in the development of children's eating habits. For this research, special emphasis and focus were given to understand and address the parental factors that shape children eating behaviours.

1.4.2 Food literacy domains and parents

To better understand the dimensions of food literacy, it is important to talk about each one of the domains and the importance of this to parents of young children. The four domains of food literacy are "planning and management", "selection of food", "preparation of food" and "eating" based on Vigden's (2016) definition and model (p. 49).

1.4.2.1 Planning and management

The domain of planning and management, according to Vidgen's definition, refers to "making time for food in your life, having a plan to make sure it happens but also having the skills to make sure the plan is feasible" (Vidgen, 2016, p. 48). This domain means that people would prioritize food in their lives that could translate in prioritizing time or money (or both) to make sure that food is available for their consumption.

1.4.2.2.1 Meal planning and parents

Studies show that adults who plan their meals have better quality in their diets (healthier and more varied) (Ducrot et al., 2017). Moreover, people who plan meals (which means deciding in advance what they are going to eat) have less probability of developing obesity, whether male or female (Ducrot et al., 2017). Parents who involve children in planning meals increase children's opportunities to start making food decisions in the early ages (Vaughn et al., 2016). They will get the chance to add something that they want to eat to the family's diet which would be more convenient at the time to eat because children would be more ready and apt to eat something that they chose themselves. Also, meal planning ensures more meals prepared at home are eaten (Aubé & Marquis, 2011) which will be in most of the cases, a better option than buying processed food or food prepared away from home.

Parents have busy lives, and it is increasingly common for both parents to work outside of the home (Uppal, 2015). Although this represents financial benefits for the family, this change in workforce participation has led to changes in the dynamics at home (Uppal, 2015). More time spent working outside of the home and spending less time in the home also could have an impact on the amount of time dedicated to planning decisions about food. However, planning what to eat either formally or informally is still important to assure that the household will regularly access food even with changes in the environment (Vidgen, 2016).

There is sparse evidence about meal planning for parents of young children, while there is a need to explore this component and what are the attitudes, and behaviours from parents of young children. Exploring these experiences from parents will help to know what their needs are and how these can be addressed through health promotion initiatives.

1.4.2.2 Selection of food

The domain of selection of food refers to being able to "judge the quality of food" and based on that make informed purchase decisions (Vidgen, 2016, p. 55). Also, to meet their "food needs," people will require to be knowledgeable about different sources to get the food needed (including groceries and food items) (Vidgen, 2016). Different studies have investigated what the reasons driving parent's decisions on the selection of food are.

1.4.2.3.1 Food purchase decisions of parents

Vepsäläinen et al. (2015) studied "the roles of home and school environments" on children's diet (Vepsäläinen et al., 2015, p. s67). They found that in anticipating the children's diet, the "home food environment" was the more relevant environment (Vepsäläinen et al., 2015). If a specific food is available at home, it will be more likely that it will be part of the dietary intake of children. Regardless of the presence of healthy food at home, if unhealthy foods (empty-calorie) are available, children are likely to have unhealthy diets for the consumption of these (Vepsäläinen et al., 2015). For this reason, it is important to understand the food choices of parents and what is driving their selection of food to be available at home. This is a key determinant that will shape children's eating behaviours.

A study with parents of children (8-12 years old) sought to understand parents' reasons for buying prepackage or processed food (Horning, Fulkerson, Friend, & Story, 2017). Most parents (57%) mentioned buying processed food because of lack of time (Horning et al., 2017). According to Horning et al. (2017), the more hours parents work (e.g., full-time vs part-time), more parents mentioned "not having time to prepare other foods" as an explanation for buying this type food (Horning et al., 2017, p. 63). Parents may perceive they have a lack of energy and time to select, plan or prepare healthy foods/meals after having worked many hours (Devine et al., 2006).

Nevertheless, lack of time was not the only reason parents mentioned for buying processed food (Horning et al., 2017), some other reasons were that the family liked these foods, the affordable price, kids can easily help in the preparation of processed foods, the lack of creativity in preparing something different and finally that this food would fit the preferences of the entire family (Horning et al., 2017). The majority of these reasons were related to other "modifiable factors" like "parent's self-efficacy for cooking healthful meals" and the capacity of parents to plan meals (Horning et al., 2017, p. 65). Therefore, other areas of food literacy can be improved such as their cooking skills in the domain of food preparation and meal planning in the domain of planning and management to help balance the lack of time of parents who work long periods of time. More information is needed to know if parents of younger children will have the same reasons for buying prepackaged or processed food and how would be the appropriate way to suffice their needs.

1.4.2.3 Preparation of food

The domain of preparation of food refers to being able to "make a good tasting meal" (Vidgen, 2016, p. 55). This domain implies that the person will know how to prepare the food (i.e., familiarity with cooking techniques), how to follow (or adapt) recipes and how to properly use kitchenware (Vidgen, 2016). The domain of preparation of food is greatly related to parents' selection of food. As mentioned in the previous domain, improving other domains such as preparation can help parents to keep healthy diets. Different factors could affect the preparation of food by parents for their families.

1.4.2.3.1 Parents cooking skills

Healthy diets are linked with having the skills to prepare food (Winkler & Turrell, 2010). For instance, a cross-sectional study found that in Australian households where the person in charge of cooking had confidence in preparing vegetables, they regularly purchased a wider variety of them (Winkler & Turrell, 2010). Furthermore, the confidence in cooking skills can go beyond this. There is evidence that parents with lower self-rated cooking skills have a higher likelihood of reporting food insecurity compared with other households regardless of their income (Broughton, Janssen, Hertzman, Innis, & Frankish, 2006).

A qualitative study with adults explored the barriers to cooking from scratch (Lavelle et al., 2016a) which included the perception of saving money by eating "partially or fully prepared food", lack of time, the extra effort of cooking (when they don't have the energy), family preferences requesting certain type of meals and finally, the fear of failing in the attempt of cooking a recipe from scratch (Lavelle et al., 2016a). Time available to cook, as in the other domains, it is also a relevant factor in this domain. Undoubtedly, the fast lifestyles of nowadays have impacted the time spent in the kitchen for people, including families. However, it would be important that time for cooking is consider also a priority in people's lives. Research has suggested that to prepare food and keep healthy diets, the time allocated to this activity might be crucial (Monsivais, Aggarwal, & Drewnowski, 2014).

On the other hand, some of the facilitators for adults cooking from "scratch" identified in the study by Lavelle et al. (2016) were planning in advanced what to eat and how "good cooks" identified themselves (self-efficacy) (Lavelle et al., 2016a). Other facilitators found were the motivation to eat to be healthy and achieve well-being, and finally, people were getting inspiration by recipes seen on TV, cookbooks, social media and so forth (Lavelle et al., 2016a).

The barriers to and facilitators of preparing food previously mentioned here, were explored with participants aged between 18 to 65 years old (Lavelle et al., 2016a). However, there is no information on how similar or different these barriers and facilitators would be for parents of young children. It is possible that the dynamics of these households would change because of the nature of the age of their kids. There is a need to explore how parents of young children navigate the domain of preparation of food and their specific barriers to and facilitators of developing specific health programs targeting their needs.

The interrelation between food preparation and managing time shows that the domains of food literacy can influence one or the other in a reciprocal way. Parents may have enough abilities and repertoire to prepare food for their family, but they also need to improve their planning and management to have enough available time and food to cook and achieve their nutrition needs.

1.4.2.4 Understanding the way we eat

The last domain of food literacy is eating which according to Vidgen "includes both the act of eating and the consequences of eating, including nutritional status" (Vidgen, 2016, p. 59). This domain also refers to being aware of the need for a balanced diet, also how this balanced diet could look different for each member of the family. Thus, food literate parents would have to be able to determine appropriate portion sizes for themselves and their children. Lastly, the eating domain goes beyond the nutrition aspect of eating; it also refers to the benefit of eating socially (Vidgen, 2016). Parents of young children will make crucial decisions around eating such as which food will be available, and the quantity of this food; also, decisions about sitting together as a family at the table, and when and how they will offer food to children (Birch & Anzman, 2010; Nicklas et al., 2001).

1.4.2.5.1 Family mealtimes

Eating together as a family is important in the development of eating habits of young children. Having at least three family mealtimes a week is associated with healthier diets in children and lower risks of childhood obesity (Hammons & Fiese, 2011). Furthermore, family mealtimes have more benefits beyond the nutritional aspect, such as "family connectedness" and "family closeness" which could positively influence children's emotional well-being (Fruh, Fulkerson, Mulekar, Kendrick, & Clanton, 2011, p. 20). Also, family meals seem to improve the development of language and intellect (Fruh et al., 2011), which will be crucial in young children.

In a study conducted with low-income mothers of preschool children about having family mealtimes, they found that even when mothers experience barriers in having family mealtimes, they still try to have them because of their own "childhood memories" despite them being either "good or bad" experiences (Malhotra et al., 2013). In this way, family mealtimes also have emotional meaning for the children experiencing them, and they might also want to have this bonding when adults with their children. In this study, mothers were also motivated to have family mealtimes because of the added benefits; families communicating during mealtimes can help since children learn at these early ages about "values" and "problem-solving skills" from their parents (Malhotra et al., 2013).

In another study with parents of schoolchildren (8-10 years old), they also mentioned liking having family mealtimes because of what they represent ("sharing/bonding" time) (Fulkerson et al., 2011). However, the constraint of time on their busy lifestyles make these family mealtimes a challenge for them (Fulkerson et al., 2011). Children involved in food preparation was one of the wants of parents in this study; nevertheless, parents of children of these ages need guidance on how to incorporate their children in an effective way which will not make them invest more time of the already limited time they have (Fulkerson et al., 2011).

Translating this to the preschool ages, helping parents to involve young children in the food preparation could benefit both, parents and children. Children could be exposed more to food which will help them to be more apt to accepting new food and to start developing their cooking skills from the early ages. This early involvement could help them once they are of school age to be more skilled to help with food preparation and help their parents to save more time, thus, having fewer challenges and barriers in having the family mealtimes together.

1.4.2.5.1 Parental role modelling

One important component of family mealtimes is the chance that children get to see their parents eating with them. The reason for this is that parents act as a role model for their children, especially during the early ages. Parental role modelling can be defined as "parents actively demonstrate healthy eating for the child" (Musher-Eizenman & Holub, 2007, p. 970). Ideally, this should be done intentionally with the purpose to motivate their children to copy this same behaviour or positive attitude toward healthy foods. Nevertheless, some parents could show some "unhealthy eating behaviours", which even if involuntarily, they would also convey a message to young children with their actions (Vaughn et al., 2016).

An example of positive parental role modelling is when young children who see their parents eating and enjoying healthy food (i.e., fruits and vegetables) in front of them are more likely to have a higher consumption of this healthy food as well (Natale et al., 2014). Role modelling is an important component in the interaction between parent and child. The potential benefits of role modelling represent a great opportunity to create awareness in parents and help them to model more positive behaviours toward healthy food in their children.

1.5 Study rationale

In Canada, there have been good initiatives to increase food literacy among children at elementary schools and the general Canadian population (Fung et al., 2012; Health Canada, 2016). However, to date, to our knowledge, there are no studies exploring food literacy of parents of young children, and this study will help to fill this gap in the literature. Lastly, this study aligns with the most recent Health Canada 2016-17 report on plans and priorities which is "to continue promoting awareness, understanding, and use of dietary guidance and nutrition information to support Canadians in making healthy eating decisions" (Health Canada, 2016, p. 39). More information is needed to understand the components of an effective food literacy program for parents of young children.

Having parents with more food literacy could result in children having a better diet quality. Furthermore, since children also learn by role modelling from people who are closest to them, children growing up in a literate food household would have the opportunity to learn from their parents. This positive environment could help children to acquire the knowledge, skills and behaviours to develop a healthier relationship with food that can also be carried into their adult lives.

1.6 Purpose, research question and objectives

The overall purpose of this study was to determine the content of and interest in a food literacy program for parents of young children through a needs assessment and exploration of parents' knowledge, skills and behaviours regarding the different components of food literacy using Vigden's model as a framework to guide this study.

The research questions for this study are:

1. What is the status of, needs and interest in food literacy of parents of young children attending childcare centres?
2. What are the general attributes and essential components of a food literacy program targeting parents of young children attending childcare?

The objectives of this study were to answer each of the research questions:

Objectives to answer research question 1:

a) To explore knowledge, skills, and behaviours toward healthy food choices of parents of young children attending childcare centres.
b) To identify the barriers of and facilitators to food skills acquisition and practice from the parent's perspective.
c) To identify which aspects of the concept of food literacy parents are interested in knowing more about.

Objectives to answer research question 2:

a) To identify the general attributes of a food literacy program that will promote the parent's participation.
b) To identify the essential components of a food literacy program aimed at parents of children attending childcare.

Chapter 2. Methods

This study was part of a larger study at the childcare level known as the Food Literacy Intervention Program (FLIP) which is part of the Nibbles & Wiggles Research Program at the University of Alberta (Farmer, 2018). The FLIP study was a multicomponent intervention addressing childcare directors, childcare educators, children and parents with the purpose of increasing food literacy in this setting. This current study (FLIP-parents need assessment) aimed to address specifically the parental sphere of the larger food literacy study. This research was a qualitative study of parents' needs to inform the content of a food literacy program. Therefore, this study was a needs assessment to understand the needs of parents and to know what was important to include in the development of a food literacy program targeted to parents.

2.1 Needs assessment

This study consisted of a needs assessment guided by a focused ethnography. As a first step to planning a program, a needs assessment is recommended by Bartholomew et al. (2016) in his Intervention Mapping Model (Bartholomew et al., 2016). A needs assessment "helps to understand the present situation (what is) and compare the current status to one that is more desirable" (Bartholomew et al., 2016, p. 212). Therefore, this needs assessment helped us to determine parents' current situation regarding food literacy and to determine their needs ("desired state") and the components of an ideal food literacy program. As part of this needs assessment, a scan of the literature was done looking for programs already in place in the City of Edmonton and surrounding area with the same interests that parents were aware of and which were available that could meet their needs.

To conduct this qualitative research, we used a focused ethnography. We wanted to explore the experiences and perspectives of parents, which is the reason for choosing an ethnographic approach. Ethnography is a research method in which back to its beginning the researcher was embedded in a specific group of people with the aim to understand them and describe them (specifically their culture) through mainly participant observation (Mayan, 2009). However, focused ethnography was selected because it is pragmatic: "it is a more targeted form of ethnography and is led by a specific research question" (Mayan, 2009, p. 39). Furthermore, focus ethnography can be conducted in a shorter period of time as it concentrates on a specific problem involving a "small group of people" which can help to decide what to do about it (Mayan, 2009). Wall (2014) states that "focus ethnography preserves the essential nature of ethnography and allows researchers to explore cultural

contexts that cannot be studied using conventional ethnographic methods" (Wall, 2014, p. 5). Therefore, with the assumption that parents had shared experiences due to their similar circumstances (a specific state of food literacy and its relation of having young children), focus ethnography helped us to explore those in an enclosed way. Focus ethnography helped to answer our specific question about the status and interest in food literacy of parents of children attending childcare centres.

2.2 Conceptual Framework

Vidgen's food literacy definition, and model of food literacy and the relationship with nutrition (Vidgen, 2016) were used as a framework to guide this study. Vidgen's food literacy definition and model is the most comprehensive to date. This definition includes four domains that are important to develop a healthy relationship with food (Vidgen, 2016). These domains are "planning and management", "selection", "preparation" and "eating" (Vidgen, 2016) which are described in detail elsewhere.

In order to develop a targeted food literacy program, it is important to decide which domains of food literacy are more important to the people who will benefit from the program. Therefore, we framed the questions (and exploration) of our needs assessment around the four different domains of Vidgen's food literacy definition and model (Vidgen, 2016) explained in the literature review of this thesis. We explored what parents know and do regarding planning and management, selection of food, food preparation and eating behaviours and knowledge. We also explored their interest in some of these domains. The use of this definition as a framework allowed us to study more food literacy constructs as they relate to parents to address their current food literacy status and inform the most appropriate content for a program. Vidgen's model also shows at the outer circles, the importance of the context of each person because it will also be influenced by the social determinants of health such as social support, income (poverty) and geography (Vidgen, 2016). The environmental situation was kept in mind while selecting different childcare centres to be invited to participate in this study.

2.3 Sample

The sample in this study was comprised of parents of children attending different childcare centres in Edmonton. Purposeful sampling was used to select childcare centres and snowball sampling to select participants. Because the research team already had connections with some childcare centres, some of them were purposefully invited to participate based on

their characteristics. Furthermore, Etikan et al. (2016) state that "the idea behind purposive sampling is to concentrate on people with particular characteristics who will better be able to assist with the relevant research" (Etikan, Musa, & Alkassim, 2016, p. 3). In this case, our purpose was not only to include parents, but parents of children of a specific age (less than five years old and attending childcare centres). Snowballing refers to those childcare directors that helped us identify potential participants (Atkinson & Flint, 2004). The aim was to recruit approximately 18 participants from different childcare centres. The reason for this number of participants is because we wanted to have around 6 participants for each one of the three focus groups planned to be conducted (refer to data generating strategies: focus group on page 26).

2.3.1 Access and recruitment

Recruitment was built on previous recruitment strategies of childcare centres that participated in a nutrition and food program called the Food Literacy Intervention Program (FLIP) implemented by the same research team but implemented with children, childcare educators and cooks in fifteen childcare centres across Edmonton (Farmer, 2018). The recruitment for this study occurred from October 2017 to January 2018. We purposefully chose childcare centres based on how involved and interested they were in the previous program. We then looked at the socioeconomic status of the location of the childcare centre according to their postal codes in SuperDemographics ("SuperDemographics," 2017) and clusters. The four childcare centres that we invited, according to SuperDemographics, were from the clusters A ("affluent class"), cluster L ("comfortable apartment dwellers") and cluster G ("up the ladder") ("SuperDemographics," 2017).

Four childcare centres from different income categories were chosen based on representativeness and geographical vicinity to the University of Alberta. An e-mail was sent to childcare directors (Appendix 1) along with a recruitment poster (Appendix 2) and information letter (Appendix 3) asking if they were willing to participate in this extension of the program and to assist with recruitment of parents. Three childcare directors agreed to participate, and one director did not respond. The childcare directors extended an invitation to parents to join this study through e-mail and flyers posted in the childcare centre with the researcher's contact information.

Parents from one of the three childcare centres contacted the principal investigator (PI) to participate in the study. To increase participation from the other two childcare centres, the PI (PBC) posted information posters on the childcare centre's bulletin board and provided

print copies of the information letter to the directors to be distributed to each parent. Notwithstanding these additional recruitment efforts, this did not improve the response from parents.

As a final recruitment strategy, the PI proposed to the childcare directors that the PI visit the childcare centre personally to invite parents by giving them flyers when they pick up their children from the childcare at the end of the day. One of the childcare centres agreed to try this recruitment strategy and a suitable date and time to meet parents were arranged. The PI met with parents at this childcare centre and recruited more parents. By using different venues and recruitment strategies (i.e. e-mail, flyer posted, a hard copy of the invitation and in person), it increased the chances of getting more parents interested in this study.

Due to the lack of response from parents at the third childcare centre, the PI contacted and invited two others childcare centres that did not participate in the previous FLIP program but had previous contact with the FLIP team and high interest in participating in a research study. Both agreed to participate. However, only parents from one of the childcare centres were interested in participating. As noted, the recruitment was an ongoing process, while we had one focus group arranged we were still recruiting parents and arranging times in other childcare centres for the upcoming focus groups. In total, three childcare centres licensed as "day care programs" according to Alberta Regulation 143/2008, 152/2016 (Government of Alberta, 2008/2016) participated in this study. Two of the childcares were from cluster L ("comfortable apartment dwellers") and one from cluster G ("up the ladder") ("SuperDemographics," 2017).

Inclusion criteria

In order to be included in the study, participants had to have at least one child attending childcare; be older than 18 years old; be able to communicate orally in English; and needed to be the legal guardian of the child. This meant that both mother or/and father was eligible to participate, and either biological or legal, step-parents, or other legal guardians of children.

Exclusion criteria

Any relative that was not in direct charge as the child's caregiver.

2.4 Data generating strategies

Common data collection strategies used in focused ethnography are semi-structured interviews, focus groups and participant observations (Cruz & Higginbottom, 2013). For this study, multiple data collection strategies such as focus groups and semi-structured interviews were used. An overview of how this study was conducted is presented in figure 1.

Conducting focus groups with parents was chosen as the primary data collection strategy because this was a way to explore the general experiences of parents. The focus group (FG) setting provided the parents with an opportunity to listen to each other and helped them to form their responses and to have an enriched conversation together. Also, because meals and eating are social behaviours, it was useful to have people come together in a group to share their different experiences and perspectives regarding food literacy.

It was planned that a subset of individuals who participated in the focus groups would be invited to participate in the individual interviews; however, when asked if they had interest in continuing to participate in the individual interviews, all participants showed interest. The reason for using a second data collection strategy was to get a deeper understanding of some personal experiences which helped to illuminate the information gathered from the focus groups. In qualitative research, as stated by Sands and Roer-Strier (2006) "used together (more than one method or data sources), the researcher obtains a more comprehensive picture of the phenomenon under study" (Sands & Roer-Strier, 2006, p. 239).

Data from FG and interviews followed a sequential triangulation; this means that "the results of one method were essential for planning the next method" (Morse, 1991, p. 120). Thus, the data from focus groups were the core component and it helped to build the next step and plan the information to be gathered with interviews which was complementary. The combination of these data collection strategies was beneficial to the study because it could complement the data gathered from the other to have an enriched view of their experiences (Lambert & Loiselle, 2008).

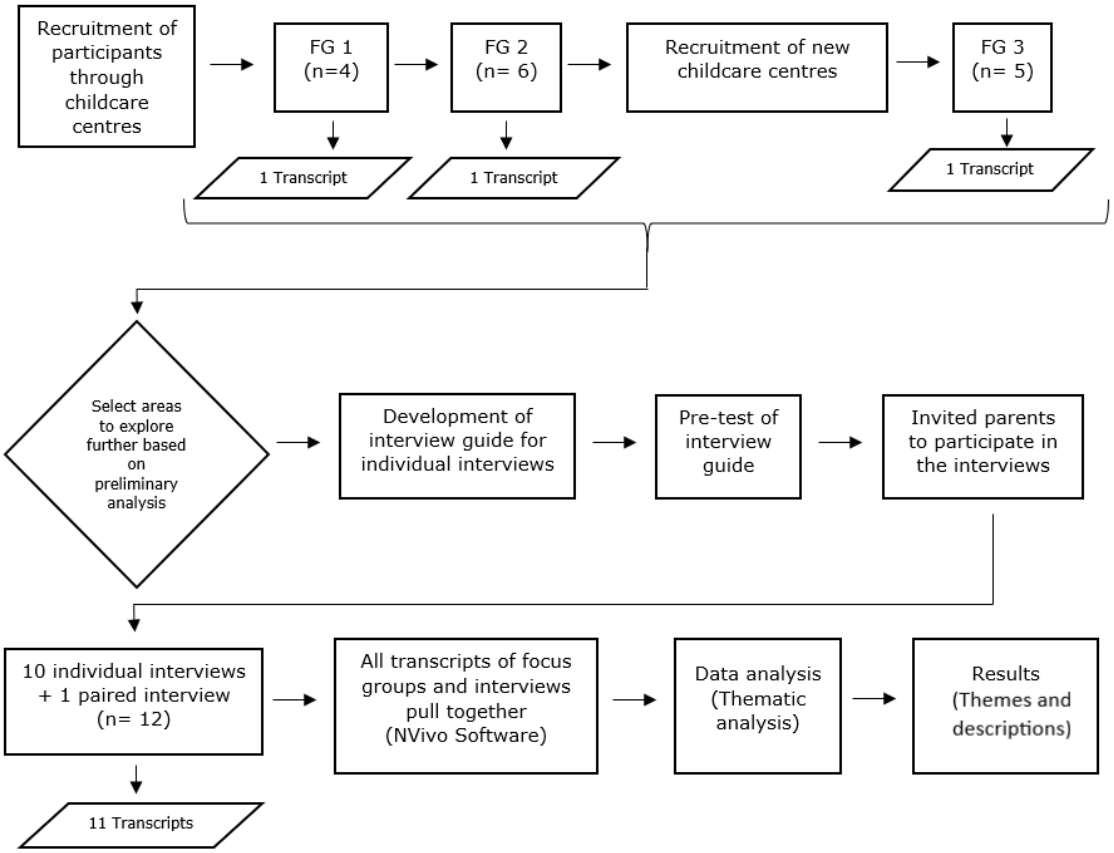

Figure 1. Flowchart of study methodology

2.4.1 Focus groups

Focus groups (FG) are defined by Kitzinger (1994, p. 103) as "group discussions organized to explore a specific set of issues... the group is focused in the sense that it involves some kind of collective activity… crucially, focus groups are distinguished from the broader category of group interview by the explicit use of the group interaction as research data" (as cited in Stalmeijer, Mcnaughton, & Van Mook, 2014). FG show the social context and the interactions among participants and food literacy determinants. Data derived from the FG represents the core part of data collection because it brought a broader insight into parents' perspectives of food literacy.

Focus groups in this study were planned to be conducted with parents of children 3-5 years old. However, due to low-interest from parents of preschool-aged children attending childcare centres, we accepted all parents of children attending childcares interested. Thus, some parents of children younger than three years-old took part in this study. Regarding the group composition, the literature suggests that participants "share at least one important characteristic" (Barbour, 2007, p. 59). The "one important characteristic" that was shared among participants was being parents of young children attending childcare centres.

The FG sessions were composed each of four, six, and five participants for a total of 15 participants across three focus groups. Because of low recruitment, it was decided to move forward in conducting a focus group with at least five participants interested per childcare centre. According to the literature, in general, between 6 to 8 participants is recommended with the reasoning that if the group is smaller than six, some participants can dominate the discussion making it difficult to generate rich data with few people interacting (Liamputtong, 2011). However, according to Kitzinger and Barbour (1999), focus groups with a minimum of three to four participants can also be conducted (as cited in Barbour, 2007). The literature also suggests that groups bigger than eight people could be burdensome either to manage and to analyze the discussion (Barbour, 2007; Liamputtong, 2011). In this study, one focus group had four participants because one of the five participants notified the PI of an absence a few hours in advance of the meeting. The PI decided to continue with the focus group discussion rather than reschedule because a focus group with four participants was still feasible. Parents of this focus group were very talkative and the dynamic of the focus group worked out smoothly, which is why it was decided to keep the focus group with

four participants as valid data for the study. Of the other two focus groups, one was conducted with six participants and one was conducted with five participants.

The length of the focus group was from 52 minutes to 1 hour and 30 minutes. The time of the discussion varied depending on the flow of the conversation. The first focus group lasted 52 minutes perhaps because there were four participants. The second and the third focus group were 1 hour and 20 min and 1 hour and 30 min, respectively. Interviews longer than 2 hours can leave participants and moderator exhausted (Liamputtong, 2011; Stalmeijer et al., 2014).

All focus groups were held at the respective childcare centres where children of those parents were enrolled. Childcare directors helped with facilitating a quiet room, with enough space and chairs for the number of parents participating. The times of the focus groups varied depending entirely on the availability of the parents. Two focus groups were conducted during the morning and one focus group in the evening.

Prior to starting the discussion, the moderator (PI) reminded participants that the meeting was going to be recorded and they were asked to read the information letter if they had not done so (Appendix 3) and sign consent forms (Appendix 4). The PI also told them that their participation was voluntary, and they were free to not answer a question if they did not feel comfortable. As part of the ground rules and to ensure confidentiality, the moderator told participants that topics discussed in the meeting should be kept confidential and not discussed outside the session. The moderator proceeded to tell the rules of the discussion, and one note taker was present at each focus group session to take notes of verbal and non-verbal communication among the participants. At the end of the focus group, parents were asked to sign another consent form to signal their willingness to be contacted in the future to participate in the individual interviews and to receive information about the results.

The research team planned to conduct three focus groups. According to Barbour, there is no "magical" number for how many focus groups, but she mentions that at least two FG with participants of shared characteristics can help to give a general understanding of the patterns (Barbour, 2007). After conducting three sessions, saturation of data was assessed which means according to Grady (1998, p. 26) "new data tend to be redundant of data already collected" (as cited in Saunders et al., 2018). The PI reviewed the vast amount of information gathered from the focus group and determined that no more focus groups were needed. The research team decided to continue gathering a deeper understanding of the

information gathered from the focus group with the individual interviews with the same parents.

It was important to have a moderator who understood food literacy and what this term implies to be able to have a fluent conversation between the participants. As a dietitian, the PI had a deep understanding of food-related topics and was able to lead the discussions that had arisen and redirected them to the topic of interest, if necessary.

Interview guide for focus groups

The first interview guide for the focus groups was developed by exploring all the domains and components of Vidgen's definition of food literacy (Vidgen, 2016). Specifically, the domains and components that were explored for the interview guide were the following (Vidgen, 2016, p. 49):

1. *Planning and management*
    a. *Prioritize time and money for food.*
    b. *Plan food intake (formally and informally) so that food can be regularly accessed through some sources, irrespective of changes in circumstances or environment.*
    c. *Make feasible food decisions which balance food needs (e.g. nutrition, taste, hunger) with available resources (e.g. time, money, skills, equipment).*
2. *Selection*
    a. *Access food from multiple sources and know the advantages and disadvantages of these sources.*
    b. *Determine what is in a food product, where it came from, how to store it and use it.*
    c. *Judge the quality of food.*
3. *Preparation*
    a. *Make a good tasting meal from whatever food is available. This includes being able to prepare commonly available foods, efficiently use common pieces of cooking equipment and have a sufficient repertoire of skills to adapt recipes (written or unwritten) to experiment with food and ingredients.*
    b. *Apply basic principles of safe food hygiene and handling.*
4. *Eating*
    a. *Understand food has an impact on personal wellbeing.*

b. *Demonstrate self-awareness of the need to personally balance food intake. This includes knowing foods to include for good health, foods to restrict for good health, and appropriate portion size and frequency.*
c. *Join in and eat in a social way* (Vidgen, 2016, p. 49)*.*

The questions were formulated based on these domains but oriented to parents and families. The questions followed the same order of the food literacy domains and questions exploring program content and program delivery were also included at the end (Appendix 6). First was used Vidgen's domains but enhanced by a review of the literature. Collectively, available resources form literature were applied to the development of the interview guide. A review of the literature that used focus groups to explore similar themes with parents was conducted (i.e., planning and management, selection of food, preparation of meals and eating) and some questions used there were adapted. Some questions used in the domains of selection of food, preparation of food and eating were adapted from Smith et al. (2016) who based their questions on Family Systems Theory and Social Cognitive Theory (Smith et al., 2016).

The interview guide was reviewed by asking the FLIP team, who are nutritionists, what they thought about the questions. The PI also asked them about some modifications that could be done to improve the interview guide. Focus groups were then conducted and minor changes were made to the interview guide according to how the focus group discussion with each group flowed and depending on their answers to keep a smooth conversation but still covering everything on the guide.

Demographic characteristics of the participants were included by filling out a form before starting the focus group. Data collected from participants included age, gender, number of children, and the first three digits of their postal codes (Appendix 5). These data were collected to have a better understanding of the context and environment of the participants which would help in the interpretation during data analysis. After data collection, an amendment was made to the Research Ethics Board and additional information of participants was collected through a three-survey question on the secure REDcap platform. Those additional questions included the highest level of education, occupation at the time of the focus group and ethnicity to which they feel they belong (Appendix 5). This additional data were collected because from some responses the research team realized that parents were highly educated and had limited time but it was important to confirm this if possible by knowing the level of education and occupation of parents.

2.4.2 Semi-structured individual interviews

Semi-structured individual interviews were the second and complementary data collection strategy for this study. Individual interviews were selected to have a deeper understanding of parent's opinions. In this type of interview, the interviewer developed a guide with a set of questions to be covered during a conversation with the interviewee (Dicicco-Bloom & Crabtree, 2006). Parents were asked during the focus groups if they were interested in participating in the individual interviews of this study. All the parents mentioned being interested in being contacted to continue participating. After the pre-test of the individual interview guide, all parents were contacted through e-mail to ask them if they were still interested in participating in individual interviews.

Parents were given the option of being interviewed either in-person or by telephone. If in-person, convenient locations for them were chosen such as on campus at the University of Alberta, coffee shops or as a last option in their house. In total, 12 parents showed interest in participating in individual interviews, with a total of 11 interviews. All the interviews, either in-person or by telephone were audio-recorded with verbal consent of participants. The interviews lasted between 20 – 30 minutes. One interview, with a married couple, lasted 45 minutes. Field notes were taken by the PI after each interview to record overall impressions, observations and main preliminary findings of the interview.

Paired interviews were not selected as a data collection strategy; however, because of the convenience of one couple that participated in the focus group, the research team agreed to interview them at the same time. The PI acknowledges that the dynamic of a paired interview involves "the researcher interviewing two people at the same time and in the same place so that the two interviewees can interact during the interview" (Wilson, Onwuegbuzie, & Manning, 2016, p. 1551). Since this was not planned to be analyzed as a paired interview, the strategy used was to keep the information answered from each participant as separate entity and an effort was made to have both equally participate in the interview.

<u>Interview guide for individual interviews</u>

After conducting a preliminary analysis of the transcripts from the focus groups, the PI determined which aspects of food literacy and program development were worth exploring further. From this information, the PI developed a more focused interview guide for the individual interviews. The data revealed that some aspects of parents' confidence in reading

food labels and knowledge, and interest in them could still be further explored. Furthermore, some questions regarding the development of the program, individual facilitators and barriers to attend such a program, the opinion of an online community support group, where participants look for nutrition information and which websites they consider offer trustworthy nutrition information. The interview guide was designed to last between 20 – 30 minutes and included six questions with some prompts to get more focused and detailed information from participants (Appendix 7). The interview guide was developed during March 2018 and then pre-tested with six people during March and April 2018.

Results of the pre-test and changes made to the interview guide

Six people in total were interviewed for the pre-test of the interview guide. People interviewed included two married couples and two others, none of them were parents but they were married or older than 30 years-old to simulate the participants of the study. The pre-test aimed to evaluate the appropriateness of length, understandability of the questions, the flow of the questions (organized in a logical and natural way), clarity of what was being asked, and clarity of terminology; therefore, a convenience sample of people participated in the pre-test. They were asked the questions as if they were parents of young children, explaining to them for whom these questions were formulated and asked them to have that mindset in answering them. At the end of the interview, they were given an evaluation sheet of the questionnaire including five Likert-scale questions (Appendix 8) to evaluate the different domains previously mentioned and one additional question for comments. The evaluation was developed using a Likert scale type based on close-ended questions on aspects to evaluate for the pre-test of a questionnaire (Grimm, 2010).

Half of the participants said that the questionnaire was worded in a way that was easy to understand. Two questions were not completely understood by half of the participants in the pre-test. The length of the interview was appropriate (between 20 to 30 minutes). Most of the participants agreed that the questionnaire was organized in a logical and natural way, while only one participant indicated to somewhat agree. The flow between the questions three and four was changed to achieve a more natural flow.

Among participants in the pre-test, four of them agreed that they clearly understood what they were being asked. Two people somewhat agreed because they commented that a couple of questions were too broad, and they did not know what to answer. Those questions

were changed to be more focused and to let the participant know what we specifically were asking. All the participants agreed that they clearly understood the terminology used.

The PI used different food products as a probe to ask questions about knowledge and confidence in reading food labels. However, during the pre-test, some participants suggested that parents might feel less overwhelmed with fewer options to choose from, so it was decided to have only one specific food product for the real interviews. Cereal was chosen as the food product because during the focus groups, cereal was one of the products that parents mostly mentioned as reading the food label in the grocery stores.

2.5 Data analysis

Thematic analysis (TA) was used to analyze the transcripts from focus groups and individual interviews. This analytic method matches with other studies using focused ethnography as a method and using focus groups and/or interviews as data collection strategies as well as in this food literacy study (Kilian, Salmoni, Ward-Griffin, & Kloseck, 2008; Spiers & Wood, 2010). TA is "a method for identifying, analyzing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79).

Different varieties of thematic analysis exist. The theoretical thematic analysis was selected for this study because this analysis was based on existing theory and theoretical concepts (Braun & Clarke, 2013). The reason for this is because food literacy domains were already defined. Furthermore, the data were categorized into the overarching themes identified as the domains of food literacy by using Vidgens' model (Vidgen, 2016).

2.5.1 Transcription

The first step to analyzing the data was to become familiar with the data (Braun & Clarke, 2006). This was done by generating verbatim transcriptions from the audio recordings of focus groups discussions and individual interviews (Mayan, 2009; Wong, 2008). The PI (PBC) transcribed the information from all focus groups (three) and interviews (eleven) by listening to the audios and writing verbatim everything that was said. Field notes were also used to give the context of the audios from FG. Names of participants were removed from the transcriptions to keep their anonymity (Mayan, 2009). The transcriptions for both the focus groups discussions and the individual interviews were done in a locked office at the University of Alberta.

To increase the rigour of the quality of the transcriptions, another transcriber listened to the audios and reviewed each of the transcriptions to ensure the accurateness of the data. After this, the PI reviewed each transcript while the recording from interviews and focus groups were running (Poland, 1995). In total, each transcript received three reviews after being transcribed. The PI did the first review. Another researcher did the second one, and the third one was done by the PI again to see and review changes if made by the other researcher. The purpose of these three reviews was to detect possible errors and also to become familiar with the data before coding (Poland, 1995). A systematic tracking of these different revisions was kept in the audit trail of the PI for purposes of enhancing rigour. Notes of initial thoughts were taken during this step and kept in the PI's research journal. Furthermore, for purposes of improving rigour, reflective notes were also noted in the PI's research journal.

Analyzing data in focused ethnography is an iterative and self-reflective process. For this reason, the data were transcribed and preliminarily analyzed to be able to plan or change strategies in future data collection (Higginbottom, Pillay, & Boadu, 2013).

2.5.2 Creating initial codes

The second step was generating initial codes (Braun & Clarke, 2006). The activity of creating codes means to "identify aspects of the data that relates to your research question" (Braun & Clarke, 2013, p. 206). The PI read the transcripts several times and started identifying what the data were telling and what was interesting in the data related to the research question. Coding can vary depending on the variety of thematic analysis used; because this is a theoretical thematic analysis, the coding of the data was done by considering the research question and the domains of food literacy as a framework (Vidgen, 2016).

The coding was conducted using NVivo 11 Pro software (QSR International, n.d.) to help organize the data due to the vast amount of information. Nevertheless, using software helps only with the organization. The PI was still in charge of doing the critical thinking and took an active role in the analysis of the data. The PI conducted complete coding, which is to "identify anything and everything of interest or relevance to answer the research question within the entire dataset" (Braun & Clarke, 2013, p. 206). In the following steps of the analysis, some of these codes were either collapsed, collated or discarded, according to the relevance to the research question and the analysis.

Most of the codes initially identified were "data-derived or semantic-codes" which are codes that "reflect the semantic content of the data" (Braun & Clarke, 2013, p. 207). After coding the entire data set (all focus groups and interviews transcripts), the PI revised those codes to see the possibility of merging some of them if the meaning and label of code was remarkably similar. On occasions, some of the codes were merged one into the other, or a new code and label were created with a higher level of meaning to include and reflect the meaning of all of them. It is important to note that codes were created by selecting specific quotes from the data set, if using the same label to code different quotes, those were already available to select in the software which made the coding process more effective.

2.5.3 Creating candidate themes

The next step in TA was searching for themes (Braun & Clarke, 2006). A theme can be seen as "an implicit topic that organizes a group of repeating ideas", in this case, the codes (Auerbach & Silverstein, 2013, p. 38). This phase consisted of starting to analyze the codes and arranging them in a way that the PI could start looking for patterns and relationships between them. The PI used mind-maps as a visual aid to look for patterns (Appendix 9). A mind-map is a "diagrammatic method of representing ideas, with related concepts arranged around a core concept" (Mind map, n.d.). In this case themes were at the centre and the secondary roads represent the secondary ideas. It could gather together a large amount of data giving an overview of the candidate themes.

In practice, the candidate themes were developed using the NVivo software. Different names were created ("nodes") to illustrate a higher level of different codes. Those codes were located into those "nodes". For those codes which seemed to not fit with other codes or themes, they were allocated to a special node and folder named "miscellaneous" and later revisited. Codes were not completely discarded but rather reallocated if they no longer had a good fit the candidate themes.

Folders were also created to organize the information (themes and codes) depending on the different research questions. This organization helped to keep data separated and to have more organization during the analysis of them. Overarching themes ("nodes") of planning and management, selection, preparation and eating were created to allocate the different themes created from the dataset. Most themes of this study were identified using a "top-down" approach which means "to use data to explore theoretical ideas or bring those to bear on the analysis" (Braun & Clarke, 2013, p. 178) as the domains of food literacy. However, other themes were also identified using a "bottom-up" approach which means

based on "what is in the data" (Braun & Clarke, 2013, p. 178). For instance, as the data analysis evolved, an extra overarching theme named parents, children and relationship with food was also identified which was not part of the domains of food literacy. Also, in this phase, different levels among the themes were reviewed to start to organize them in an understandable way.

2.5.4 Revising and defining themes

During the next phase of thematic data analysis, the research team revised the candidate themes and decided together which themes were still considered themes or which ones need to be broken down into subthemes (Braun & Clarke, 2006). The next step consisted of defining and naming themes (Braun & Clarke, 2013). This phase was critical to determine the coherence among the codes and the themes. To be able to visualize the codes in relation to their themes, the PI created tables using Microsoft Word in which the different codes were allocated under the theme name to help the research team in this revision.

In order to conduct this step, it was important to define and refine the themes. The research team identified what was the essence of each theme and labelled them. An agreement was made if the name of the themes reflected the codes they were kept. Some decisions made on this step were to change names of themes, to create subthemes or to remove or reorganize different codes. The names used for the themes were concise and representative. Then each theme was checked against the codes collated to ensure that themes represented the codes. After doing this step, a final read of all the data set (all transcripts) was done by the PI to make sure that the themes represent the overall story of the data collected. Audit trails with all the steps, revisions, and notes were kept throughout all the analytic process to show how the interpretations of the PI were evolving until the final result of this thesis.

The final step in thematic analysis was writing the report of the findings (Braun & Clarke, 2006). This final step of the analysis is included in the "results chapter" of this thesis. The analysis process does not stop with the name of the themes; an important and crucial part is to write the narrative which is the "story about the content and meaning of the data" (Braun & Clarke, 2013, p. 252). The data analysis used for the narrative of this thesis followed mostly a descriptive approach which uses extracts (quotes) more "illustratively" to "tell the story of the data" (Braun & Clarke, 2013, p. 252). Some quotes from parents' discussions were extracted to illuminate each theme better and give power to parents' voice. Some of the quotes were shortened to keep the most representative part of them

that helps to illustrate their description. Shorter quotes are represented with "[…]". Furthermore, when parents emphasized certain words, those words were underlined. Letters separated by hyphens are words that parents lengthened in their speech. Quotes were not cleaned after transcription which means that repeated words or sounds were kept to maintain the fidelity to parents' speech.

2.5.5 Rigour

Different sets of qualitative criteria are available for defining the quality of the data (Mayan, 2009), but for the purpose of this thesis, we followed the criteria for ensuring quality proposed by Lincoln and Guba (1985) and their definition of trustworthiness. Trustworthiness is one aspect used to ensure the quality of the data. Trustworthiness means that "the findings of an inquiry are worth paying attention to" (Lincoln & Guba, 1985, p. 290). According to them, trustworthiness can be achieved through a number of strategies which address different components such as "credibility", "transferability", "dependability" and "confirmability" of the data (Lincoln & Guba, 1985, p. 300-301).

In order to enhance credibility of the data in this study, we used strategies that could make it more likely to produce "credible findings" (Lincoln & Guba, 1985). We had a prolonged engagement with the data (Lincoln & Guba, 1985) by having focus groups with weeks or months of difference between them provided the opportunity to reflect on each and to continue with the data collection. The development of verbatim transcriptions by the PI and the several revisions of them also helped with this engagement. Also, to enhance the credibility of the findings, we used methods of triangulation of data to review different data sources (focus groups and individual interviews) (Lincoln & Guba, 1985). Finally, two other researchers were part of the critical analysis and revision of the codes and themes which helped to evaluate the findings of this thesis. A final read of the entire data set (transcriptions of focus groups and interviews) field notes and reflective notes was made to ensure that themes represented the data.

As qualitative researchers, we can only provide enough description ("thick description") of the participants of the study and the judgments of the findings being transferable are made by the "potential appliers" (Lincoln & Guba, 1985, p. 316). For this reason, a "thick description" of participants was collected and provided such as the age of parents, sex, level of education, ethnic origin, number of children, occupation, a general idea of the income level and the setting of recruitment (childcare centres).

The way that we addressed dependability is with one of the techniques proposed by Guba which is the audit trail (Lincoln & Guba, 1985). To have high-quality standards this audit trail was developed in detail and showing all the decisions being made in the study. Finally, to ensure confirmability this can also be done through "the audit process" (Lincoln & Guba, 1985). This can be done by reviewing the audit trail developed for this study but also the systematic reflective notes as part of the reflexivity process undertaken in this study. Relevant materials were made available to establish auditability of this study which will help with the confirmability (Lincoln & Guba, 1985). For instance, the available materials are the detailed audit trail including reflective notes at the different steps of data collection/analysis, transcriptions and audios from focus groups and interviews and written and electronic field notes.

Among these available materials, documents addressing the rationale of the decisions made regarding the research method and the data collection strategies chosen are also included. Furthermore, documents regarding the process of how the analysis evolved in this study including, codes, candidate themes, final themes and written findings (results of this thesis), as well as the forms (and their development process) of each interview guide used, are available.

In general, several efforts were made to achieve quality in the findings of this thesis which would make them relevant to look at in the health promotion area specifically in the emerging food literacy area.

2.6 Ethics

Ethics approval was obtained before started. Some specifications regarding this study are that participants received a $25 gift card as an appreciation of their participation in the focus group. Also, those parents participating in the interview received another $25 gift card. There was no risk in participating in this study. For the pre-test, each participant received a ten-dollar coffee shop gift card as a thank you.

Participation in every step was completely voluntary. The data is kept confidential. Only the PI, the Research Ethics Board of the University of Alberta and Dr. Anna Farmer have access to the data.

Chapter 3. Results and discussion: Exploration of status, needs and interest in food literacy in parents of young children

3.1 Sample characteristics

A summary of the demographic characteristics of the participants is shown in table 1. In total 15 parents participated in this study. All of them participated in the focus groups, and a subset of those (n=12) participated in the individual interviews. Parents participating in this study were on average 35 years old (range of 31-40 years old). Most participants were women (n= 13) and the remainder were men (n=2). Although couples were encouraged to participate, only two couples participated (composed of one woman and one man each). No father participated by himself and 11 mothers participated by themselves.

Of the 15 parents participating in this study, four had one child in their household, and eleven participants had two children. Most of the parents were employed full-time. Parents participating in this study were highly educated, the majority had a university degree. Six of them mentioned having completed a Bachelor's degree, four a Master's degree and one person mentioned having a Doctorate. The percentage of Canadians with a diploma/degree at a Bachelor's level or above is 35% for people 25 – 34 years old and 33.4% for people aged 35-44 years old (Statistics Canada, 2017a). Even if we included the two missing values as not having a Bachelor's degree, the percentage of parents with a Bachelor's degree or above would be at 73% which is higher than the distribution for Canada and Alberta (32% for Alberta in both range ages previously mentioned) (Statistics Canada, 2017a).

Regarding their ethnic origin, we had a variety of ethnic origins among the participants. Six of them self-identified as Canadian, three as Latin, Central and South American origins, one as American, one as East/South East Asian origins, one as Western European and one as European. All the participants were fluent in English and were able to communicate in the focus groups and interviews. This is important due the multicultural composition of Canadian society whereby a different ethnic background could mean different practices related to food. In this study, seven participants (nearly half) self-identified to an ethnic origin other than Canadian.

We asked participants to identify the first three digits of their postal codes and then searched for sociodemographic status by searching for the information regarding income by

the area of each participant (forward sortation area©) (Statistics Canada, 2018a). According to the area of these participants, seven of them would be slightly below the middle class regarding the median total household income for Edmonton, Canada ($94,447 in 2015) (Statistics Canada, 2018a)

Five participants would be close to the median total household income for Edmonton, Canada, ranging from $80,000 to $89,000. Three participants would be among the upper the middle class of Edmonton, Canada with a median total household income of $99,000 or more according to the forward sortation area©. However, these are approximations based on the area where each participant lives. Their specific socioeconomic status could vary toward upper or below the middle class depending on their specific income characteristics.

None of the areas where participants live have a median income below the cut-off point for low income established by Statistics Canada. The cut-off points for a family of four would be $46,362 (in 2016) for an area with a population of 500,000 and over like Edmonton (Statistics Canada, 2018b). Regarding bigger families, a family of six members would need a minimum income of $59,304 (Statistics Canada, 2018b) which is surpassed by the median income for the areas of these participants. We acknowledge that we cannot state that no low-income participants participated in the focus groups because we do not have their specific income to make this statement. However, based on the area where they live, participants are most likely to be close to the middle class, part of the middle class or upper the middle class based on Edmonton total median income for households.

Table 1. Characteristics of study participants

Characteristic	**Parents (n=15)**
Age, y (mean [range])	35.2 (31-40)
Gender (n)	
Female	13
Male	2
Number of children in the household (n)	
1	4
2	11
Occupation	
Employed full-time	9
Employed part-time	4
Missing	2
Highest level of education	
Some college but no degree	1
CEGEP or other non-university certificate or diploma	1
Bachelor's degree	6
Master's degree	4
Doctorate	1
Missing	2
Ethnic origin	
Canadian	6
Latin, central and south American origins	3
American	1
East and South East Asian origins	1
Western European origins	1
European origins	1
Missing	2
Median total income of households (Statistics Canada, 2016 Census of Population. Searched by Forward sortation area©*) (Statistics Canada, 2018a)	
Less than 60,000	0
$60,000 to $69,999	6
$70,000 to $79,999	1
$80,000 to $89,999	5
$90,000 to $99,999	1
$100,000 and over	2

* Forward sortation area (FSA): "is a way to designate a geographical unit based on the first three characters in a Canadian postal code" (Government of Canada, 2015, para. 1).

3.2 Qualitative analysis (results): Exploration of status, needs and interest in food literacy of parents of young children

This chapter presents the results and discussion for question one of this thesis: "What is the status of, needs and interest in food literacy of parents of young children attending childcare centres?" In order to answer this question, we had three objectives: (a) to explore knowledge, skills, and behaviours toward healthy food choices of parents of young children attending childcare centres; (b) to identify the barriers of and facilitators to food skills acquisition and practice from the parent's perspective; and (c) to identify which aspects of food literacy parents are interested in knowing more about.

Knowledge, skills, behaviours, barriers and or facilitators of parents related to food literacy were analyzed and categorized into overarching themes following the existing food literacy domains based on Vidgen's definition (2016). Therefore, the overarching themes for this present study were planning and management, selecting food, preparing food, and eating. During data analysis, the PI identified different data that did not fit specifically into those existing domains and decided to create another overarching theme with this. This additional theme was "parents, children and relationship with food". More details about each overarching theme, themes and subthemes under those will be described.

3.2.1 Planning and management

The overarching theme planning and management, as defined by Vidgen in the definition of food literacy (Vidgen, 2016), includes aspects related to what people do to make sure that they have food available. In this case, it would mean practices that parents must do to be able to access enough food for their household, for them and their families. Four themes were categorized into this overarching theme (figure 2). Two of them were aligned with some of the components included on the "planning and management" domain of food literacy detailed by Vidgen which refers to when people plan what to eat either in a "formal" or "informal" way (Vidgen, 2016). Based on this and the dataset, we created the themes "Formal planners" and "Informal planners" to illustrate how parents approach this in their day to day lives. Other themes were identified from the data which were related to barriers and facilitators that parents face in the attempt to plan or manage time to be able to have food available at home. The names of these other two themes are "lack of time is a barrier to plan" and "parents save time in planning and preparation".

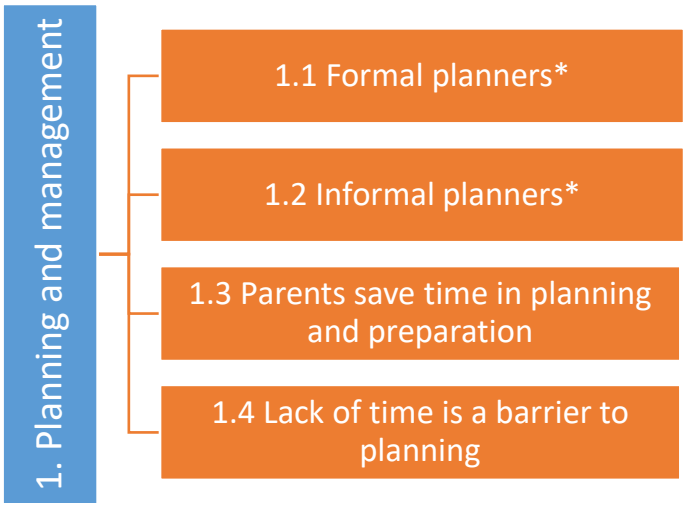

Figure 2. Overarching theme of planning and management with themes identified

*Theme based on the components of the domain of planning and management of Vidgen's food literacy definition (Vidgen, 2016)

3.2.1.1 Formal planners

This theme was named formal planners because parents organize themselves in a structured way to plan what food they will need for the week or the following days. According to this, "formal planners" usually allocate time on one day of the week to create a meal plan for the following days. For instance, one mother mentioned, "Yes, it's usually on a Sunday, I sit down the best I can and prepare for the week" (Participant 3, mother, focus group, November 2017). Furthermore, other mother also mentioned that she plans what they are going to eat days in advanced "[…] I try at least to plan 4 or 5 days ahead" (Participant 14, mother, focus group, January 2018). Typically, after formally planning and knowing what they need to buy for the week, they will create a grocery list to help with this. Parents planning what to eat would be a starting point to give them that security that they will have the food they need available at home which could facilitate the consumption of more nutritious food (this would be if they included this type of foods and succeeded in following the meal plan).

Studies have shown that planning meals is linked with a better quality of the diet, including a greater variety of foods (Ducrot et al., 2017) and higher food consumption for the food

group "fruits and vegetables" (Crawford, Ball, Mishra, Salmon, & Timperio, 2007). Crawford et al. (2007) conducted a cross-sectional survey with a sample of 1136 Australian women from 18 – 65 years old to know which behaviours were related to a greater consumption of fruits and vegetables. They evaluated this by asking "How many servings of [fruit/ vegetables] do you usually eat each day?" (Crawford et al., 2007, p. 257) and this was later contrasted with a 24-hour recall from the same participants. They also collected information about participants' food behaviours, such as for shopping, preparation, meals and eating. Questions about planning meals were included as frequencies on a Likert-scale style among the questions of shopping behaviours, such as "I plan meals for the week before I go shopping" (Crawford et al., 2007, p. 259). Authors found that women who "planned meals for the week prior to shopping", "enjoyed food shopping", "planned the evening meal in the morning", "planned what they would eat for lunch on the following day" along with other behaviours had a greater probability of eating two or more servings of fruits in comparison with those women who did not performed those behaviours (Crawford et al., 2007, p. 258).

In a larger cross-sectional study including 40,554 participants (France), the Nutri-Net-Sante, they assessed specifically the association of meal planning with "diet quality" and weight status (Ducrot et al., 2017). In this study, they defined meal planning as "to plan ahead the foods that will be eaten for the next few days" (Ducrot et al., 2017, p. 3). The authors categorized participants as "meal planners" and "non-meal planners" according to the answers to their questions for behaviours related to this. Unlike the study conducted by Crawford et al. (2007), the study conducted by Ducrot et al. (2017) evaluated the entire diet and not only one specific food group. They collected food intake information from participants through 24-hour dietary records and calculated how much of the reported food was eaten by using photographs and portion sizes to have a more accurate estimation of participants' food intake (Ducrot et al., 2017).

Results from this study showed that participants who mentioned planning (meal planners) were more likely to follow "the French nutritional guidelines *(French: Guides nutritions du Programme national nutrition santé (PNNS))*" (Food and Agriculture Organization of the United Nations, 2018b), and the food variety in their diet was greater. Furthermore, they found that planning meals for women was associated with a decreased chance of becoming obese (OR = 0.79 [0.73–0.86]) and overweight (OR = 0.92 [0.87–0.98]). Similarly, planning meals for men was associated with a lower chance of developing obesity (OR = 0.81 [0.69–0.94]) (Ducrot et al., 2017). As concluded by these authors, planning meals and educating people on this behaviour could also be part along with the strategies to prevent

obesity (Ducrot et al., 2017). It would be worth it to study if the same association with planning and adherence to Canada's Food Guide is possible to have more conclusive information and to be able to include this type of strategies within food literacy interventions.

Regarding planning meals, if two parents live in the household, there is the possibility that either the mother or the father does the meal planning, or it is a shared activity. However, in our current study, we cannot make statements of who is in charge of doing the meal planning at home since this was not a focus and was not a question that was explored during the focus group. Nevertheless, a father participating in a focus group mentioned something interesting which could convey the idea that the meal planning is predominantly a role gender activity in the household: "My wife so does most of the planning even as little as we do right now" (Participant 12, father, focus group, January 2018).

From the mothers' responses, we could imply that they do the meal planning themselves because they mentioned planning in the first-person singular rather than in plural. Nevertheless, male presence in food activities such as planning has been increasing over time. For instance, Harmack et al. (1998) conducted a study in the US and found that among 1,204 surveyed males, from households where both male and female were living, only 23% of males mentioned participating in the meal planning (Harnack, Story, Martinson, Neumark-Sztainer, & Stang, 1998).

Twenty years have passed, and more recent data (2013) show that even if women are still the "main meal planner" in comparison with men, there has been an increase in households sharing this activity (Flagg, Sen, Kilgore, & Locher, 2013). In a "secondary analysis of cross-sectional data" of the 2007–2008 US National Health and Nutrition Examination Survey, Flagg et al. (2013) analyzed how adults divided the activities in their households (Flagg et al., 2013). In a sub-sample of 3195 adults (older than 20 years old) living with a partner, they found that 54% of males reported performing "meal planning/ preparation of food" as a shared activity in their households (Flagg et al., 2013). Although this is based on US population, we can assume that it is likely going to be similar among the Canadian population. This situation would be important to take into account because the previous recommendation in the development of education programs to improve "meal-related tasks" was to focus on females (Harnack et al., 1998). However, as we see an increase in male participation, it would be worthy to analyze and evaluate the inclusion of males in nutrition education programs related to these topics.

Another relevant thing to note about formal planners in our study is that if someone has a specific eating pattern, they will have to be more careful and pay more attention to this planning to be able to follow it and make sure food and meals meet their eating preferences and nutritional needs. For instance, a mother in the present study mentioned during a focus group that because she is vegan, she needs to plan what to eat: "I am vegan, [for planning?] so I do plan each meal for every day of the week" (Participant 6, mother, focus group, December 2017). Having a diet with the restriction of other foods could jeopardize the consumption of enough nutrients that satisfy the individual nutritional needs if it is not followed or balanced properly. For this reason, with eating patterns that exclude other foods, it is necessary to create a well-balanced meal plan to meet their nutritional needs.

According to Dietitians of Canada, "a healthy vegan diet should include a variety of foods to make sure all nutrient needs are met" and they mention that this will require some planning and knowledge about which foods are good sources of the nutrients needed (Dietitians of Canada, 2018b, para. 7). The same situation would exist with other eating patterns such as following a gluten-free diet in which people would also have to plan their meals to help them meet their nutritional needs (Dietitians of Canada, 2018a).

From data collected from the present study, we identified that parents organize their schedules to be able to get the food they need. The way they organize themselves is by typically choosing one specific day of the week to visit the grocery store. This scheduled day means that parents create the time to allocate to this specific activity. The day that parents select varies depending on their activities, and what works best for them. Most parents mentioned going during the weekends or around the days that they do not work or have more time available to do this.

> We usually do grocery shopping in the weekend, and make sure that, that, you know, we buy enough vegetables and meats and fruits, such like, um, for the week.
>
> Participant 4, mother, focus group, November 2017

> I do buy like on Sundays, as well […] A lot of the times I go on the running for more milk or whatever like during the week kind of thing, like a second thing but usually I try to do it once a week, on Sundays.
>
> Participant 7, mother, focus group, December 2017

> Generally, Thursday or Friday 'cause I don't work those days. And you definitely like if you can get there when they just filled the shelves they are significantly better.
>
> Participant 15, mother, focus group, January 2018

In this way, these "formal planners" attempt to organize themselves in a way that they can make sure that food will be available for when they need it in their households. Certainly, in planning for oneself and or the family, to be organized would be a key element of succeed. Closely related to organization, parents also use other strategies that will help them in their attempt to plan meals for their families. Of note, some of those strategies were collated and allocated into a theme about facilitators to plan meals named "parents save time in planning and preparation" (p. 48).

3.2.1.2 Informal planners

Informal planners refer to parents who use other strategies other than "formally planning" to make sure that they have food available at home. Some parents during the focus groups in this study mentioned that they do not plan at all. However, when analyzing the data, even though parents do not plan in a structured way, there is still some planning involved even if it is minimal or on the same day. Therefore, it was decided to name this theme as "informal planners" rather than no planners, which captured the main idea of the characteristics of what parents do. Some of the characteristics of these parents included that they make sure that they buy the basic ingredients or foods whenever they do grocery shopping. They mentioned that if they have a pantry or fridge that is well-stocked with the basic ingredients, they can cook with the food they have available:

> We don't plan at all we just, like say we always have to have chicken breasts we always have to have salmon. We always have to have, like, cert-, yeah, different type of fish in the freezer always like, you know, and then so we buy like two or three weeks of meat at a time, portion it into a family size, freeze them, pull them out at the morning and then grab whatever vegetables and, and sides to go with it.
>
> Participant 1, mother, focus group, November 2017

> I make sure that my kitch- my pantry is really well stocked. Like we do, basically if we have rice, um, tortillas and pasta on hand, I can make dinner with whatever we have. So, I have these three ingredients, I'm gonna make dinner out of that and that's what works for me. So, I don't do a whole lot of planning, I just make sure to keep my pantry really well stocked.
>
> Participant 2, mother, focus group, November 2017

Contrary to "formal planners", informal planners mentioned that they don't have a specific day to do grocery shopping, instead of this they buy whenever they the need to do so:

> I don't- with the exception of [being? big?] Costco© runs. I don't like to do like a one big day food shop, I prefer to stop on my way home um, and just pick up what I need, you know, a couple times a week.
>
> Participant 2, mother, focus group, November 2017

> Well, we are kind of, random, I guess. We don't have a set schedule of when we do groceries. Um, we try to keep our fridge, like, um, we try, um, and when we do groceries to stock with some of the basics that we usually use like um milk or fruits and veggies.
>
> Participant 9, mother, focus group, December 2017

Another reason for not having one specific day to do groceries is because of the different responsibilities that parents sometimes have. They will not have a fixed schedule where they can choose one specific day and time to do their groceries. Therefore, they will try to do it whenever they have a chance. During one focus group, when asked if they have one day to do grocery shopping, one mother explained how the different activities during the week for her or her children make having a specific day to do this activity more difficult:

> No. No, it depends on swimming lessons, on b-a-l-l-e-t and everything else. Especially, during the holiday season, it's like, sometimes I go on my lunch hour and I do grocery shopping. Sometimes I go after daycare or sometimes I go on the weekend after swimming lessons, I have absolutely no plan (laughing).
>
> Participant 8, mother, focus group, December 2017

Some parents mentioned that they do not plan what they are going to buy at the grocery store; therefore, they do not use lists or something that could guide them to know which items they will need to look for. One of the reasons is exemplified by a mother who said that she is so used to buy the same things each week, so she does not need to stop and think or list out what she will buy:

> I am so like routine. So, there isn't a lot of variety actually. It's like "okay, my husband likes broccoli or cauliflower, last week he ate broccoli he got cauliflower this week" […] So, I don't, I don't have to- unless it is a staple that we are out of, then I would put it on the list to remind myself that I need it. But, um, the weekly things that we kind of get every week, I very rarely I use a list anymore.
>
> Participant 7, mother, focus group, December 2017

Another reason for not planning what to buy at the grocery store is because they wait until seeing what food is on sale at the grocery store. They first buy whatever is on sale in the store and based on that they decide what they are going to eat for that day or the following days. Therefore, their plan or diet will vary depending potentially on the seasons and on what food is on sale at the grocery store: "So whatever is on sale. Really, that is, that I am

driven by budget. And I'm not usually driven by, you know, I am gonna buy this b-r-a-n-d of something. So, it's really, it changes every week" (Participant 8, mother, focus group, December 2017).

It is still not clear in the literature what would be considered as meal planning or no meal planning. Because some could consider people who "planned the evening meal in the morning" (Crawford et al., 2007, p. 258) as planners, while in contrast with other sources, identify planners as people who planned "ahead the foods that will be eaten for the next few days" (Ducrot et al., 2017, p. 3). Certainly, further studies in this area would be needed, because it would be important to differentiate if planning few days in advance has higher benefits than planning on the same day or planning one day in advance.

For this study, it is important to mention that by no means we aim to convey the idea that practices from parents categorized into formal planners are better than those practices from parents categorized into informal planners or vice versa. To our knowledge, there is not enough evidence to determine if practices from "formal parents" were better than those practices of "informal planners". Both practices imply the use of different strategies with the same common goal, which is to have food available in the household to cook/eat, no matter the circumstances. Parents detailing practices categorized into informal planners seemed to be confident and comfortable with the use of those strategies in their households.

3.2.1.3 Parents save time in planning and preparation

Parents have some facilitators regarding planning meals. Some of these facilitators are based on technology and preparing meals in advance. Technology that facilitates planning meals for parents includes mobile applications. Some of the functionalities mentioned by these parents are that they use applications to create grocery lists and to create meal plans.

Regarding software applications focused on creating grocery lists, they can easily add something to it if they realized that they are missing some specific foods in their household. Parents of this study were aware of and open to trying this type of technology to help their day to day meal plans. We can imply that they are eager to use technology such as this because they were closer to the young adult age group than to the older adults group. Literature suggests that young adults use, in general, more technology than older adults (Olson, O'Brien, Rogers, & Charness, 2011).

Use of health technology (nutrition apps)

According to the 2016 General Social Survey, 76% of Canadians own a smartphone which is even higher than Canadians owning a laptop (71%) or a desktop computer (50%) (Statistics Canada, 2017b). The use of the internet is very high among Canadians, results of internet usage for the different ages shows that 96% of Canadians 25-34 years old use internet daily which includes the age of some of the participants of this study (Statistics Canada, 2017b). Among Canadians aged 35-44 years old, 93% of them use the internet daily (Statistics Canada, 2017b). It is important also to note, that participants of this study live in the province of Alberta and according to this survey this province has 94% of internet users which is the highest percentage by provinces all across Canada (Statistics Canada, 2017b).

Technology, such as applications, has some potential benefits in helping parents to plan meals in different aspects. For instance, a mother said, "And then we usually use an app as a grocery list which we find quite helpful too" (Participant 9, mother, focus group, December 2017). One benefit presented by parents during the FG discussion is that some of these apps have the advantage that they are shared with their partners, and then two people have access to add more items to the list:

> We keep a list on an application so, whenever we notice that we are missing something we just add it there and it just makes it easier.
>
> Participant 12, father, focus group, January 2018

> It's shared so we can, I can see if something- he adds something, so we don't depend on, on, one of us having the list.
>
> Participant 13, mother, focus group, January 2018

Another function of some apps is that they can help to create a menu and help with the schedule and ingredients of the same menu. A mother participating in one of the focus group mentioned that she had recently downloaded an app to help with that.

> So that is the meal planning app that I downloaded actually, is you input all the ingredients for your meal and then when you select it on the calendar that you are gonna make that meal you can have the grocery list that pops up.
>
> Participant 14, mother, focus group, January 2018

Currently, the use of mobile applications is increasing. There exist applications to help people to instill healthier habits. Schoeppe et al. (2016), conducted a systematic review (30

studies) including different health apps to evaluate their efficacy in improving behaviour outcomes such as diet, sedentary behaviours or physical activity, some of these apps aimed to improve one, two or the three of these behaviour outcomes (Schoeppe et al., 2016). Moreover, some apps also aimed to improve health-related outcomes such as weight status, glucose, blood pressure and so on (Schoeppe et al., 2016). They found that apps are promising in effectively change health behaviours, being interventions combining apps with some other plan of action more effective than those interventions with only apps (Schoeppe et al., 2016).

Another study conducted by Franco et al. (2016) analyzed the principal characteristics of the nutrition apps most widely used. They also compared how these apps conduct their "dietary assessment" in terms of technology and strategies (Franco, Fallaize, Lovegrove, & Hwang, 2016). They found that among the well-known apps included (13 in total), the main characteristics were that 9 of them have the capability of users to input the food that they ate (food dairies) and based on this they could have a "prospective recording" food intake (Franco et al., 2016). These apps also included some features related to physical activity and mostly a way to determine "energy balance" (Franco et al., 2016) which is calculated based on the number of calories consumed contrasted with the number of calories burned. Authors mentioned that these nine well-known apps did not include any capabilities to plan meals, and the other four remaining did include features related to this but without the feature of "food diaries" (Franco et al., 2016).

A very useful tool that combines these two options (and more) of having food dairies and being able to plan a menu is the online/web-based tool "Supertracker" which was launched in 2011 by the USDA (United States Department of Agriculture) (Haven, Chang, Herrup, & Maniscalco, 2013). However, in June 2018 with 27 million users, the tool was discontinued (United States Department of Agriculture, 2018) because the private sector already has made available several tools with the same objectives, and they mentioned that the USDA would invest in more efficient and current tools to help the American population to keep them healthy (United States Department of Agriculture, 2018).

There is limited evidence of the efficacy of apps focused on these areas of food literacy. Seeing these emerging technologies and how fast this area evolves, more research regarding applications specialized in meal planning or helping with grocery shopping would be worth conducting. If health professionals know the efficacy of these new tools, their use

could be suggested along with other strategies in the planning of multicomponent interventions that aim to help people reach their health behaviour or healthy eating goals.

Big-batches and freezer meals as a strategy for meal planning

On the other hand, another facilitator in planning meals is an overlap between the planning and preparation of meals. Parents will plan and prepare meals ahead of time, and they will store this food to have them available at another time of the week. One mother mentioned that her strategy was to plan and prepare ahead "I try to plan ahead. I do a lot of freezer meals on days when my husband is not working and he can hang out with the baby" (Participant 14, mother, focus group, January 2018). Similarly, other mothers mentioned as a strategy for preparing extra food and either putting it on the fridge or freezing it to have it available for later.

> And what we are doing now is that because we don't plan as much, we try to cook large batches of meals. So, we can have twice the same food, so we freeze it, so that's how we are planning I guess now.
>
> Participant 13, mother, focus group, January 2018

> And then, um, we put, immediately put a smaller amount in the fridge for our lunches the next day.
>
> Participant 1, mother, focus group, November 2017

Often some themes would seem to also fit into another overarching theme, but this is because of the interrelated relationship between the domains of food literacy (Vidgen, 2016). Sometimes we cannot completely separate themes from one domain from the other, but the decision to include some themes into one overarching theme and not the other was a thoughtful decision based on what was the main meaning of parents of sharing this. Even if this would seem to belong to both overarching themes (planning and preparing food), it was decided to include it with facilitators of meal planning because the main purpose of preparing big batches or doing freezer meals is to help in the planning and to have food available at home throughout the week.

For this reason, quotes coded as "big-batch meal prep to plan, freezer meals as a technique for meal planning and leftovers help in the meal planning" were included in this theme of "parents save time in planning and preparation" under the overarching theme of planning and management because they mentioned that it was their way to plan.

3.2.1.4 Lack of time is a barrier to planning

Parents also experienced some barriers related to planning meals. The main barrier that parents experienced regarding planning was the lack of time. They mentioned that their busy lifestyles make it difficult for them to plan. The lack of time was illustrated when during a focus group a mother described how chaotic a day for her and her children could look like at the time when they arrive home and prepare everything that is needed:

> Usually it takes like an hour between getting home and kids going to bed. So, in that hour, includes bath time, it includes, you know, dishes, it never stops (laughing). So, it's- it's really busy [...] Sometimes, you know, I make like a huge pot of spaghetti and I will do like l-u-n-c-h-e-s and d-i-n-n-e-r-s like for three days and that's why it's usual to do like a one big meal and get it through. So, I have no plan.
>
> Participant 8, mother, focus group, December 2017

Furthermore, we currently live in a society where it is increasingly common that both parents are in the workforce and with children, they also have other responsibilities making it harder for them to allocate time to plan. A mother mentioned that their barrier was that both parents work so this complicates things in terms of planning:

> We try to, I guess, like for me is very difficult because I own a business. My husband works full time as well now, too. So, and then we have our 2-year-old daughter, so it's very hard to plan.
>
> Participant 5, mother, focus group, December 2017

Certainly, for parents, not having the time to plan meals or to do other things related to their family diet could have repercussions on parent's decisions regarding the type, quantity and variety of food available in the household. Morin et al. (2013) conducted a study where they evaluated "the associations between the perception of self-efficacy related to meal management and food coping strategies among working parents with preschool children" (Morin, Demers, Turcotte, & Mongeau, 2013, p. 44). Perceived self-efficacy is defined by Bandura (1986) as a "judgement of one's capability to accomplish a certain level of performance" (Bandura, 1986 p. 391). They conducted a cross-sectional study through "self-administered questionnaires" with 417 parents who were working and had preschool children. As a result, they found that working parents that had a higher self-efficacy was linked to meal planning with one week in advance, being able to prepare meals that are healthy and also preparing meals ahead of time (Morin et al., 2013). This result is important to consider because if we aimed to increase self-efficacy of working parents of preschool children through health programs, this could help in some of the aspects of food literacy

such as planning meals which potentially could help to have healthier diets in the household.

Related also to lack of time as a barrier, some parents found it difficult to plan healthy and balanced menus because they mentioned that it takes too much time and work to do it. During one of the individual interviews, a mother mentioned that even if she wanted to follow Canada's Food Guide to create a healthy balanced menu, it would be challenging because it is difficult, and it takes a considerable time to do it:

> […] I guess it goes down to, 'cause you kind of try to go by like the Canada Food Guide, right? But to do a healthy meal plan and using that, you still have to do a lot of work. If you really wanted to follow that food guide for example and balance it out, that's like a full-time job.
>
> Participant 9, mother, individual interview, May 2018

This last barrier could potentially be overcome if parents use some of the technologic tools for creating meals and not feeling the action of planning meals as time-consuming as they see it. However, more research is needed on the effectiveness of these, and about how useful and personalized they are for the users.

Moreover, even those parents that allocate time to plan and successfully plan what they are going to eat during the week or the following days, sometimes the lack of time is a barrier to stick with those plans. One mother who usually plans also mentioned: "Sometimes I get home later than I anticipated and I don't have time to cook whatever I was going to and we kind of just have to improvise" (Participant 14, mother, focus group, January 2018). This example means that parents could face barriers to plan, but even in doing that, the actual act of following and sticking to that plan will also take time and effort which is frequently complicated for parents. Therefore, this would be an aspect to pay special attention and worthy to be further explored. It would be important to understand what the extra barriers are that makes it complicated for parents to stick with the plans that they already created for their meals.

3.2.2 Selecting food

The overarching theme on the selection of food, also included in Vidgen's definition of food literacy (Vidgen, 2016), includes aspects and skills related to how and why parents choose the food they choose. According to Vidgen, food selection mentions components such as people knowing where to access food and knowing some detriments or benefits of those different options. Also, people with skills in food selection will be able to "judge the quality

of food" therefore, they could tell what is in the food, and going beyond there, knowing "where it came from" as well as other attributes of it (Vidgen, 2016, p. 54-55).
In this overarching theme, the research team identified five main themes (figure 3): 1) underlying reasons for choosing a grocery store; 2) different factors to choose food; 3) relevance of nutrition information on food products; 4) facilitators in the selection of food; and 5) barriers to the selection of food. More details on each one and their subthemes will be further provided.

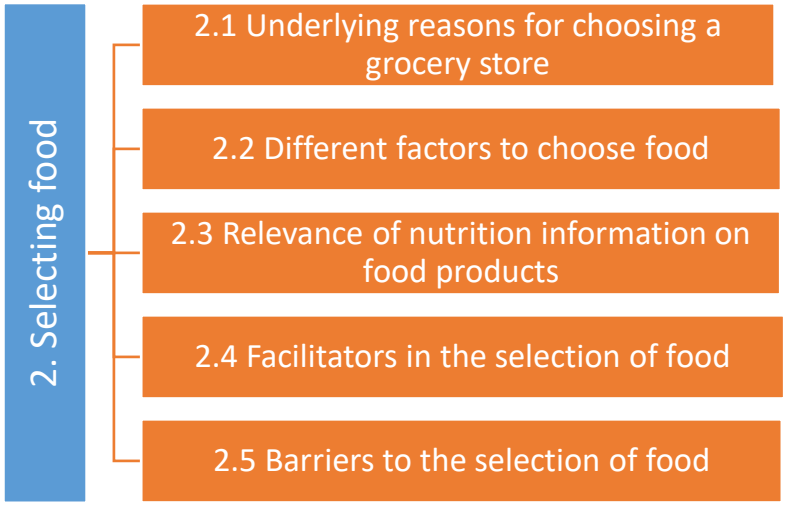

Figure 3. Overarching theme of selecting food with themes identified

3.2.2.1 Underlying reasons for choosing a grocery store

Parents mentioned different reasons for choosing the grocery stores that they usually visit which were organized into four subthemes named: i) stores with affordable prices, ii) stores with preferred types and number of products and iii) stores that offer added benefits and are at a convenient distance. More detailed information is included in each subtheme.

i) Stores with affordable prices

When asked about preferred stores to shop, parents mentioned that they liked some of the discount stores and other options where they can find fresh produce at more affordable prices. One mother said: "I prefer No Frills® when I can, but if I need a lot of things I'll also go to Superstore©" (Participant 14, mother, focus group, January 2018). Following this same opinion, a father replied to this conversation by saying that he also agrees with the preference for this specific store. He mentioned that for him this store offers a convenient

distance, and the reason was for the price too: "Yeah, No Frills® as well […] No Frills® as we mentioned is close to our home and it's generally cheaper" (Participant 12, father, focus group, January 2018). Another store frequently mentioned in all the three of the focus group is the national store "Real Canadian Superstore©", a mother on the same focus group mentioned that she prefers Superstore© because of the price: "And then everything else I find um Superstore© cheaper and then if you go on the right day is fresher" (Participant 15, mother, focus group, January 2018).

Parents also choose other places because they offer affordable prices on produce. One example of this is "Fatima's (Fatima Discount Food Store©)" which is also a discount store. A mother illustrated the convenience of this store in terms of the amount of food for the price during a focus group:

> For produce, I go to Fatima's© quite often. They have um discount, everything is like, it kind of like pike up through their produce, but everything is ripped right now. You know, at Superstore© you kind of have avocados that are not ripped, bananas that are not ripped and you kind of need to wait for everything. But, at Fatima's© everything it's on sale like bag salads like those of little bags inside like a dollar and a huge bag of snap peas like three bucks.
>
> Participant 8, mother, focus group, December 2017

Another mother during another focus group mentioned that at the market you could find the lowest prices for vegetables. She said that this market was run for charity purposes. From her response, it appears that she would not feel comfortable paying less for what she thinks she should be paying as a fair price:

> The market it's really good because it's like they half prices for the food (laughing). Like I would bring my bag and they would be like "ten dollars" and I was like "ouch" or I would save like 8 dollars so I was like "here is the ten" like it is not for profit so the money goes back to I think it's a ( ) [charity?] ( ) or something um but their prices, you won't find vegetables cheaper than there.
>
> Participant 11, mother, focus group, January 2018

ii) Stores with preferred types and number of products

Another reason used by parents for choosing a specific grocery store is because of the type of products that they sell. It could be the case that some stores offer the preferred kind of produce, other stores offer the preferred type of food items and so on. For instance, some mothers mentioned that they liked specifically one store because the produce was their preferable one. For example, organic produce: "I like to shop at Blush Lane© […] it's an

organic grocery" (Participant 2, mother, focus group, November 2017). Another mother following this also mentioned preferring this store for the same reason: "I guess I go to Blush Lane© as well for the organic, so I find the fruit that is pretty fresh there and, and, and the veggies, so I like shopping there" (Participant 4, mother, focus group, November 2017).

Following the reason for the type of products, some parents mentioned going to more than one store for this same reason; therefore: different things, different stores. An example of this would be a couple of mothers who mentioned that they visited different stores, on different days to get the preferred type of food for their families:

> […] And I also shop at Bulk Barn, a lot of my dry goods, um I bake so I buy a lot of, um like, wheat, there, and then other stores as needed so like if there is something that I know I can get it, like these Save-on-Foods© have the tortilla chips that we, that one at my house loves (laughing) so like ( ) I am gonna go there and buy other things and Costco© for like snacks and big like olive oil and, you know, things that we use a lot of.
>
> Participant 2, mother, focus group, November 2017

> It's very spread too. We have, um, we do like the spot boxes every Thursdays but, that's just for veggies and fruits. And then on the Sundays, it will be like, yeah, either sometimes Superstore©, Save on (Save-on-Foods©), Safeway®, Costco©, whatever, depending on what it is what I need but it's seems to be very quite a bit and not just one place I would say. So, it's a wide spectrum what we need.
>
> Participant 3, mother, focus group, November 2017

While some parents preferred to spread their options across different grocery stores, some others preferred to find almost everything that they needed in only one grocery store. One mother from the same focus group mentioned: "I guess I use Superstore© as well. I just got everything in there so, you know, if [dinner?] is too late I do not have time to go to different places" (Participant 4, mother, focus group, November 2017).

During the focus groups, parents also mentioned that some stores offer convenience on products because they sell food that is healthy and packaged in a convenient way. One mother said:

> I like C-o-s-t-c-o© because I can get a fruit tray on Sunday and then we can like literally, it can last like three or four days for snacks for kindergarten, right? But for five pieces of all different kinds of fruits in one and you don't need like to chop it up (laughing) but you know, it sounds lazy but (continue laughing) you know, it's just right there ready before skating you can pull it out and it's there and before swimming you pull it out and it's there and it's healthy and it's already going.
>
> Participant 1, mother, focus group, November 2017

Similar to the type of products, other parents also consider the number of products in their decision to visit a specific store. Interestingly, parents preferred to decrease the number of options because they could feel "overwhelmed" with too many food products to choose from. A mother mentioned that she liked a specific discount store because of the type and number of products they sell: "It has a lot of ethnic food, like I am surprised their like the- the variety of the products that they have. Like it's similar to Superstore© but not as many" (Participant 13, mother, focus group, January 2018). Another mother followed what this participant was saying by adding: "That's kind of what I like about it though because it's not as overwhelming as Superstore©" (Participant 14, mother, focus group, January 2018).

iii) Stores that offer added benefits and are at a convenient distance

Parents find the proximity to the grocery store as another determinant for visiting those specific stores. A mother mentioned:

> […] I live very close to like the new city market which is ( ) like Superstore© same company. Um, and I go there because is close. Um, their prices are little higher than Superstore©, but they have different things. Um, and then, in the summer too I go to the farmers market. Especially, the one at [address removed] because it is also close, sometimes I do rely on things that are closer just because are convenient.
>
> Participant 6, mother, focus group, December 2017

A mother mentioned: "Yeah, I go Safeway® as well, but not to do the shop bulk as shopping, but because Safeway® is close" (Participant 7, mother, focus group, December 2017). Some other reasons for parents choosing grocery stores were the added benefits such as discounts, reward points or some facilities that are kid-friendly. Therefore, parents can identify the benefits and the advantages of their favourite grocery stores. One mother mentioned that the reward points are something that she looks for when she buys: "And I also have a PC© points card so I get points to figure [figuring out?] groceries and that's always a bonus too" (Participant 14, mother, focus group, January 2018). Related to discounts, a mother mentioned visiting one grocery store on a specific day because of its discounts: "And on the first Thursday of the month we usually go to Save-on-Foods© for the fifteen percent off" (Participant 13, mother, focus group, January 2018).

The activity of grocery shopping for some parents meant that either it was done by themselves or together with children; therefore, parents will look for some facilitators at the grocery store that will make this experience more manageable. For instance, a mother mentioned that she likes when the grocery store has little carts for kids: "I do find like a

bonus for grocery. I don't see specifically where does the grocery are but when do have those little wagons that the kids can push around too. I don't know, it makes grocery shopping a lot easier as a parent" (Participant 9, mother, focus group, December 2017). Another mother mentioned that she tries to go grocery shopping when she knows that the store makes things easier to make it faster:

> Superstore© on Saturday and Sunday has a guarantee that every single till will be open, and that is a huge thing for me 'cause I don't wanna wait with my kids (laughter). I have maybe done grocery shopping twice without my kids and that was like a vacation (laughter). But I always have them. So, it's like don't waiting in line is even better.
>
> Participant 8, mother, focus group, December 2017

3.2.2.2 Different factors to choose foods

After asking parents questions about their decisions on selecting a specific grocery store, we explored what were some of the motivators for choosing particular food. Responses were analyzed and organized into subthemes under this theme of "different factors to choose foods". Some of these subthemes included: i) food decisions are based on absence or presence of nutrients or ingredients; ii) decisions are based on health, ethical and environmental concerns; iii) budget-friendly food and iv) food selection is based on what is seen, heard and known.

i) Food decisions are based on the absence or presence of nutrients or ingredients

Parents will assess the quality of the food to decide if they want to buy it or not. They will determine this by reading the information that is presented on the package of the food product. This subtheme was named "food decisions are based on the absence or presence of nutrients or ingredients" trying to keep it in a neutral tone. To decide about purchasing a food product, parents will look at specific nutrients or ingredients in the product to check those considered important and needed to keep people healthy. However, they will also be looking for the presence of some other nutrients or ingredients to discard this product. For instance, for some parents, it was crucial to avoid products with sugar, chemicals and to include products that have proteins, fibre and minerals. A mother exemplified this when was asked about what she pays attention to in a food product: "How much of protein, fibres and then sugar and sodium maybe, and maybe calcium on it. I will look for calcium and iron in there" (Participant 4, mother, individual interview, April 2018). About avoiding ingredients, there is a tendency to avoid chemicals or even sugar substitutes from food products. This mother mentions how strong her opinion is about not buying anything with the presence of them:

> And there are those alternative sugars, those sugars like stevia and aspartame. And if it has aspartame I am not buying it, doesn't matter what it is, I am not buying it. I can taste it and it's awful […] we try to stay away from so many things like high GMOs or aspartame and things like that.
>
> Participant 8, mother, focus group, December 2017

Related to this, some parents considered sugar substitutes as bad as sugar and, even in some cases, they find them worse than sugar. For this father, artificial sweeteners would be categorized worse than sugar: "I would avoid all of them in general as much as possible like if we are going to get something my wife just put sugar" (Participant 12, father, focus group, January 2018). Currently, there are still controversies about artificial sweeteners. Although some studies have published some potential effects, official health agencies advise that their consumption is safe.

The World Health Organization's (WHO) advice on reducing sugar from 10% of daily calories to less than 5% for both children and adults (World Health Organization, 2015). People started to use artificial sweeteners more often to replace table sugar to reduce the quantity of sugar that they consume. Artificial sweeteners are approved and safe to use according to the Food and Drug Administration (FDA) (U.S. Food and Drug Administration**,** 2018). However, nowadays the use of artificial sweeteners is controversial, and they have potentially been linked to an increased health risk when consumed in excess (Mooradian, Smith, & Tokuda, 2017). More research in this area will be essential to inform parents about the most current evidence. Even though the controversy surrounding non-caloric artificial sweeteners exists, the recommendation of limiting sugar intake is still relevant, and efforts to achieve this should be made. It seems that for parents in this study, it is still important to limit sugar for them and their families due to the health risks associated to its consumption. For selecting food for their household, sugar content in food was one of the most important to look for by parents in this study.

<u>Sugar and sodium, the undesired ingredients</u>

Parents consistently shared during the focus groups and interviews that it was essential to limit the consumption of sugar and sodium, and even more so, if the product was for their children. For this reason, we labelled this subtheme: "sugar and sodium, the undesired ingredients". A mother mentioned that when she is debating between two products, the sugar content would be the critical determinant in her selection:

> I do look at like the sugar and the sodium and if I'm looking at two different products my choice is gonna based on sugar first. So, I look at the difference and whatever one has the less content of sugar so that one I would choose. But, yeah, that is how I kind of how I make my choice.
>
> Participant 5, mother, focus group, December 2017

In addition to avoiding sugar in food products, sodium is also something that parents considered in their food purchase decision. This mother exemplified how she takes the two of them into account: "And then I look to see how much the daily values. I like to see how much sodium and sugar. Those are the things that I look for the most especially when I'm buying for my kids" (Participant 8, mother, individual interview, April 2018). Furthermore, another mother mentioned:

> Primarily when it's um an item specific for my kid I look for the sugar and I look at also the sodium and then um there are other elements that I would look at if there is like more for um myself and my husband I find, but sugar and sodium, sugar and salt are the main things that I look at, look at the nutritional.
>
> Participant 3, mother, individual interview, May 2018

Therefore, for parents, limiting sugar in their food selection would be one of the most relevant. Participants in this study were aware of the importance of limiting sugar for their children. According to a study conducted in Korea with 350 mothers of preschool children, the more nutrition education they had related to sugar consumption, the healthier the diet of the children (Lee & Joo, 2016). Participants from our focus groups, we noted that they are aware of the importance of reducing the sugar consumption in children, but we are not sure about the specific knowledge and if they know the maximum consumption allowed for children. Being aware of some strategies on how to efficiently determine the amount of sugar and easy ways to compare two food products for choosing the best option would be helpful for them.

ii) Decisions are based on health, ethical and environmental concerns

This subtheme was created because some parents mentioned being very conscious of their food purchase decisions and how this could have an impact on their health, the environment and in animals (i.e. ethical). For instance, some parents mentioned that they preferred buying local produce:

> With buying produce, I mean to <u>eat strictly local</u> […] It does annoy me to see oranges from South Africa when we grow them on this continent. Why are we- I am not gonna buy oranges that comes from South Africa like when I can get them from

> somewhere like closer, you know, so that bothers me. So that, I'll make choices like that.
>
> Participant 2, mother, focus group, November 2017

> I think um the big thing that I look at is where it's coming from. So, not necessarily um organic or not organic but where it's coming from. In Superstore©, for example, I look and sometimes they have peppers and cucumbers from like the greenhouses here like by Lacombe and then this week they are all coming from Mexico so just switches, so try to get it from more so it's not travelling too far, try to get- especially things like tomatoes and peppers and things that I know are growing around at least in the province, um, things that are not travelling as far I think […] Questions like with the meat like the same thing how to get it from- here from South America to here like how is it fridge and the whole process you start going down the rabbit hole.
>
> Participant 11, mother, focus group, January 2018

Although we did not ask about the notion of local food, the concept came up and interestingly we noted that it had a different meaning for different people. For instance, a mother mentioned that it annoys her to see oranges from another continent, a question that arises is: what if the oranges would have been from the same continent (but another country other than Canada) would those be a good option? On the other hand, the other mother who mentioned preferring local food was more specific about how far she would prefer her food to travel. In her case, local would mean something close to where she lives. Bringing produce from another country such as Mexico even if it is from the same continent as she mentioned would not be consider this local anymore. Reflecting on these different interpretations an interesting question arose: how strict the word "local food" is?

According to international literature, the term "local food" does not have one main definition but various definitions and they could not agree with each other in some cases (Coelho, Coelho, & Egerer, 2018). However, in Canada, The Canadian Food Inspection Agency (CFIA) sees "local" as a) "food produced in the province or territory in which it is sold" or b) "food sold across provincial borders within 50 km of the originating province or territory" (Canadian Food Inspection Agency, 2014, para. 2). Although this claim is not mandatory for producers, it can give an evident idea to consumers' who wish to eat locally.

Another concern regarding the environment that arose during the focus group was the type of packaging used by the industry. Even though this was not the primary concern in selecting food it was something that parents considered:

> Also, to be honest, the amount, the amount and kind of packaging […] if I can buy something that is packaged on p-a-p-e-r instead of plastic, I will, so, it's not the primary concern, like I won't buy something that is, like heavily filled with sodium, or

> sugar or whatever simply because it's packaged more responsibility like no, but it is something that I think of.
>
> Participant 2, mother, focus group, November 2017

According to current evidence, biodegradable materials could replace other materials that are not biodegradable, and this can be used as a strategy to help the environment (Dilkes-Hoffman et al., 2018). However, changing the food packaging to one that is more responsible it is not a one-way solution for the environment, it would be crucial to also decrease food waste (Dilkes-Hoffman et al., 2018). If food waste is not decreased even with biodegradable packaging, the greenhouse gas will be still produced damaging the environment (Dilkes-Hoffman et al., 2018). Therefore, educating the public, including parents, regarding packing and food waste will be crucial on this matter.

Another concern about packaging but which would be more related to health is finding and selecting food that is BPA (bisphenol A)-free. A mother followed up on the conversation about packaging concerns by saying: "I want to make sure, or you know, try to find packaging that is BPA-free" (Participant 4, mother, focus group, November 2017). Exposure to BPA has been linked to potential health risks and higher risk for vulnerable populations (in this case children) (Barraza, 2013). Although there is still controversy surrounding the health effects of BPA in humans, it is understandable that parents would prefer to avoid it and not to risk their and their families' health, as this mother exemplified.

Another parent's reason for selecting food is that they are concerned about how the food was produced which could include the use of hormones, how the industry treated the animals, the use of pesticides or produce being organic. We did not ask parents about their dietary patterns, but during the focus groups, some of them shared that they were or currently are vegetarians. Furthermore, even for those who did not mention they had followed a vegetarian diet in the past, they were also concerned about animal cruelty and other related issues.

A mother mentioned that she prefers to buy meat at specific stores because she feels more comfortable and her husband feels more comfortable buying organic:

> I am particular about the meat we buy, so I buy meat at Costco©, or at the farmers market or Blush (Blush Lane©) on Whyte Ave. Um, and then in terms of berries my husband is particular so they have to be organic […] Um, when I do the research of where it comes from, I am more comfortable where it comes from and how it's been farmed.
>
> Participant 15, mother, focus group, January 2018

> We get our meat at the farmers market, too. I used to be a vegetarian and I'm not anymore but I am still, I- the meat industry it's kind of disturbing so I also do the same thing that anything that seems like it might been factory farmed it's a bit much for me.
>
> Participant 14, mother, focus group, January 2018

Something interesting is that some parents prefer meat that was manufactured in a certain way. Although they did not mention to eating this because of religious concerns, they felt more comfortable knowing how it has been produced:

> And for poultry, um we don't eat much red meat, but for poultry, we try to buy halal just um because we know it might be -there might be a simpler line of production there. Um, and a little bit more of- at least the rules that might follow in the halal industry might be a little bit more humane, we think.
>
> Participant 13, mother, focus group, January 2018

As part of parents' health concerns also drive parents to choose organic products. A father mentioned:

> Actually, now lately I look more into if there if it's organic, like right now that's one thing that we buy a lot of the stuff that we buy it's organic, especially if it's produce, fresh produce and um, and GMO.
>
> Participant 10, father, individual interview, May 2018

For some parents, some of these concerns were high-priority, so they were willing to pay more for food considered to be of better quality. A mother after saying that she preferred a specific type of meat, she mentioned being aware of the high price, but she would still choose it: "I want to make sure that is antibiotics free and hormone free. So, I always look for that and um it can be pricey, but I, you know, I would choose those" (Participant 4, mother, focus group, November 2017).

However, it would be expensive for all families to afford this type of food on a regular basis. Even for families who have income-security, they would find other options to balance their food budget and still eat healthy according to their standards of health, environmental and ethical concerns.

iii) Budget-friendly food

This subtheme refers to some practices that parents do to select healthy food but also taking care of their household finances. During one focus group, a mother mentioned that her shopping practices were driven by budget, by the tone in her voice when spoke about

shopping as a single mom, time and money were constrained. Therefore, she organized the family diet around the sales of the grocery store:

> Well, I am a single mom and I have two kids, a two-year-old and a five-year-old and I work full-time. So, um, when I go grocery shopping, I shop sales. So whatever is on sale, really, that is, that I am driven by budget.
>
> Participant 8, mother, focus group, December 2017

Another mother mentioned that she also takes into account the cost to know which food she is going to select and something interesting is that she indicates that her family is leading toward a more "plant-based source of protein". Even if she does not say this term, by including more legumes in the diet could be driving toward a healthier diet:

> I think for deciding on what to stock up with I mean budget or cost is of course what we look at too. Um, as well as we try the main ingredients in the fridge, we try to stay away from too much processed things […] Lately we've also found that budget-friendly, turned into more, to um like beans, or using them and, um, chickpeas, those kind of things that are still good on protein so the kids don't get so hungry so fast.
>
> Participant 9, mother, focus group, December 2017

Budget-friendly for this mother meant including more pulses (formerly known as legumes) instead of meat as a source of protein. The benefits of including pulses would include spending less money on food and having a varied diet. Research suggests that a plant-based diet is linked to decreased cholesterol levels, blood pressure and obesity (Tuso, Ismail, Ha, & Bartolotto, 2013). Therefore, parents selecting budget-friendly food that is based more on plants will also help their children to get used to this type of food and get all its benefits for their health.

iv) Food selection is based on what is seen, heard and known

This subtheme refers to food selection decisions based on external influences such as what parents see, hear and know about the food products or about general beliefs surrounding food. For instance, a father mentioned that he usually would see the front of the package and depending on how healthy it looks like he could base his decision on this:

> So, again, it would just be like the cover to be honest, especially when it comes to pick up something that's healthy […] most of the time it's like, if I see a product that doesn't have like sugar like visual sugar on top of it and if it has a little heart, sort of seems healthy.
>
> Participant 12, father, individual interview, May 2018

Evidence shows that this can be usual practice. In an Australian study, 520 parents, were surveyed about cereals with different front-on-package images and they had to select which one they would choose for their children (Russell, Burke, Waller, & Wei, 2017). The survey presented to parents four "hypothetical" cereal boxes (Russell et al., 2017). The boxes were similar at the background, but different attributes were included in each one to assess what would be the preference of parents (Russell et al., 2017). For instance, the boxes ranged from attributes that seemed most "unhealthy" to the one that seemed the "healthiest". They also included different visuals, written claims and "Australian health rates" which were a health star rating (Russell et al., 2017). Results from this study showed that parents' decisions were driven more by visuals and paying less attention to written information (Russell et al., 2017). Therefore, it will be essential to help parents to understand the food packages in general (including their visuals) to distinguish which products are better options than others based on the information presented in there.

Similarly, another mother from another focus group also said following this same practice by only looking at the front of the package, but it is clear that she already had identified the products that label themselves as "healthy" because those are the option reduced in sodium, sugar, fat, and so on. She would trust the "healthy" brand of the grocery store without paying attention to the written information.

> Like if I had to buy something new I would probably just go, you know, see what's the Blue Menu 'cause I do buy Blue Menu for stuff. So, and I will just kind of like, assume and trust, yeah that that will be like kind of the best of the options and I wouldn't probably stop and look at it.
>
> Participant 7, mother, focus group, December 2017

Some role models could also influence parents' food selection. For instance, it is interesting how a father has a vivid memory of the food that his grandparents ate and how this was important to him because he saw them as their role models. He had a desire of eating as his grandparents did: "And you know one thing I've seen it's like, um, I kind of wanna eat what my grandparents ate, and I kind of look that they did okay" (Participant 10, father, focus group, December 2017). There is some sense of support and relief when someone sees other person succeed in something and automatically make us think that following the same steps we could have the same positive results. Therefore, for this parent going back to what his grandparents ate could give him the sense of "do okay" as his grandparents did.

In a study conducted in 2014 by Farrow, she compared the feeding practices of parents (n= 50) and grandparents (n= 50) and how these practices influence their grandchildren (Farrow, 2014). She found both positive and negative influences from grandfathers to children regarding healthy eating habits (Farrow, 2014). However, it is important to mention that according to this study, the more time grandchildren spend with their grandfathers, the healthier eating environment they have as well as a healthier role modelling (Farrow, 2014). More research regarding how grandfathers influence children and what would be the difference between their positive and negative practices would be needed.

Some other interesting points of views that mothers in this study shared regarding selecting food based on what they see, hear and know is that they could base some of their food selections on "popular advice". For instance, a mother mentioned that she selected food for a while following the recommendation of the "dirty dozen and the clean fifteen produce": "[…] It's even, for a while, I still kind of shop with that with the dirty dozen and the clean fifteen produce, right?" (Participant 9, mother, individual interview, May 2018). This dirty dozen and clean fifteen produce is a list that is released each year by the Environmental Working Group in the US. According to their official website, their mission is to **"**empower people to live healthier lives in a healthier environment" (Environmental Working Group, 2018a, para. 1). This famous list includes the 15 produce that is more contaminated with pesticides (Environmental Working Group, 2018b).

Another mother mentioned that as an easy way to help her food selections; she uses the quote of "If you cannot pronounce it don't get it":

> I have to be able to pronounce the word (laughing), if I cannot pronounce it I don't get it, it's just a funny little quote but this um helps me, not buying as much package processed food for my kids and more fruits and vegetables.
>
> Participant 3, mother, individual interview, May 2018

Even if these two examples are strategies that may potentially help to select food, parents need to be aware and conscious of who is recommending this advice and in which case, they will be applicable or not. There are many health and nutrition-related recommendations that without proper nutrition knowledge, it may be difficult to distinguish which is based on evidence and which are not. It will be helpful to explore which other "popular" recommendations parents follow that help them in the selection of foods. As well, as some advice became that popular even without being evidence-based, there is a possibility that dietitians or other health professionals bring into the media or other venues

evidence-based nutrition advice that public can follow, and which can become popular as well.

3.2.2.3 Relevance of nutrition information on food products

The theme of relevance of nutrition information refers to the aspects shared during the focus groups and/or individual interviews that parents considered essential to look at in food products as well as those they considered not important to understand in order to make food decisions. Information considered important was usually that will guide their decision in selecting or buying a specific item for them, their household or their children. The responses from parents were categorized into two subthemes: i) information is relevant if it helps to determine the absence or presence of nutrients and ii) information considered extra is not relevant. Detailed information will be explained in each subtheme.

i) Information is relevant if it helps to determine the absence or presence of nutrients

Parents' responses were consistent throughout this study. When parents were asked questions about what they pay attention to in food products when selecting a specific item, some of the most prominent answers were ingredient list and nutrition facts table.

Ingredient list

Paying attention to the ingredient list was regularly mentioned by parents; therefore, we categorized it as relevant. Some of the things that parents considered when they looked at the ingredient list were the order, the number of ingredients and whether they were familiar with the ingredients listed or not. For some parents, one was more important than others or all the three of them.

During an individual interview, a mother mentioned that she pays attention to the ingredient list and she usually reads the first ingredients:

> The ingredient list I read it very often but um, it's very, it's very common that I just don't, don't check the ones, the ingredients at the end. I focus on the first, I tend to focus on the first and that might not be a good idea but, time, time it's limited so.
>
> Participant 13, mother, individual interview, May 2018

Although this mother mentioned focussing on the first ingredients because of time constraints, for some parents when they concentrate on the first ingredients is with the

mindset that those are the most important ingredients. The order of the ingredients then becomes essential for parents to pay attention to.

Order, number and known ingredients

Order. In Canada, the ingredients on the ingredients lists are in descending order (by weight) in the product (Health Canada, 2013). The first ingredients are the most predominant and the last ones the least (Health Canada, 2013). Some parents take this into account, and for this reason, the order was important to them. For instance, a mother mentioned: "I like to read the first couple ingredients, to know what the main products are" (Participant 8, mother, individual interview, April 2018). Other mothers also shared during their individual interviews that they prefer to not see sugar among the first ingredients and in some cases, this is determinant in their food selection:

> Then I compare that with the main ingredients, like whole grain or sugar. Now this one the second ingredient is already sugar, so I would prefer to see the sugar a little bit later.
>
> Participant 9, mother, individual interview, May 2018

> I also look at the ingredients, also um to see what ingredient comes up first, so again, like if it's sugar then no, if that's like the first ingredient listed, definitely not.
>
> Participant 3, mother, individual interview, May 2018

Parents from this study seemed particularly aware of this in the food labels. It is not clear how they acquired this knowledge because this was not a question included; however, it was clear that for some parents the order of the ingredients was among their priorities in their food selections.

Known ingredients. Another important aspect for parents was to be able to recognize the ingredients under the ingredients list.

> I guess I just think it's weird. And like when- when going back to read the ingredients, for things like that when you read the ingredients it's like "okay, I don't understand the first two" (laughter). So, it can't be good, right?
>
> Participant 5, mother, focus group, December 2017

During the interviews, parents mentioned not trusting products that they did not recognize the ingredients. For instance, one mother said: "I think I'll start with the ingredients first, if I can't pronounce them or don't know what in particular is I probably don't wanna be eating it" (Participant 11, mother, focus group 3, January 2018). This phrase has been a

widespread belief in nutrition in the last years. Some book authors spread a message saying "If you can't pronounce it, don't eat it". However, even if sometimes this message could help consumers in their food selection, it can also create confusion because of the broadness of this advice.

During the interviews, one mother in talking about the vitamins on the label she mentioned: "I don't know what thiamine does, I don't know what niacin does or pantothenate? I can't even pronounce that one […]" (Participant 14, mother, individual interview, April 2018). This exemplifies how some things included on the label that cannot be pronounced might or might not be harmful to consumers. To our knowledge, there are no studies exploring perspectives from consumers, on how they use and follow the popular advice on nutrition.

For some parents, it is more important than to others to understand all the ingredients on food packages to decide on whether to buy it or not. For instance, when a person or in this case a child of a parent has a food allergy or some diet restriction, it will become almost mandatory to read and pay closer attention to the label. The ingredients list will help to determine if this food contains the ingredient that they are trying to avoid (Health Canada, 2013).

A couple of mothers mentioned paying close attention to the ingredient list because of the necessity of avoiding specific ingredients for their children:

> In the ingredients well because my daughter used to be allergic to dairy so it's very important for me to actually study the ingredients to make sure there is no dairy and I just go to [see if it has it on it?].
>
> Participant 4, mother, individual interview, April 2018

> Um, so, I have a new baby now and she is clearly sensitive to something I'm eating and I'm- so it makes me look at labels a little bit more um and what I find is the, the ingredients lists, when they are not whole foods I find them really hard.
>
> Participant 15, mother, individual interview, May 2018

The number of ingredients. In this study, parents also mentioned preferring "simpler" ingredients list. A shorter list which would mean having fewer ingredients in the food product and translating into potentially less processed food from their perspective. A mother mentioned checking this to select what food to buy: "I check the ingredient list. And if it is really long, I am kind of skeptical of what's all in there" (Participant 9, mother, focus group, December 2017). A father during an individual interview exemplified how the number of

ingredients was a determinant in his food selection regardless of the other aspects of the products:

> Not that long ago I switched to coconut yogurt, and I was um trying to debate which brand I liked the best it was two of them. And it was one with a l-o-n-g list of ingredients so I kind of stayed away from that one and I took the one that was like more simple and less ingredients I guess.
>
> Participant 10, father, individual interview, May 2018

Some of these aspects are related to each other. For instance, having a longer list of ingredients increases the chances of parents not knowing some of them, and that would also potentially influence their decision of buying certain food products. In general, ingredient lists were important for parents to look at because in this way they can determine the content in the food products, and what ingredients are in a more significant amount based on the order. Knowing which ingredients certain foods have could help both, either to buy or not to buy. This decision would depend on which ingredients parents are looking to include in the family diet (those that they consider having benefits for health). On the other hand, they would avoid food products with ingredients that they find essential to limit for good health, such as sugar, sodium and so on. More information and details on foods to include or limit are discussed in the overarching theme of eating (p. 97).

Something remarkably interesting is that a mother became more aware of the relevance of the ingredient lists because of the interaction and experiences shared by other parents during the focus group:

> […] Especially since having been in that focus group, I've been looking a lot more at the ingredients, in the list, that's something that I've been um trying to focus more on because the nutrition facts table doesn't always give you the big- the whole picture and neither does the ingredient list in some ways.
>
> Participant 14, mother, individual interview, April 2018

The ingredient list is not the only part of the label that can help to determine the absence or presence of nutrients of a product. The nutrition facts table was also important to look at for parents to decide.

Nutrition facts table

The nutrition facts table is where parents pay special attention because this is where they can know which nutrients and how much is in the food products. The nutrition facts table gives more information than just the absence or presence of a nutrient. Parents mentioned checking this part of the label for different reasons. One reason is that parents can understand the nutrition fact table, and therefore they like to see it. When asked what parents preferred to look at on the label, a mother mentioned: "I like always looking at some parts of it. I understand the nutrition facts, I like to see them" (Participant 13, mother, individual interview, May 2018). Another mother mentioned checking the specific content for some of the nutrients when she buys food products:

> And then the nutrition facts, they always say, like you know, say if I buy say processed smoothies sometimes if I am on the go, um, the thing I understand the 3 grams of fibre or it actually says, you know, um, 5 grams of protein, then yes I will pay attention to that more.
>
> Participant 4, mother, individual interview, April 2018

Something that came up during an interview in talking about the nutrition facts is also the attempt to limit the amount of sugar and other things. A mother mentioned that she checks sugar content, calories and fat in the nutrition facts, and this is mainly with cereals.

There are different things that parents mentioned looking at in the nutrition facts. Some of them are the daily values and the serving sizes. Parents said looking at them to have a "bigger picture" of the food product, and this would help them in their food purchase decision. For instance, looking at the serving size will help parents to accurately determine the content of the nutrients reported on the nutrition facts. One mother mentioned that some products would look in a way healthier but the reality of the product cannot be determined until looked at the serving size: "Well I look for serving size under that so I know, 'cause some sound better but once you read the serving size they're not" (Participant 1, mother, individual interview, April 2018).

During this study, parents mentioned being aware of the daily values and even more than that, they said taking them into account in their food purchase decisions. The reason parents pay attention to the daily values is to be able to recognize which products have more sugar or more salt (sodium) which they consider not to be beneficial for their or their families' health. Food products with high amounts of them were mentioned to be limited by parents:

> And I do look at the um nutritional, um like the nutrition facts to see if one serving of whatever I'm buying doesn't contain 50% of my- what I should take of sodium for example or sugar, like high percentages for sodium, sugars, maybe those two.
>
> Participant 13, mother, individual interview, May 2018

> And then, yeah I do check the label and the percentage daily value and how much that takes a part of that. I mean it's hard to find cereal without sugar but once you compare them, at least you can make some choices, right?
>
> Participant 9, mother, focus group, December 2017

Parents' responses help elucidate that they tend to use mostly both, the ingredient list and the nutrition facts table. Therefore, both were categorized as relevant. Some parents would consider one of them more relevant than the other, especially since some parents mentioned the ingredient list as the first thing to look at. Even if the ingredient list could give a general picture to parents, both would be important to look at to judge the quality of a food product. They include different information that complements each other. For instance, the ingredient list was referred to help determine the presence of ingredients, and to have a general perspective of which ingredients a product has more of. Complementing this overall understanding, with the nutrition facts parents can determine the exact amount of some nutrients and to specifically calculate this based on the serving size.

In Canada, since 2017, changes to the food labels have started to take place (Health Canada, 2017a). Something worthy of exploring is how aware the general population is of these changes. Furthermore, mass media campaigns might be necessary to inform people about them. Some of the changes include improvements in the nutrition facts table, list of ingredients, serving size and sugar information (Health Canada, 2017a). Parents would benefit from these changes because it could help them to be more efficient when they read the food labels when buying food products.

ii) Information considered extra is not relevant

There are parts of the nutrition label or the package that parents do not consider relevant in their decision to purchase a food product because they do not find as contributing to meaningful information. Some examples of this would be not paying attention to the content of fat, health claims, the marketing of the product and the vitamins. For instance, fat was not deemed as important or as relevant as sugar or sodium in the food products: "[…] Sometimes fats, but I am not so worried about fats so much, I don't know why" (Participant 13, mother, individual interview, May 2018).

Some products have text on the package that parents do not consider necessary for their food decisions. A mother mentioned that she prefers going directly to the point on the labels and avoids reading the extra information included:

> A lot of labels would have this kind of origin stories, this one has: "Life cereal is a perfect combination of taste and nutrition, blah, blah blah" I don't often take the time to read those things. Um, I kind of prefer to just look really, look really quickly.
>
> Participant 14, mother, individual interview, April 2018

Another father mentioned that he goes directly to the information, the design or colours of the product were not relevant to him; therefore, he will not look at them: "I don't care about it, the colours and the picture, all I go it's like I see what's in it. That's where I always go" (Participant 10, father, individual interview, May 2018).

It is worthy to note that parents mentioned that the front of the package is designed for marketing purposes. They said that the goal of the industry is to catch the eye of the consumers and make them stop and buy their products. For instance, a mother said: "the front of the box is sort of designed to drive you in, so I kind of pay the least amount of attention to that after the fact but I obviously right of the back that's kind of what directs me to it at least" (Participant 14, mother, individual interview, April 2018).

Another part of the label that parents mentioned not paying as much attention to is the health claims. Even though they are included in the food product to help guide in more informed food decisions, sometimes they are in a small print size and parents are not attracted to see them: "[…] Well sometimes there are some advice like 'a healthy diet low in saturated and trans-fat may reduce the risk of heart disease' those I rarely read them 'cause they are fine, they look like fine print I guess, maybe that's why I don't read them" (Participant 13, mother, individual interview, May 2018).

According to the Canadian Food Inspection Agency, a health claim is "any representation in labelling or advertising that states, suggests, or implies that a relationship exists between the consumption of a food and health" (Canadian Food Inspection Agency, 2018a, para. 7). Sometimes these health claims can be confused with the nutrition claims, but both are different. The nutrient claims "are statements or expressions which describe, directly or indirectly, the level of a nutrient or energy in a food or a group of foods" (Canadian Food Inspection Agency, 2018b, para. 1). From the data on our study, there is not clear if parents differentiate one from the other, but it seems that they mentioned them

interchangeably. More studies on the usefulness of them and how they help or not to guide food decisions of parents will be necessary.

Parents mentioned that they did not usually pay attention to vitamins and minerals in a product: "I don't usually look at the vitamins labels and stuff, because I don't know why but I just don't usually look at the vitamin labels" (Participant 1, mother, individual interview, April 2018). Other parents explained why they did not pay attention to vitamins and this was because they considered that vitamins and minerals were obtained from whole foods and not from packaged foods.

Not relevant because parents include more whole foods not packaged food

The overall diet influences how relevant or not parents see some parts of the food labels. In general, parents considered that having a balanced diet including food from the different food groups can provide the vitamins and minerals that a kid and themselves need. If having a diet considered balanced, they did not pay attention to the vitamins and minerals on the food label.

> I feel like those are often added and I feel like they should get vitamin A and C through their fruits and veggies naturally so I don't focus on that by getting it through replacement.
>
> Participant 9, mother, individual interview, May 2018

> Like it's great that there's lots of vitamins in there but my kids eat a lot of fruits and vegetables like that's where they are gonna get most of it, right? And they eat a lot of whole grains because I would rather give them just oatmeal […] but like it doesn't concern me really how much fat there is in it, what percentage, I'm not adding this stuff up, like I pay almost no attention to the nutrition label.
>
> Participant 2, mother, individual interview, April 2018

> Like I said before sort of the vitamins and minerals, um, I mean it has 10% of vitamin B6, that's awesome but like I said, I try to give a balanced diet and when I make meals I try to make sure that they are balanced with fruits and veggies so to me that's not a big selling factor.
>
> Participant 6, mother, individual interview, May 2018

A mother also mentioned that some aspects of the label are less relevant because she buys a small amount of processed food. For her, it was not as important to know all the ingredient names in the product because she buys more whole food without a package (therefore, without labels):

> I don't normally pass the sugars, protein and fibres, I don't look at the vitamins, lots of times 'cause we don't really buy that much package food […] once you get into kind of the listing of the preservatives and stuff I don't necessarily know what they are or what they're for but again I don't buy enough that I really feel like I have to know.
>
> Participant 1, mother, individual interview, April 2018

This thinking could be a more comprehensive approach to eating instead of focusing on every single dish/food. Some parents mentioned seeing a balanced diet as the sum of all the dishes and foods that someone eats in a complete day instead of over worrying about every single meal or food they eat. This balanced diet approach could be the reason for not worrying about knowing all the details in the packaged foods. They could feel that the small quantity of packaged food that they have at home will not make a big difference in the overall diet. More details on parents taking this approach are shared on the overarching theme of eating of the results of this study (p. 97).

3.2.2.4 Facilitators in the selection of food

Different factors helped parents in this study to choose food that included: i) being capable of making food informed decisions; ii) being a parent as a motivator for choosing healthier options and iii) shopping habits.

i) Being capable of making food informed decisions

Some parents in this study seemed to be self-assured in their decisions about what food to purchase for their families. For instance, we identified that knowledge parents have was important for them to select specific foods and also have confidence in their own decisions.

<u>Knowledge</u>

Parents shared different aspects on how they judge the quality of a food product and those were included in this subtheme. Some parents mentioned during the focus groups and interviews that they were aware of which daily values to look for on food labels and how they related to the daily recommendation: "We've seen that some noodles like package noodles or pizzas, like one serving, contains half of what you should take of sodium in a day" (Participant 13, mother, individual interview, May 2018). They also knew how to compare the content of nutrients between products, which would be something fundamental to make better decisions when choosing something.

Other aspects included parent's ability to determine how many calories would be enough for a food product or time of the day: "I mean, for a breakfast like I don't really wanna have a cereal that is kind of over 200 calories I guess I would say like it depends on the meal I guess. But, yeah for like a cereal in general not over 200 calories" (Participant 6, mother, individual interview, May 2018). This example would mean that this mother has a general distribution in mind about how a balanced diet would look like based on calories.

Knowledge about nutrient claims was also part of this subtheme. For instance, when nutrition claims were included in specific food products, parents would make sure about them even by checking at the back of the food product. Nutrient claims as mentioned by one mother are a way of marketing for her, and it is a way "to catch her eye" and pick up the specific food product. However, she would look at the label of the food product to determine by herself if she would buy that product: "Low in sodium doesn't mean necessarily no sodium so that's when I go back to the nutrition label to confirm but um from the marketing perspective yeah, it definitely, you know, catches my eye more" (Participant 3, mother, individual interview, May 2018).

Parents also mentioned understanding the basic things on the labels of food products and knowing what they look for in the food products which will help them in the selection of food. For instance, a father mentioned: "I kind of feel like I understand what to look for, for the ingredients, what's first ingredient, second, the third kind of thing and then I can read the nutrition facts sheet" (Participant 10, father, individual interview, May 2018).

<u>Confidence</u>

The parents' confidence was also categorized as a facilitator under the subtheme being capable of making food informed decisions. Confidence, in this case, referred to how parents mentioned they felt about their understanding of all the information presented on a packaged food. During the individual interviews, they were given a box of cereal to evaluate its quality and to help guide the questions about food labels. Some of the parents mentioned feeling confident in judging the quality; for instance, a mother said:

> I feel pretty confident making a decision on whether I would buy this or not, I'd probably buy this, looking at this box […] if I can understand the main ingredients that could, you know, rice flour, oats, whole grain, wheat flour, like those kinds of things, corn flour, like those are pretty- so if I feel the majority I understand then I would feel more confident, yeah.
>
> Participant 9, mother, individual interview, May 2018

The confidence that parents mentioned could be based on knowing what they were looking for in the food products and also having an idea of what they would like to see (or not to see) in the food product. A mother with high confidence mentioned: "I would feel very confident in evaluating this. I feel like I have a pretty good grasp of what I wanna see in the ingredient list and what I don't wanna see" (Participant 2, mother, individual interview, April 2018).

Something interesting that came up is that some parents with high confidence or with less confidence agreed that they did not understand some of the ingredients in the food products. Nevertheless, for some reason that we were not aware of, for parents with high confidence this was not something that lowered their confidence. We could imply that for those parents their confidence is not affected by this are those parents that mentioned buying less processed food and worry less about it. On the other hand, not knowing some ingredients for parents that said having lower confidence was, in fact, one of the reasons for their lower confidence. More research on the variables that influence the confidence of parents would be worth exploring to understand them better and to help them increase their confidence.

ii) Being a parent as a motivator for choosing healthier options

Becoming a parent motivates people to shift their decisions to choose healthier foods. Being responsible for someone else, in this case, their children made parents in some cases more conscious of their own choices including the selection of food: "Definitely um having a child um I'm probably more conscious I guess in sort of the things that I'm buying" (Participant 6, mother, individual interview, May 2018). For instance, a mother mentioned how before being a mom she would eat whatever without paying as much attention as she does now, and her reason is that she wants her children to be healthy:

> I've been really concentrating in the last couple of five years to make sure that I look at the labels and everything that I pick up just because now I have kids and I'm trying to keep them healthy. When I was just myself, I never read any labels and it was just whatever I wanted.
>
> Participant 8, mother, individual interview, April 2018

From this example, it can be perceived how unworried a person can sometimes be when they are looking just after themselves. However, children are indeed a motivation to start taking care of some specific decisions such as reading labels to try to select the best option for everyone.

iii) Shopping habits

Parents have different shopping habits that helped them in the selection of food. They mentioned using some strategies that helped them to stay away from buying processed foods. These strategies happened in the supermarket/grocery store or when buying food. For instance, a couple of mothers mentioned doing perimeter shopping at the grocery store.

Conversation during one focus group:

> I try to do the outside circle first. And then, if I'm missing anything I kind of stay away from the inner circle 'cause I know that is the processed food. So, like the outer circle and then I go find, you know, maybe granola bars or cereal or something.
>
> Participant 8, mother, focus group, December 2017

> I think well I do the same. I'll say the outside loop and then I either go to an aisle I think I need stuff, or I just scan what, you know, the head is. And I'm like "Oh, do I need anything from that?" Check my iPhone to see "No, I don't" (laughing). So, I try to not even go in there, especially if I have my kids because they will see all of these things. But if I am by myself I will just try to do the outside looping.
>
> Participant 9, mother, focus group, December 2017

Such strategies as perimeter shopping will vary depending on which grocery store parents are at and the different layout of the grocery store. Doing perimeter shopping is a widespread belief that can help shoppers to stick with choosing healthier food. This belief is with the assumption that in the outer circle/ring or perimeter you can find fresh produce and basic ingredients such as dairy, eggs, meats. This advice is given by many nutrition websites including university websites, websites blog style and so forth; however, except for the popular advice, to our understanding, there are no scientific studies yet showing that doing a perimeter shopping has a significant impact on the quality of the food purchased.

Another shopping habit mentioned by parents is the order and the things they look for, which could coincide with doing the "outer circle": "Vegetables, fruits, bread and then like everything else" (Participant 12, father, focus group, January 2018). Another mother mentioned her whole experience in the grocery store detailing which sections she visits and what she looks for in each of them:

> I always do the produce and yeah, the produce area first and then, um, depending for like, you know, cleaning supplies and things like that, and then meats; and then, like she said, the outside like the dairy and what not and then going to the inside aisles if anything else is needed canned foods or whatever.
>
> Participant 5, mother, focus group, December 2017

Another strategy that facilitates the shopping for parents is the use of the online shopping which could potentially help them to stick with the things they initially just planned to buy:

> Especially over the holidays I use the click and collect so if we are having a really busy week I'll just do all the online stuff and then send him (husband) just to go and pick it up.
>
> Participant 11, mother, focus group, January 2018

> The great thing with click and collect it's that is cheaper because you don't go like "Oh!" ((mimics finding something)) (laughter) "Oh! Oh! I want this, I need this"
>
> Participant 15, mother, focus group, January 2018

Parents can use different strategies in their purchase or selection of food. However, none of them is a guarantee that the best option will be pursued. There is still a need for some knowledge to know how to distinguish how to make a food informed decision.

3.2.2.5 Barriers to the selection of food

Regarding the selection of food, parents in this study have experienced some limitations which some of them included i) struggling to interpret labels; ii) the number of food products and recommendations are overwhelming; iii) parents' skepticism of information on food products; and iv) the uncertainty of serving sizes.

i) Struggling to interpret labels

Parents mentioned not being as confident sometimes when interpreting food labels. There were different reasons for this, but the main ones were because sometimes parents did not know some of the ingredients that are listed in the food products. One mother said: "Sometimes I don't understand the ingredients 'cause there are some, some of them have different names or different products, I wished they were more standardized" (Participant 13, mother, individual interview, May 2018).

Other reasons for struggling to interpret labels were because sometimes the daily values were not well understood. If parents did not have a reference of what would be an adequate intake they cannot know if the information presented is low or high. A mother mentioned this during one individual interview:

> Like for the sodium it says like 160 "mg's" ((spelling it)), which seems like a lot to me when you compare it with the other things um, and I'm not one hundred percent confident on how to read that and when it comes back with only being the seven percent, so then I'm like "I don't know if that's a good thing or a bad thing".
>
> Participant 15, mother, individual interview, May 2018

In Canada, the adequate intake for an adult (15-50 years old) for sodium would be 1500 mg/day (Health Canada, 2017b). If the general public is not aware of these values, it might get complicated for them to fully understand the daily values included in the food labels. Parents can also be confused about the nutrient claims. A difference in the daily values, the nutrient claims were not based on the adequate or recommended intakes for people. Nutrient claims are based on the comparison with other products. Sometimes it was compared with the same product but without having modified the nutrient that they increased or decreased.

In this example, when a product says that it is low or high in something parents might not know the reference point. Therefore, they could not understand what it is referring to: "When it says um well, yeah, when they say low in fat it's very ambiguous to me, yeah. Like what does that mean?" (Participant 3, mother, individual interview, May 2018). In this example, according to the Canadian regulations, low in fat would mean less than 3 g or less of fat "per reference amount and serving of stated size" (Health Canada, 2012). Parents found those claims confusing, and it was consistent that they did not know what "low" or "high" means in comparison with what. More dissemination of this information will be necessary for helping them differentiate these claims and make a better decision.

ii) The number of food products and recommendations are overwhelming

A barrier that parents also faced in the selection of food was the number of different products available in the grocery stores. Even if they know and understand how to read the nutrition labels, they will encounter a world of options to look at and to choose from. Plus, if they are visiting the store with their kids, there is almost no time to stop, read, and compare several of the food products to make the best decision. One mother shared during her interview that she prefers the aisle of natural foods because she feels more comfortable this way:

> For instance, if I'm in the natural foods aisle, I feel more, I feel more comfortable with the products and descriptions of those packages versus um any other traditional aisle only because there is so much choices selection no name brands, popular brands, not well-known brands whereas the natural foods aisle is um I find like the food it's not overwhelming if that makes sense.
>
> Participant 3, mother, individual interview, May 2018

Some of the preferences of parents such as looking for food products with shorter ingredient lists could potentially also help them in the selection of food. This strategy would help them to make a faster and better decision when shopping at the grocery store and when they are experiencing time constraints in trying to choose the best option (even more if they usually do grocery shopping with their kids). The current globalization and economic trades help in making available another type of foods that were not easily available before. However, for some parents, this is not the best option because it would complicate their decisions and make them feel overwhelmed.

iii) Parents skepticism of information on food products

Interestingly, parents do not completely trust all the information presented on the food products. For instance, some products include a nutrient content claim which is added to help the consumer to quickly know what good source of which nutrient is or on the other side what is low in some others. Nevertheless, a mother mentioned not trusting them: "I am always skeptical because I don't know what that claim is based on in" (Participant 5, mother, focus group, December 2017). Furthermore, they consider that those were included only for marketing purposes:

> I look at the description but I feel like a lot of times labels have like catchwords on them that don't necessarily mean anything and I feel they are more to get you to purchase something, um, like "high in antioxidants" or, um, "low in fat" or those kinds of things.
>
> Participant 6, mother, individual interview, May 2018

It is interesting to see how skeptical people are about the food industry and about what they emphasize in their food products. As an example, a mother shared how the packages only show what people want to see and hide from people what they do not want them to see:

> Many kinds the um the packaging um they will, they will enlarge the things that you, they think you will want you to read, for example, you know, they will have to name this one "Life" it's really appealing and um but in the small print there are often words that you won't understand and in fact, many times that you ignore those words then later on if you try to Google™ that word you find that that they are really bad preservatives.
>
> Participant 4, mother, individual interview, April 2018

As health professionals, it will be essential to explore people's skepticism further and try to help them by giving them the tools either to better analyze the food products or to empower them in their own food decisions. Learning to read food labels and to make food informed decisions could get complicated in the future if the skepticism of people increases. They will understand what they will be reading, but they will not trust it. We will have to offer some solutions to parents and the public regarding food selection.

iv) The uncertainty of serving sizes

Some parents during the focus groups and interviews mentioned that it was difficult for them to re-calculate or judge the amount of food that they would eat and based on that to know how much of the nutrients reported they would truly be eating: "I don't like that I have to calculate um, um, sometimes, what a serving represents and what somewhat one will actually eat" (Participant 13, mother, individual interview, May 2018).

They also mentioned that it was a lot of math to do the calculations to be able to compare one product with another. This problem was because the serving sizes in which one product was reported was different than the other product:

> Because sometimes the serving size it's really hard to judge. So, if they're telling you that let's say there is a 120 calories per serving and they're telling you that there is like um 90 grams serving or something, so what does that look like? How do I know if I am getting like four servings at one time? or you know it's kind of- I wish they had a-l-l the same serving size. Like everybody had to do like a 250 ml, like 1 cup of cereal, every single box has 1 cup of cereal so you can really compare between different brands about like "okay this one has 60, this has one has 120" and you can make your decision based on that.
>
> Participant 8, mother, individual interview, April 2018

Luckily, with the new regulation of the food labels in Canada, all the serving sizes of the same products will be based on the same units (for instance cups, slices, and so on) (Health Canada, 2017a). This change will help parents and consumers to make a faster comparison between them to make a food informed decision.

3.2.3 Preparing food

Preparation of food is the third overarching theme in this study which aligns with the third domain of the concept of food literacy (Vidgen, 2016). Preparation of food in Vidgen's definition refers to "being able to make a good tasting meal from whatever food is available" (Vidgen, 2016, p. 55). The overarching theme of preparing food in this study includes five themes (figure 4) such as 1) active and passive development of cooking skills, 2) different venues to look for recipes, 3) cooking techniques, 4) facilitators to prepare meals and finally, 5) barriers to preparing meals.

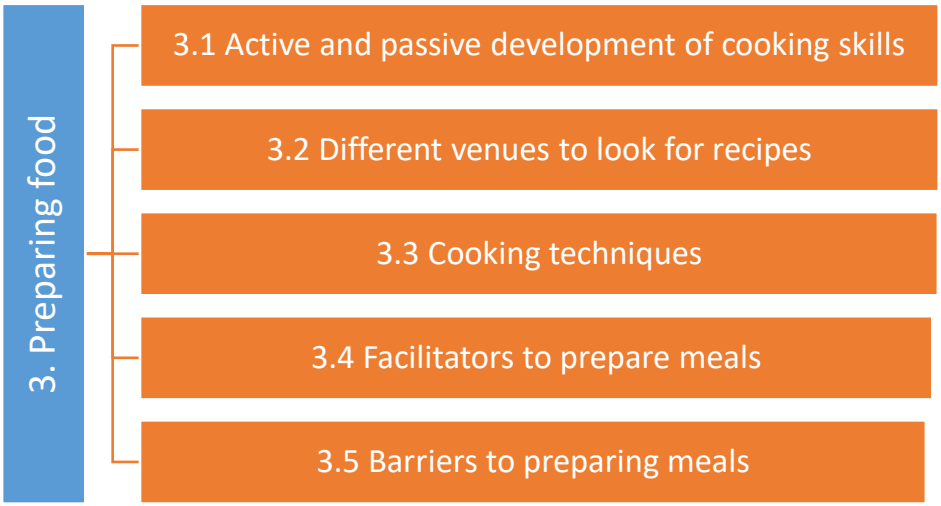

Figure 4. Overarching theme of preparing food with themes identified

3.2.3.1 Active and passive development of cooking skills

We identified that parents have different reasons and different ways to develop their cooking skills. In this study, parents learned to cook in either i) active or ii) passive way. These two ways of learning were not mutually exclusive; however, based on what parents shared about learning how to cook, this is how we categorized some of their responses.

i) Active learning

Some parents shared that they learned how to cook either because they needed to or they wanted to. They actively looked to be more involved in the kitchen and the cooking process. Some of the reasons mentioned for learning "because they needed to" were because when they moved out of the parental home, it was a necessity to learn how to cook when they were living on their own. For instance, one mother described having to learn how to cook as

a "survival" thing: "I think it was more like for survival because lived on my own for a while. And I was having to feed myself" (Participant 6, mother, focus group, December 2017). Moreover, learning how to cook can bring variety to the diet. Some parents mentioned that they knew only some dishes like pasta, but they needed to prepare more food than this:

> Once I moved out after university I needed to cook to feed myself (laughing) so it was self- self-preservation I think for part of it (laughter). I needed to feed myself with more than spaghetti and pastas, got really full really fast. Um, but then I've always liked baking so like baking but, you could not eat pies throughout the whole day really, like different types of pies.
>
> Participant 11, mother, focus group, January 2018

Other reasons were because they had to help with the daily chore of cooking at the household while growing up. A mother mentioned that she used to cook when she was younger, using simple cooking techniques that she was able to perform:

> I have been cooking for my family since I was probably 11 years old, 12 years old? My parents worked late and my sister and I who was one year older than me would have to get dinner ready for when they got home. They would have taken something out of the freezer like ground beef or something and we would make like hamburger patties or mashed potatoes, just simple things. You know, that doesn't require very much chopping kind of thing.
>
> Participant 8, mother focus group, December 2017

Another explanation for actively learning how to cook was because of their desire to cook better. For instance, some cooking styles of these parents have evolved and improved over time. Some of them mentioned having to learn how to cook because they became a mother, and this would translate into learning and cooking healthier food for their household. It was interesting for instance, even though a mother hated cooking, she learned how to do it to offer healthier food to her children:

> I hate cooking (laughter), but um you start feeling guilty after like the fifty fish finger that you give to your children (laughter) 'cause I'll just go with that I'm fine and then yeah pregnancy and kids do amazing things. You have to kind of learn by trial and error.
>
> Participant 15, mother, focus group, January 2018

In this study, children were a big motivator for parents to improve in different areas of food literacy. For some parents, sometimes being a better role model, making better food selections or sometimes such in this case, to know that they were offering healthy food to them. More details of this motivator are included on facilitators to prepare meals (p. 90).

We are not aware of the average age parents learned how to cook as this data was not systematically collected from them. However, we can infer that for those who learned how to cook when they moved away from home to study at university, they were around 18 years old. Some studies show that the younger age a person learns how to cook, the more benefits for them.

In a cross-sectional study conducted in Ireland, 1049 adults (20-60 years old) were asked: *"*At what stage of your life did you learn most of your cooking skills*?"* (Lavelle et al., 2016b, p. 3) and compared this with self-reported cooking skills, confidence, food safety practices, cooking attitudes, diet quality and general health (Lavelle et al., 2016b) by various age groups as children (less than 12 years old), teen (12 – 18 years old) and adults (18 years old or more). They found that people who mentioned they had learned during childhood or during their teen ages had a higher level of "cooking and food skills, cooking practices, cooking attitude and diet quality" (Lavelle et al., 2016b, p. 10). Therefore, this shows how the development of cooking skills should start from the early ages to have the most benefits.

ii) Passive learning

We identified that parents in our study also developed cooking skills through passive learning. Parents mentioned learned how to cook by observing their mothers (role modelling). For some, they said that it was natural for them to try to do what their mother did in the kitchen. Other parents also learned by watching cooking shows and attempting to prepare those recipes or getting inspiration in doing them. Also, looking for recipes on websites or going to restaurants and see what other people were serving and doing was a way to increase their cooking repertoire.

Some mothers mentioned that they learned by copying their own mothers: "I learned my cooking from my mom, watching her cook all the time. It was just natural for me I wanted to be like her on cook" (Participant 3, mother, focus group, November 2017). Similar to our study, Lavelle et al. (2016) also found that mothers were the main source of learning in the adults that they surveyed (Lavelle et al., 2016b). Nevertheless, we can imply that to keep this tradition going it is essential that at least one of the parents at home have enough cooking skills to transmit to their children and to teach them, even if the mother is not the one that models these skills; further research to confirm this would be needed.

For some people, watching cooking shows is a source of inspiration, and sometimes they would try to replicate these in their kitchens: "I think my husband is more adventurous in trying different things and he usually watch Food Network, so he would try it" (Participant 4, mother, focus group, November 2017).

Although the number of cooking shows has been increasing, there is not enough evidence to show a relationship between watching shows and cooking more. In a study conducted in Belgium, they examined the relationship between watching cooking shows and cooking practices of adults (male and female 18 – over 60 years old). They found that men over the age of 38 years-old who watched this type of cooking shows were more likely to cook (De Backer & Hudders, 2016). More studies in this area will be worth investigating to determine the reason why passive learning through cooking shows is effective in men but not in woman who based in our study seem to be more likely to learn from their mothers.

3.2.3.2 Different venues to look for recipes

Parents of this study had different ways of increasing their repertoire and getting ideas on which dishes or meals to prepare. For this reason, we categorized two different ways to show how parents preferred to get their recipes as i) traditional style and ii) digital world. The first subtheme is the "traditional style" which includes, parents asking for references to recipes, also parents having cookbooks available at home. The second way of looking for recipes was named as the "digital world" because parents mentioned looking for recipes online, either at websites, blogs or videos.

i) Traditional style

The traditional style includes the use of cookbooks by parents. Mothers in this study mentioned having cookbooks and using them: "I have some cookbooks that I trust, everything I make from them is fantastic" (Participant 2, mother, focus group, November 2017).

Using cookbooks can be considered as a positive experience for people who see cooking as an enjoyable activity. For instance, having cookbooks for someone can be seen with some emotions attached to it: "I have shelves full of books, cookbooks, I love cookbooks" (Participant 14, mother, focus group, January 2018).

The type and practicability of recipes included in the cookbooks can vary. Some cookbooks can be considered harder to follow than others regarding how uncomplicated to find the

ingredients are: "[…] And then few books people recommended but the problem with cooking books it's like who does have all those ingredients in their kitchen?" (Participant 15, mother, focus group, January 2018). Potentially, parents need to be selective in which cookbooks are suitable to use depending on the type of ingredients required. At least they need to be able to find most of the ingredients in the region and at an affordable price.

Moreover, the traditional style of seeking information also includes following recipes based on other people's recipes from their social circle, such as family and friends:

> I, um, very rarely pull out a cookbook. But, I do have like my staple Betty Crocker™ cookbook that I used a lot. And, like my mom's recipe book, which is a binder of the recipes that she gave me in. So, that's another thing, I would, especially if it's a staple kind of thing, but I didn't- I knew that's staple but I've never made before. I would go to the Betty Crocker™ cookbook as well as my mom's.
>
> Participant 7, mother, focus group, December 2017

Trusting in other people's recipes was categorized as a traditional style in this study because of the tradition of passing a recipe from word-of-mouth (or in this case written to preserve it). Usually, these recipes come from people who we consider are more experienced than us in the kitchen and that is the reason for trusting their recipes. Another mother, for instance, mentioned asking a friend, if she had to cook something new: "I have a friend who does everything from scratch like she wouldn't know where the package food section is. Her children don't eat cereal, it's quite amazing, I'd ask her" (Participant 15, mother, focus group, January 2018).

ii) Digital world

It is worth noting that the use of technology in the different areas of food literacy is increasing. Also, parents of young children are looking for recipes online which might be highly convenient for them due to the easy access to technology. When they were asked where to look for a recipe, some of the answers were on the internet or online: "I would look it up online" (Participant 5, mother, focus group, December 2017). Certainly, some of them have already identified which websites or sources to visit to get their meal ideas. Some of them mentioned a wide variety of websites, including social media, cooking blogs or other platforms. Facebook© and YouTube© were some of the social media platforms that parents mentioned as sources for getting inspiration: "I find recipes on Facebook©" (Participant 5, mother, focus group, December 2017) and "I go a lot on YouTube©" (Participant 10, father, focus group, December 2017).

More specifically, one of the common ways to find recipes on Facebook© or YouTube© is through viewing short videos where they show the preparation of a recipe at a fast pace. A mother shared that because of the way it is presented, it conveys her the idea of the recipe being easier to perform:

> I've been learning a lot lately from BuzzFeed©, which I never expected (laughter). Those like ninety-second videos they are fantastic because I feel like I can create croissants someday because I've seen them way through the whole process (laughing). I haven't tried it yet.
>
> Participant 14, mother, focus group, January 2018

Some of the other sources of inspiration mentioned were Pinterest©, and some cooking blogs such as Vanilla Blog©, Skinnytaste©, Allrecipes©, The Kitchn©, The Spruce©™, Isa Chandra©, Oh She Glows©, and Serious Eats©. Some of this cooking blogs were followed regularly and not just at occasional times to look for recipes. For instance, a mother mentioned keeping updates on a specific website, and interestingly some of the recipes became some of her recipes as well.

> There's one blog called Skinnytaste©. It's just a woman who likes to cook. She does include all the nutritional information and some of them she would make like a lighter version of chicken parmesan or something like that. So, I follow her. I used to follow her very regularly, like checking if she posted a new recipe every day but, I don't have time for that now (laughter). But, some of my like staples came from that website.
>
> Participant 7, mother, focus group, December 2017

Something important to note about recipes online, either videos or cooking blogs is that because you can see the result of the recipe this may make people want to try the recipe just because the picture of the dish looks delicious to them:

> […] But then for recipes, if I am looking for there is a site called The Kitchn© and there is a site called The Spruce©™, and they'll have good ones on the page- when have pictures it usually helps- whenever they usually match it up with the picture looks like. Turns inspirable because of that.
>
> Participant 11, mother, focus group, January 2018

In addition to going to the specific websites that parents are familiar with, they can also just look on Google™ for the dish that they have in mind to prepare and then select one specific recipe among the different options that the browser will show to them:

> I really like Allrecipes© from most of the recipes. There are a couple like sites that have um recipes from back home, I don't quite remember the names of them and we actually just get them by searching on Google™ for a specific dish and they are always there.
>
> Participant 12, father, focus group, January 2018

In a study conducted by Doub et al. (2016) was found that 583 participants reported using four traditional sources for meal ideas and seven internet-based resources (Doub, Small, Levin, LeVangie, & Brick, 2016). As in this study, the options of internet-based resources were also greater in number. The most common resources reported in the study conducted by Doub were family and friends, cookbooks and food community websites (Doub et al., 2016). Something interesting about Doub's study is that people who reported using cookbooks as a resource for meal ideas were the ones who mentioned cooking more often at home (Doub et al., 2016). Also, according to the results of this study, parents were the ones who looked more for resources for meal ideas (Doub et al., 2016). Seeing the results from our study, we could imply that parents were looking for a wider variety to offer to their children or also because they were looking to increase their repertoire and cooking skills.

3.2.3.3 Cooking techniques

Another theme in the overarching theme of preparation of food is cooking techniques which include the repertoire of skills that parents of our study mention to have to cook. We identified that parents preferred practical and healthy meals for them and their household. For instance, parents mentioned cooking from scratch (healthy), but still, the type of food cooked from scratch is quite simple (practical): "Most things are from scratch but those are things like super simple" (Participant 7, mother, focus group, December 2017). They also prefer the "one-pot meals" (practical) because they mentioned that they could prepare everything, leave it in the pot and not having to worry about it:

> I certainly like the whole everybody in the pot kind of ideal like I don't have to prepare like a salad separately and a starch separately or whatever if it's just like meat, vegetables, everything all at once, so a lot easier and then he'll eat (child) more vegetables that way maybe doesn't know they are there or something. Um, and then it's just faster- like casseroles, spaghetti sauce or chili one pot done.
>
> Participant 14, mother, focus group, January 2018.

Another aspect to note is that sometimes meals will vary depending on the day of the week. For instance, meals for the weekdays will be more monotonous and simpler compared with meals for the weekends when parents have more time to prepare more elaborate dishes:

> And then, on weekdays it's kind of like a school uniform it's like a meat, veggie and rice um so the night before we've pulled out the meat from the freezer and generally my husband will go home and get food on and I'll pick everyone and get them all home. And then the weekend is a little bit more adventurous.
>
> Participant 15, mother, focus group, January 2018

The cooking techniques used by parents in this study were based as well on their preferences. These preferences can be based on the influences of their culture or also based on their own liked or disliked cooking techniques.

Independently of the cooking technique selected, parents need to have adequate cooking skills to create at least basic or more elaborate meals. There is evidence that parents with lower self-rated cooking skills have a higher likelihood of reporting food insecurity compared with other households after adjusting for household income (Broughton et al., 2006), which means that higher income does not mean higher cooking skills.

3.2.3.4 Facilitators to prepare meals

We identified five main facilitators to prepare meals by parents participating in this study. Those facilitators were: i) confidence in cooking and adapting recipes, ii) children as a motivation, iii) cooking as a shared household chore iv) cooking as an enjoyable activity, v) use of convenient foods and being organized.

i) Confidence in cooking and adapting recipes

This subtheme includes parents being able to adapt recipes, having confidence in a variety of cooking methods. Therefore, they prepare dishes that they feel confident preparing. Some of the cooking preparations that parents mentioned feeling comfortable using are steaming, roasting, and barbequing. A mother said feeling confident in using a variety of cooking techniques: "But I do cook every other, I mean, I roast, I sauté, I braise, I boil, I am, I am an expert at rice" (Participant 2, mother, focus group, November 2017).

Also, the ability to try new recipes or new variations of recipes is an essential aspect of this confidence. A father mentioned that even when he looks for a different meal idea he sometimes just makes the recipe it's own adapting it to his personal taste: "And sometimes I just make my own, you know, I change things so if I liked one thing or the other I just mix it and then try it" (Participant 10, father, focus group, December 2017).

As mentioned elsewhere, having the skills to prepare food is linked to healthy diets (i. e. wider variety of vegetables) (Winkler & Turrell, 2010). According to a review conducted by Garcia et al. (2016), the cooking confidence and the number of fruits and vegetables included in the diet can be increased with "community interventions" (Garcia, Reardon, McDonald, & Vargas-Garcia, 2016). However, it is also mentioned that confidence is usually a self-reported measure and sometimes the current skills can be different compared with their perception (Garcia et al., 2016).

Recently, a new and promising tool has been developed to help measure cooking and food confidence that has shown to have "satisfactory reliability and validity; also, it is consistent over time" (Lavelle et al., 2017, p. 12). Therefore, interventions aiming to increase food and cooking skills as well as confidence can use this type of tool to help in the evaluation of the interventions (Lavelle et al., 2017). More dissemination and use of validated tools can help to compare different nutrition interventions to see which ones work best to accomplish the improvement of cooking skills and confidence in the participants.

ii) Children as a source of motivation

Parents mentioned that when they became parents, they started to cook healthier. Therefore, children will be a source of motivation to cook more often at home instead of buying ready to go food.

> And now that we are parents we definitely switched to more healthy stuff. So we try to really stick to raw ingredients and just make raw food, stay away from buying anything processed. But, so that kind of pushes you to, to learn other things that they might like and make them part of the meal.
>
> Participant 10, father, focus group, December 2017

Parents also said to feel good when they offer a home-cooked meal to children: "I feel good as a parent if I try to have most of the time a healthy cooked meal" (Participant 9, mother, focus group, December 2017). A parent feeling that is doing a good job can help to increase their self-esteem. Cooking meals at home can be usually interpreted as cooking healthier. Of course, it will depend on the type of food prepared but in general parents will have more control over the ingredients and portions used to cook.

Something also interesting is that even with limited time to cook, parents try to offer the best food option for their children. Keeping in mind that sometimes there is no perfect time

to cook and prepare but parents most of the time keep in mind that they want and try to offer healthy options to keep their children healthy.

iii) Cooking is a shared household chore

As mentioned elsewhere, the household-food activities were mostly a female role in the past (Harnack et al., 1998). However, nowadays it is shown that male involvement in household activities has been increasing (Flagg et al., 2013).

During data collection for this study, it was mentioned that some husband/fathers were if not in charge, at least involved in the food preparation. One mother said: "My husband also cooks a lot, so we are both kind of creative in what we cook" (Participant 1, mother, focus group, November 2017). For some households, the cooking was equally shared: "But my husband too cooks as much as I do and he is actually a really good cook […] it's deeply shared in our household" (Participant 3, mother, focus group, November 2017). Also, it was mentioned that the husband was the one with more cooking skills or the one in charge of cooking:

> Well, to tell the truth. My husband does more cooking than I do.
>
> Participant 4, mother, focus group, November 2017

> And then, when I met him, he likes to cook. And when I was student I did take care of dinners but now, that, you know, we are now in our careers or what not and he is off at four o'clock so he does the cooking, he likes to cook, he just, he does it, I don't remember last time I cook, a dinner.
>
> Participant 5, mother, focus group, December 2017

We recognized the need to avoid the use of "role-gender" activities such as labelling cooking as a "female activity". Even when a woman or mother does not cook or does not like to cook we have to de-construct the mentality it is a need to cook for a woman.

What is important is that at least one person in the household have enough cooking skills and confidence to cook healthy food, whether it is the mother or the father in charge of this activity at home. However, two parents having cooking skills in the household can be a facilitator to prepare healthy meals because the time of cooking can be split, or one can help when the other is not able to cook. The most important part is ensuring that someone is in charge and can cook healthy food for the household.

iv) Cooking as an enjoyable activity

Whichever person is in charge of the cooking task at the household level; if the parent (either mother or father) sees the cooking as an enjoyable activity, this may be a facilitator to cook more often at home and to keep cooking healthy food at home. For instance, as mentioned elsewhere, people using cookbooks tend to cook more often at home (Doub et al., 2016). Some mothers mentioned they get pleasure from cooking: "I do like to cook, um not necessarily bake but I really like to cook" (Participant 6, mother, focus group, December 2017). The reason for some parents in this study enjoying the cooking could be linked to when they were growing up some of these parents related the cooking activity as a family and enjoyable event.

> I really like- I started cooking when I was probably like eleven or twelve too like I just had interest in it. I really used to like doing it. I used to like commit my parents like to make a special meal kind of like once a month, making something really fun like from a magazine or something.
>
> Participant 7, mother, focus group, December 2017

Also, for some mothers, they wanted to preserve and continue with these traditions with their children. They attached some positive emotional memories with food and with the preparation of food that they would also like to teach those to their children to help them develop a good relationship with food:

> I've been cooking since I was a kid, my mom and my grandma loved to cook so they kind of ( ) me- my grandma used just like to invite me over to make chicken soup or something. Um, yeah, I hope I get to do that with my kiddo one day, but I don't really know if he is interested or not.
>
> Participant 14, mother, focus group, January 2018

If parents and children see the cooking activity as something to enjoy, they could be eager to do it more often by pleasure instead of seeing it as a chore or something obligated to do so.

v) Use of convenient foods and being organized

Parents of this study used other facilitators to assist them in preparing food that included organizing themselves to be able to cook meals during the weekends, in this way they will have food ready for the week:

> I would try to do something like a meat on a Sunday that can kind of carry us through a couple of days whether it's a chicken, pork or something that carries through um with that I usually add vegetables.
>
> Participant 11, mother, focus group, January 2018

This also had some overlap with the planning and management theme described earlier because it implies that parents plan what to eat but because in this case they perform the activity of cooking or preparing the meal, this was included under the facilitators of preparation of meals.

For parents, some semi-prepared foods were considered convenient. However, this does not mean that all the types of foods that parents considered convenience foods were high in fat or sugar. For instance, parents of this study referred to convenience foods or semi-prepared foods also to vegetables that are already chopped or vegetables that are frozen:

> I just discovered that you can buy beets that are already cooked and peeled and that is the greatest invention ever (laughter). I hate cooking with beets but they are so good but I hate turning my whole kitchen pink.
>
> Participant 14, mother, focus group, January 2018

In this sense, some "natural" convenience foods like these would be suggested to help parents to prepare healthy home-cooked meals and keeping it the less time possible. A more specific definition of convenience food is needed since it includes a great number of products (Jackson & Viehoff, 2016). For some people convenience foods would have a negative connotation which is not always the case as in this example:

> Like sometimes I buy vegetables that are already chopped. So, are like, I know at city market they have like, um, 'cause they have a little spiralizer thing to make veggie noodles, but it takes a little bit longer. So, they have the noodles that are already spiralized, veggie noodles (laughing). Just make things a little bit easier. I know that they are more expensive, but I know I can just dump them on a pot.
>
> Participant 6, mother, focus group, December 2017

3.2.3.5 Barriers to preparing meals

As well as facilitators, parents also face barriers in the preparation of meals. Analyzing the data, we identified two main barriers that parents of this study experienced in preparing meals. The first one is the limited time to cook that parents have; the second barrier identified is that for some parents, there are challenging cooking techniques and foods to prepare. In this study, parents work either part-time or full-time, therefore they mentioned

having limited time to cook. The fast lifestyles of parents have had consequences on the time spent in the kitchen. For instance, a mother mentioned that because of lack of time she prefers simpler food preparations that does not involve too much chopping:

> It's because of the time, yeah. And, again, you know, we just have like multiple things going on. We have like two hours between home time and bedtime. I would rather not spend my time in the kitchen chopping a vegetable.
>
> Participant 7, mother, focus group, December 2017

Research has suggested that time could be an essential part of the preparation of foods for adults (Monsivais et al., 2014). Related to the limited time parents have to cook there are also the priorities of parents, and how they choose to spend their time. Because they have limited time after work, they prefer to spend this time with their children in quality or family time instead of being in the kitchen cooking, and that is their reason for choosing more practical meals for their family:

> You know, doing a little bit of the prep work and then later eat with everybody. Because yeah, I like, I like to spend time with my kids, considering that I work 40 hours, and then I pretty much have 40 hours with my kids like after school or after work and then on the weekends. It's like 40 hours with them; it's all that I have per week. So, you know, I would rather do activities with them than spend my time cooking complicated stuff.
>
> Participant 8, mother, focus group, December 2017

Something interesting is that regardless of the limited time that parents have, they still feel and would prefer to find a balance which permits them to have time for their children also to have balanced financials and a healthy diet.

> But also thinking just about trying to feed my family um healthy options while still staying within a budget and giving us the time to spend together, so it's not like spending all day and all night cooking. Um, so trying to find a balance with, with options that are healthy or healthier and um, but also quick and so that we can actually enjoy our time together.
>
> Participant 14, mother, individual interview, April 2018

Setting priorities on time seemed to be something relevant to parents. They wanted to develop that connectedness within their family by "enjoying time together". Lack of time could be a barrier, but they still looked at the ways to overcome that and keep their family healthy by offering healthy options that are easy and fast to make. More research on how to help parents reach this balance in the different aspects for them and their family will be needed. If parents are told just to allocate more time to the cooking but they compromise

other areas as the quality family time they will not find the balance that they are looking for.

The second barrier identified in this study was challenging foods and cooking techniques. For some parents in this study, some foods represented a challenge to cook. For instance, some would think that cooking some meats is difficult because they might not be as familiar with these techniques due to some food preferences (such as being former vegetarians). Parents mentioned some concerns about meat cooked to temperature because they are aware that this can be a cause of food poisoning for them or their family.

> Cooking meat for me, it's not- I don't know much about especially red meat, um, I'm getting better. Like, um, seafood is easy, because back home seafood is tradition but um and but poultry and red meat I am learning I don't think I really have the skills.
>
> Participant 13, mother, focus group, January 2018

> I find cooking like a whole chicken or the whole roast or something like that I find that a real challenge maybe because I haven't cooked a lot of meat recently, but I am always terrified that it will be undercooked and I will poison my family.
>
> Participant 14, mother, focus group, January 2018

Related to this challenging cooking techniques, parents with some eating patterns will be familiar with cooking certain foods. For instance, a person who follows a vegetarian style of eating might not be as familiar with cooking meat compared to someone who regularly consumes meat. Cooking techniques as mentioned elsewhere were acquired for some parents during their childhood or when they moved out of their parent's home. However, sometimes neither of those were determinants for developing cooking skills. Moving away from home does not translate automatically in the development of cooking skills since these must be actively developed.

An example of this is a mother sharing that she was not taught about healthy eating at home and she did not develop those cooking skills until later in life:

> But, so growing up, um, and it wasn't really about what was healthy, it was more about whatever you can eat type of thing. Um, sometimes, my mom or dad cooked but sometimes they didn't. So, and then, when I moved out on my own, it was more - because I guess I wasn't taught about healthy eating, I, um, my husband so bugs me about it, because I would eat out of a box. Um, like whatever because it was Kraft Dinner, noodles, um, I didn't eat healthy.
>
> Participant 5, mother, focus group, December 2017

A significant determinant of developing cooking skills is if a person enjoys cooking. If a person does not like to cook, thus, it will not be as easy to practice and to enjoy being in the kitchen. Even parents who do not like to cook find their motivation to learn to cook and to cook healthier in their own children. However, if a parent has the support of their partner to meet those requirements (cooking at home) they might not see as needed to develop cooking skills themselves.

3.2.4 Eating

Eating was the fourth overarching theme of this study, following the definition of food literacy by Vidgen's (Vidgen, 2016). Three themes were categorized in the overarching theme of eating (figure 5). These themes were 1) diet is important for children's health; 2) eating as a family, and 3) barriers to eating.

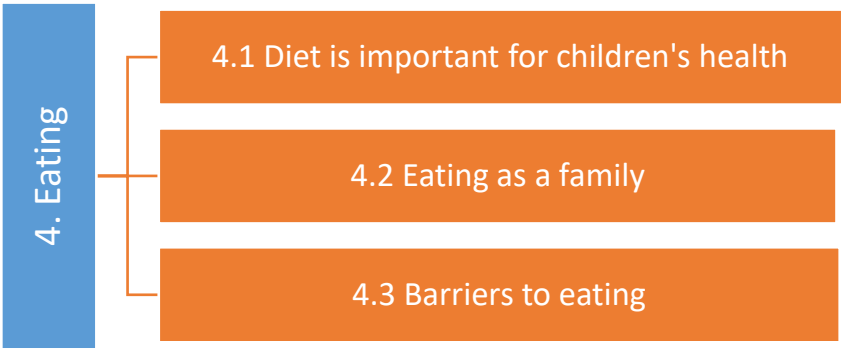

Figure 5. Overarching theme of eating with themes identified

3.2.4.1 Diet is important for children's health

During this study, parents shared that nutrition can affect their children's health and well-being in multiple ways. For instance, parents can be more aware of the importance of having a healthy diet if they see that in the family there are different diseases that are directly or somewhat related to nutrition. In this case, they would want to prevent those diseases by taking care of the way they eat to prevent them:

> We try to avoid a lot of the processed as much as we can, part of it's um preventative I guess nutrition um just cause' Crohn's and colitis runs in our family so part of it that preventative nutrition because they know that diet can play a part into that. So not having as much processed just as preventative um with that.
>
> Participant 11, mother, focus group, January 2018

Parents mentioned sugar as something that affects children behaviours; therefore, parents were concerned about children consuming this:

> […] She (daughter) went with my parents one time and they gave her like a huge bowl of frozen yogurt and she was crazy that day (laughter). So, I noticed that. I was like "um you should keep her until she calms down" so, yeah, that sugar makes her c-r-a-z-y.
>
> Participant 6, mother, focus group, December 2017

Parents also mentioned that sugar affects children by making them hyperactive. This hyperactivity would be a short-term consequence of sugar, and maybe the long-term implications for children are not considered at this stage of age, yet. One common way of consuming sugar is through sweetened beverages. A literature review conducted by Bleich and Vercammen (2018), found that some of the main consequences of sweetened beverages for children were obesity and tooth decay (Bleich & Vercammen, 2018). According to this literature review, almost half (45.6%) of children aged 2-5 consume sweetened beverages (Bleich & Vercammen, 2018). Therefore, this is a problem that could potentially affect children of parents participating in this study. Even though parents of this study did not mention precisely in which presentation of sugar they were referring to, drinking sweetened beverages might be a common practice in children that should be limited.

Parents mentioned that nutrition positively affects their children's health. One mother said that when her child eats a whole variety at dinner from different food groups he tends to sleep better than when he does not eat complete meals "I found my- my older son, I noticed for dinner, he eats more of a wholesome, if he is getting a little bit of everything like veggies, protein, fruits, he has a better sleep" (Participant 3, mother, focus group, November 2017). Parents can see both positive and negative effects on their children's health because of diet. To keep well-being in children, therefore, it is important to continue offering them a healthy and balanced diet which includes food from all the four food groups and the recommended serving sizes by Eating Well with Canada's Food Guide (EWCFG) for their gender and age (Health Canada, 2011).

i) Parents decide which foods to avoid or to include for good health

Parents in this study mentioned that they limited certain types of foods to keep their children and family healthy. Some of these foods were processed meats, processed foods, and food high in sugar and sodium. The following quotes are examples of what mothers mentioned to limit in their households:

> I don't think we have a lot of processed foods in our fridge. We have like- some things in our pantries like snacks and what not but nothing crazy. I do try shop for things that are bit more healthy if I am buying like a box or something like fruit snacks or whatever, but that's not very often so, just trying to avoid all the processed foods.
>
> Participant 5, mother, focus group, December 2017

> Juice and pop, yeah. I don't even buy juice and pop.
>
> Participant 8, mother, focus group, December 2017

> I also avoid salt as well- I noticed when I am cooking, um, we leave up the salt out together and then we season our own dishes but the kids, will have, yeah, less salt on their dishes, yeah.
>
> Participant 3, mother, focus group, November 2017

Parents in this study considered vegetables and protein as the most relevant foods for good health that they wanted to make sure their children have an adequate intake. When asked about which foods they considered essential to include, most responses across the focus groups were similar to the response of this mother: "I think protein and vegetables" (Participant 5, mother, focus group, December 2017). They thought that the other foods groups could be easily fulfilled at any other moment of the day such as at the childcare, for instance. One mother mentioned that she was not that worried about her children's consumption of grain products or fruits because children would consume those without difficulty in the childcare:

> I think, I focus kind of on those two (vegetables and proteins), also maybe because I know they'll get carbs and fruits really easily. That's not an issue throughout the day at daycare or what have you. Then I try to make sure that there is a protein and veggie for sure at their lunch [cater?] or at supper time, yeah.
>
> Participant 9, mother, focus group, December 2017

Therefore, at home, parents will make sure to offer vegetables and foods that are a good source of proteins. For instance, parents were aware that proteins are important and if children were not consuming meat to get their proteins for different reasons, they would find a food alternative that included protein to offer to their children:

> We also like try, like especially during supper time, try to put cheese on, especially because my older daughter, because she doesn't eat a lot of meat. So, for having meat, then she won't have that protein and I know that cheese is protein so […] and then, if not meat, beans, I know she likes the beans and stuff so I try to give her proteins, but try to add some like dairy as an alternative form of protein kind of thing.
>
> Participant 7, mother, focus group, December 2017

> We just try to do the vegetable, starch, protein. Um, 'cause we don't eat meat everyday and um so we try just to do one just to balance it a little bit and make sure that we are not- 'cause one of the thing with eating vegetarian meals is you have to be very aware of the protein or the- and the iron um so we just make I guess combos I don't know, sometimes curries work really well for kids- for our kids, um not too spicy though. So we can combine the protein and the vegetables I think they do eat the vegetables better that way too.
>
> Participant 13, mother, focus group, January 2018

ii) Using a positive and comprehensive approach to feeding children

Some parents mentioned that they preferred to not restrict certain foods and instead of this they recognized the value of instilling moderation as a habit. They said having tried both approaches (restriction and moderation), and moderation has worked the most for them. They indicated that children that perceived a food as prohibited tend to "get crazy" when they get that type of food, and they have big desires to eat it:

> With my oldest, was like, she was my first and only child I was very very strict with like everything she ate. Like she didn't have a cupcake until her first birthday; she didn't have juice until she was probably almost t-w-o. You know, I was very very strict but I found she gets more, and she still goes c-r-a-z-y for those things. […] So I kind of ease back a lot of things, and I actually like "you know what? If we are gonna have- why not have a half cupcake and on Sundays have some cookies", but just try to introduce things in moderation […] And she is much more, kind of calm on those things now and she doesn't go so crazy when she has those ones. We kind of do moderation rather than trying to be like "oh I will never gonna buy that and never bringing it into the house" or whatever.
>
> Participant 7, mother, focus group, December 2017

This mother's example aligns with the evidence on the issue. Children, who are restricted from specific food by their parents, tend to later want more of that restricted food (Fisher & Birch, 1999). Fisher and Birch (1999) found that girls of whose parents restricted them to certain foods (high in sugar and fat for instance) when they had the opportunity to eat them, their consumption was higher than those children that did not have that restriction (Fisher & Birch, 1999). They included preschool boys and girls in the study, but this result was found only in girls. A more recent study replicated Fisher and Birch's study, however,

they also wanted to determine what are the characteristics of children who react in this way to restriction (increased intake) and found that children with "lower in inhibitory control" had a higher consumption as a result of the restriction (Rollins, Loken, Savage, & Birch, 2014, p. 37). Also, children who considered the food restricted by their parents was "highly reinforcing" and if they were exposed to a restricted food by their parents in the past were more likely to have a higher intake of those foods (Rollins et al., 2014, p. 37). This study confirms and concludes that the approach of restriction by parents does not help children to reduce consumption of this type of food, and this is especially true for "children with low inhibitory control" or "children who find restricted food highly reinforcing" (Rollins et al., 2014, p. 37).

Parents in this study also realized this with their children. They could note that by changing the approach of restriction to moderation, children were more apt to control themselves and their willingness to consume those types of foods. Moreover, according to these parents, children with the moderation approach know that they can have any food whenever they want but in small quantities; therefore, children do not see it as trying to get as much as they can at once.

For some parents in this study, proper nutrition means that children have enough food and nutrients from the different food groups throughout the day and not only at one simple meal.

> The piece of advice or a way of thinking about it that I heard years ago that I think of, it's to think about not a balanced meal but a balanced day. You know, that it doesn't really matter what exactly is in one meal, as long as you know that the diet generally is including whole grains and fruits and vegetables and some protein and some fat, and like if you've got all of it and you know you're getting all of it.
>
> Participant 2, mother, individual interview, April 2018

For this reason, when they perceived that a child was missing some food from a specific food group, they tried to offer it at another time. The Alberta Nutrition Guidelines for Children and Youth (ANGCY) (2012) recommends that parents should provide children with foods from 4 food groups during meals and food from 2 food groups at snacks (Government of Alberta, 2012). Some parents in this study thought more about having a "balanced day" instead of a "balanced meal" or focus on specific ingredients; of note, however, we did not assess parent's knowledge of the number of food servings recommended for children. However, even if parents took the approach of balance the entire day instead of each meal (as suggested by ANGCY), they would need an excellent understanding about the recommended serving sizes per day for children. If a balanced day approach is taken, it

would be worth studying if parents are aware of the food servings recommended for children and whether or not they are meeting their nutritional needs based on this approach. More studies on the differences between these two approaches are needed. It will be important to know if parents who take the "balance day" approach are aware of the requirements for their children.

3.2.4.2 Eating as a family

Parents in this study mentioned eating together at the table as a family. For instance, a mother mentioned having a designated place to eat: "In the kitchen, at the dining room table" (Participant 8, mother, focus group, December 2017). Another mother also mentioned having specific spaces and times for the different activities such as eating:

> And we are kind of like, they are so kind of, we have designated areas. Like if it is food time, it's either at supper time or at the island like at the dinner time, we don't, it's not like we will take them to the bed and snack around the house. So it's kind of this is your time, if you wanna eat then now is it.
>
> Participant 9, mother, focus group, December 2017

Benefits of children eating with their parents as a family were mentioned and recognized by a mother. She mentioned that when the family sit at the table together, they tend to eat more:

> Well, we all eat when we do actually sit down and eat at the same time the kids eat more. And they'll eat what is front of them as opposed to losing interest and going to the cookie jar or looking into the fridge and taking another piece of cheese.
>
> Participant 15, mother, focus group, January 2018

Having family meals can bring different benefits. For instance, children's benefits identified in this study were that their eating habits were influenced by role modelling. When eating together, parents can start teaching their children about healthy eating habits through their own example and the different interactions happening at the table.

For instance, when asked if they considered eating together as a family as beneficial, a mother brought up that having family mealtimes goes beyond the nutritional benefits:

> I think in many ways. For, for sure the nutrition that they are getting out of it, but also the family time, social time, the attention that you have together. It's another way of having some routines, some rules, some guidelines, some predictability, I guess.
>
> Participant 9, mother, focus group, December 2017

Sitting at the table together as a family, even if some children sometimes were not consuming food, was also described as "mental health":

> I agree, some, like with like the routine part and the family time I think. Like my oldest right from the beginning, she's always been like a little bit picky, like I'll try to have some stuff for her that she would like to eat, but she won't eat, but she'll sit at the table with us and so like sit and talk with us. It is still like part of her daily routine and we talk with her and lots of times so I think like it is a mental health kind of thing, as well.
>
> Participant 7, mother, focus group, December 2017

These examples agree with the literature that says that family mealtimes have more benefits beyond the nutritional aspect. For example, a healthier selection of food by children, closeness, and connectedness with the family which could positively impact on the general emotional well-being of children (Fruh et al., 2011).

Parents in this study considered it essential to expose their children to the same family diet beginning in the early ages; in this way children can learn and become familiar with a variety of foods that are consumed by the household.

> I've always started at infancy with them, and it hasn't been, like um, like my kids have never eaten baby food, they've never eaten anything, it's been from day one if they are allowed to eat that food at that stage, they eat what we eat, and obviously, you know, watch them to see if they're responding gassy or anything like that but in general whatever flavour is in everything we cook with they would start with.
>
> Participant 1, mother, focus group, November 2017

This practice of children eating the same food as the rest of the family can have positive benefits, such as the acceptance of food because children will see their parents role modelling and accepting specific food (Natale et al., 2014). Moreover, if a child eats the same food as their mothers and is accompanied by them are more apt to accept foods compared with children without these practices (Powell, Farrow, Meyer, & Haycraft, 2016). These examples illustrate how the importance of eating mealtimes together as a family comes into place.

i) Children's eating habits are influenced by role modelling

We identified in this study that children's eating habits are influenced by role modelling which aligns with an extensive body of evidence (Natale et al., 2014). Something shared by parents in this study is that children "want to eat what their parents eat". A mother mentioned this as: "Right now she is going through a phase where she only wants to eat

what I'm eating so I had porridge for breakfast, so she needed to have porridge for breakfast" (Participant 6, mother, individual interview, May 2018).

Also, they mentioned that children have a preference to eat what their siblings or other kids eat. This influence could be either positive or negative depending on the variety and type of foods that the role model eats: "Now that he is three and a half he wants to do everything that his brother does. So now, he has reduced his, his, you know, his, um, like his diet down to only the things that he sees his brother's eating" (Participant 2, mother, focus group, November 2017). This influence would be an example of negative role modelling, where a child eats and likes a wider variety of foods, but it reduces this by taking a brother as an example. The following example helps to illustrate what positive role modelling by a sibling looks like:

> And I find it works reverse too. Like, my daughter went through a small stage where she didn't like bananas and but then, her bro- brother, like same thing my kids are five years apart, almost. So, baby brother was getting bananas cause' we do the same thing like hardly um [race?] him or anything. And so, when she saw him eating bananas, she was like "oh yeah, love bananas" again.
>
> Participant 1, mother, focus group, November 2017

Another example would be the peer influence which can happen when children are at daycare, and they are interacting and sharing mealtimes with other children. A mother mentioned that for her, the peer modelling was even more significant than the parental role modelling: "Or I mean, and that peer modelling piece is huge too. I can show my kid that I'm eating the carrots and he doesn't care but if he watches your kid doing it he suddenly is very interested" (Participant 14, mother, focus group, January 2018).

Mealtimes and with whom children share these mealtimes seem to be essential to get the role modelling piece. Children of this age having family mealtimes and mealtimes with other children represent an excellent opportunity to model and instill healthy eating habits in children.

ii) Eating with or without distractors

Parents mentioned the importance of not having distractors at the table which could help children to focus on the food that they are eating: "We keep phones and tablets and books off away from the table" (Participant 11, mother, focus group, January 2018). Another mother mentioned also not having any distraction but for what she said this was something very standardized at her home: "There is nothing else going on, there is no TV, no music,

no, certainly, no devices at the table. But, it's not an issue, like, I think no one expects there to be devices at the table" (Participant 2, mother, focus group, November 2017). They mentioned not having specifically electronics; others discussed not having any distractors (including electronics, books, and toys). On the other hand, some other parents said not having electronics but sometimes allowing them to have another type of distractors such as toys or books, but the only condition is that they have to eat their food:

> Well, not, this is not a frequent thing but sometimes our oldest one just like he is super insisting, especially when he gets something like a new book that he just wants to flip through it but I, again as long as he is eating it- eating food.
>
> Participant 12, father, focus group, January 2018

> They are allowed to have their toys if they eat so sometimes we'll clear the table until they eat and then they can have their toys stay at the table when we finish. Um, but that is a problem when there is another kids over because they just lose control whereas ours know the rule if they are distracted I am gonna take them away, um, so. When it is just us that's what we do.
>
> Participant 15, mother, focus group, January 2018

Among the distractors at mealtimes, the effect of TV is one of the most studied. Avery et al. (2017), conducted a systematic review (13 included studies) to "examine the associations between watching TV during meal/snack consumption and children's diet quality" (Avery, Anderson, & McCullough, 2017, p. 2). A "positive association" among TV watching and the intake of food high in fat, sugar, calories (i.e. "pizza, fried foods, sweets") was reported in each of the studies looking for diet quality (Avery et al., 2017). Studies included in this review reported that children watching TV have a lower intake of vegetables and fruits ("negative association") (Avery et al., 2017). Moreover, a "positive association" of drinking sugar-sweetened beverages while watching TV was also reported in four (out of five) studies in this review (Avery et al., 2017).

Thus, children who watch TV while eating "is associated with poorer diet quality" (Avery et al., 2017, p. 2). Children can have less healthful diet only with the TV on during meal times, even if the TV is just turned on and they are not watching (Trofholz, Tate, Miner, & Berge, 2017). It is suggested for parents to treat mealtime as a time and space of connectedness between members of the family without the TV as a distractor (Trofholz et al., 2017).

Positive role modelling at the table goes beyond the nutritional aspect of the meal. Mealtimes also help to set good examples and manners at the table such as avoiding the use of electronics: "The kids don't know electronics, we do and we try to like um not check

the phone or things like that because we are setting examples for them. Um, and we try to follow that rule as much as possible but sometimes they just come up" (Participant 12, father, focus group, January 2018). It would also be interesting to know if this type of examples as not using electronic by parents at the table also affects their children positively when they grow up as they do not link the use of electronics while eating.

Parents in this study referred to mealtimes also as a time to socialize for the family; thus, on special occasions, they create an environment of sharing around meals to watch TV, movies and so on. Although parents mentioned that this was only on special events and during their regular mealtimes, distractors were not allowed at the table:

> So then we can actually watch a movie. So, it's like Friday family movie night, every night, every Friday night so. That's our cheat night. You know like finger food or something that I can use like paper plates for and you don't have to wash dishes. So, yeah, that is always in front of the TV.
>
> Participant 8, mother, focus group, December 2017

> […] Like there is no hands-on electronics but sometimes once a week we do eat a meal together watching the TV and that's like a treat mostly on Sundays.
>
> Participant 12, father, focus group, January 2018

Although this was mentioned to be only on special occasions or once a week, given the adverse effects associated with TV watching such as the quality of children's diet, it would be worth teaching parents about other options for family activities to keep their connectedness. Also, if these "family traditions" were kept, it would be worth teaching parents how to offer healthier food that is also practical to include while watching TV at their weekly "movies night". In this way, children would not be associating watching TV with food high in fat, calories or sugar.

3.2.4.3 Barriers to eating

Parents can face different challenges in feeding their children. For instance, they mentioned that the nutrition recommendations and advice changes even in a short period of time such as between one and another child: "I had two totally different experiences with them as babies because they're five years apart and the conventional wisdom changed in those five years" (Participant 2, mother, focus group, November 2017). For some parents, it is difficult to distinguish which nutrition recommendations to trust because they are so different:

> There is other people that's saying that drinking milk it's not good, so it's really hard sometimes to see stuff like that and say "Oh, okay, well, am I feeding my kids the right stuff?" So maybe it would be good to have, you know, some of that, what trends are out there and what's the really true about it.
>
> Participant 10, father, individual interview, May 2018

Therefore, parents can be confused when they see information that is contradictory. Further exploration into this is needed to fully understand their barriers and opinions regarding health advice. Also, they will need more guidance on how to interpret the health advice and which sources to trust in case of it is something new or contradictory of what has been suggested.

Another barrier that arose in feeding children was children being "picky":

> My kids tend to like the same thing you know, if I cook anything different that will be like "yucky" (laughter), like straight. That always happens […] Now she is just totally picky and she doesn't like any spice, little bit of spice- and she does this with the tongue ((mimics her daughter)) you know, and and nothing and she doesn't- then her range is so limited, I, we tried to offering different things. And every single time she will be "no, no, no".
>
> Participant 4, mother, focus group, November 2017

There are different definitions of picky eating across the literature, however one way to define it in an understandable way is "the rejection of a large proportion of familiar (as well as novel) foods resulting in a habitual diet characterised by the consumption of a particularly low variety of foods" (Dovey, Staples, Gibson, & Halford, 2008, p. 182). Seeing this definition, children with a "low variety of foods" can start worrying parents because they will think that children do not have enough nutrients to fully develop.

The "picky eating" behaviour can be normal at preschool ages when children are still developing their eating habits (Walton, Kuczynski, Haycraft, Breen, & Haines, 2017); but it is common and understandable for parents to be concerned about them. However, the literature shows that this concern can increase in a way that "may cause stressed parent-child feeding interactions characterized by clashes between the parent's will and the child's will" (Walton et al., 2017, p. 2).

In response to this, the conversation around "picky eating" in the academic area has been changing lately with a call to "re-conceptualize picky eating" (Walton et al., 2017). The underlying reasoning to "re-conceptualize picky eating" is because it is argued that currently, the term represents a "uni-directional" approach (meaning that only what parents do affect children eating behaviours) (Walton et al., 2017). Instead of this, there is a call to

see these behaviours as a "bi-directional parent-children relationship" with a "dialectical approach" (Walton et al., 2017, p. 6). This new approach means that both, parents and children will have decisions and expectations that interact at the same time during mealtimes (dialectical approach) and also, the behaviours of both will influence one in the other (bi-directional relationship) (Walton et al., 2017).

The conclusion of a recent review of the eating behaviours literature about this is: "health professionals are encouraged to challenge the labelling of 'picky eater' and instead, focus conversations with parents around their expectations of children's eating and the interactions they have with their children during mealtimes" (Walton et al., 2017, p. 7). As health professionals, it will be important to join this conversation and to understand how this can change for the health promotion area. It will be also important to start developing new strategies to help parents in the development of healthy eating habits in their families and children without the stress that "picky eating" could be causing.

3.2.5 Parents, children and relationship with food

We identified some themes related to parents and children specifically and their relationship with food which we categorized into this overarching theme of "parents, children and relationship with food" (figure 6). The themes identified were: 1) decisions on portions sizes at the household; 2) children's natural interest to help and learn are parent's opportunity to teach; 3) parents use strategies to increase their children's acceptance of food.

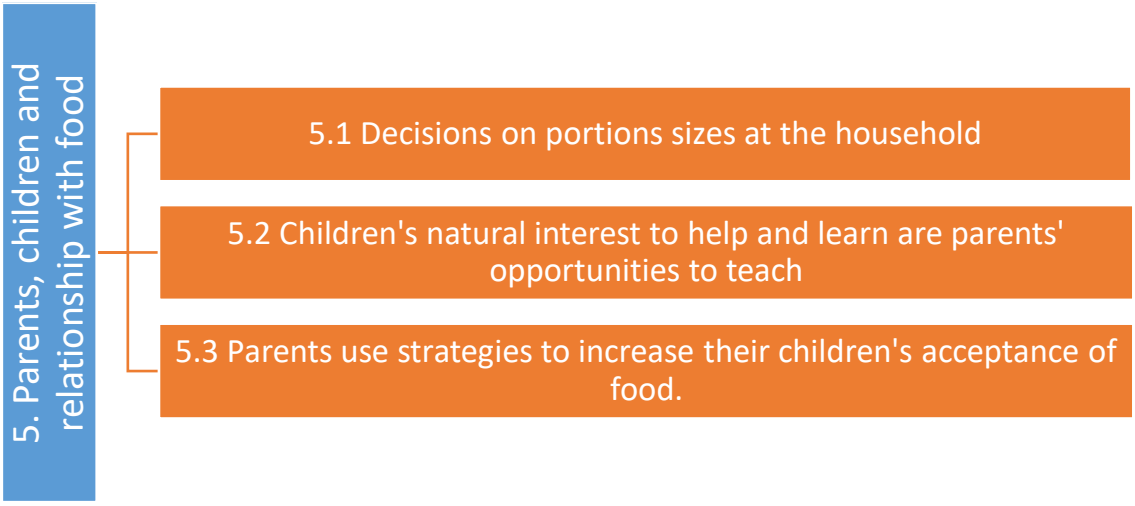

Figure 6. Overarching theme of parents, children and relationship with food with themes identified

3.2.5.1 Decisions on portion sizes at the household

Regarding decisions about the amount of food to eat at the household level, there were different answers from parents. Therefore, we categorized two subthemes based on their responses: i) parents decide how much food to serve and children how much to eat and ii) parents do not usually use Canada's Food Guide to decide portion sizes.

i) Parents decide how much food to serve and children how much to eat

Parents in our study mentioned that they are in charge of serving to their children and also they decide how much food to serve in their plates at meal times:

> I dish up for the kids and I. My husband dishes up his own, or he dishes up for the kids.
>
> Participant 1, mother, focus group, November 2017

> I serve, my, um, you know, my daughter and, and my son and, I'm, I just let them, you know, try out and eat. And I'll have something spare just in case they need more.
>
> Participant 4, mother, focus group, November 2017

> We kind of set what they need to eat.
>
> Participant 10, father, focus group, December 2017

They also use some tools to guide the children's portion sizes which helps them as a guide to know how much they should serve to them:

> Well, we have these plates but um, so it portions- doesn't portion, just helps you eyeball the size of different foods on the plate. So, so it's circular and there is little groupings so I gage that and if they want more I keep filling it, but at least it gives me a size and idea in terms of how much I should be giving them.
>
> Participant 3, mother, focus group, November 2017

Moreover, even if parents served, they considered their children's hunger to decide how much food they should serve them. A mother mentioned that she serves but she asks her children: "I just ask them 'how hungry are you? Are you little hungry, or medium hungry or a lot hungry?' (laughter) and that's kind of how I judge" (Participant 8, mother, focus group, December 2017). Even if parents decide how much food to serve to their children they allow children decide how much of that food they want to eat, being respectful of their hunger:

> I guess maybe just at the beginning try to serve something but we think at least for the older one but we think that may be enough or not too much but like he then goes as much as he thinks.
>
> Participant 12, father, focus group, January 2018

> So we do let him decide when he's finished eating, sometimes we try to get him to eat more if he's decided that when I perceive that maybe he hasn't had enough but he just eats ups and downs, sometimes he eats a ton and sometimes he doesn't eat that much and I have to just accept that he knows when he is full and if I don't want to clean up the floor I have to listen (laughter).
>
> Participant 14, mother, focus group, January 2018

> I think not forcing kids to eat like you were saying it's a really big one […] I don't want my kids to like feel like they have to eat. And they're not gonna starve themselves if they are hungry they are gonna eat and if they are hungry l-a-t-e-r they are gonna eat the dinner that they didn't eat.
>
> Participant 8, mother, focus group, December 2017

Some other parents give more responsibility to children by allowing them to serve themselves directly: "Sometimes they serve themselves if it's, if it's easy enough for them to get it" (Participant 2, mother, focus group, November 2017).

ii) Parents do not usually use Canada's Food Guide to decide portion sizes

Some of the parent's opinion is that Eating Well with Canada's Food Guide (EWCFG) only gives very basic information about portions and recommendations. Thus, even if someone used it in the past to help guide them in their eating decisions, when they evolved from there, they wanted to know more specific nutrition information which they could not find on EWCFG. When a mother mentioned that she used EWCFG, she explained why she stop using it: "Yes, um, especially with the first child that they give you the Food Guide, I used it, I went on it a lot, but sometimes I found it a little bit simplistic, I found like I wanted to get more out of it, when I got up to a certain stage, I wanted more" (Participant 15, mother, individual interview, May 2018).

In contrast, some other parents had a strong opinion in not using EWCFG maybe because they feel that they do not need it since their perception is that they already eat healthy.

> I don't follow the guide in terms of- actually I don't really follow it at all in terms of servings it's more kind of guessing, this seems healthy. You know, they eat very healthy.
>
> Participant 7, mother, focus group, December 2017

Parents also mentioned not following the recommended food servings of EWCFG. One reason for this is that they find it difficult to keep track of the recommended food servings, either because they find difficult to measure the food in cups at home or because they are not certain about the amount of food their children ate during the day at the childcare centre. When children arrive home, their parents do not really know how much is left in terms of food servings to meet the food servings recommended for them:

> I mean it's good information but it's not necessarily practical or realistic on a day to day basis. Um, especially like when they are here (childcare) a lot of the time. You can see what they are eating but I don't necessarily know what he specifically is getting out of that so he'll come home and I don't have any idea of how many vegetables or fruits or grains he's had in a day.
>
> Participant 14, mother, focus group, January 2018

Something worth noting is that some parents mentioned being discouraged by other people in the use of Canada's Food Guide:

> And then a lot of people keep tell me [avoid using?] the food guide or like "Oh, the Food Guide it's not great" okay but "why the food guide is not great?". And they don't really- they are like "Oh, it's outdated, it's not based on, on more recent findings and the most recent evidence".
>
> Participant 15, mother, individual interview, May 2018

Currently, as this thesis is being written, Health Canada and the Government of Canada is updating EWCFG as part of the "Healthy Eating Strategy" (Health Canada, 2018a). Health Canada conducted a review and stakeholder consultation of the Food Guide (2007) from 2013 to 2015 (Health Canada, 2018b), and found that people experienced "challenges in understanding and applying certain aspects of guidance", also they found that the "format isn't meeting the needs of all audiences" (Health Canada, 2018b, para. 2). As mentioned in this study, some people wanted more detailed information in the guide, however, others would like fewer details. The new version of EWCFG is expected to be released in 2019 (Health Canada, 2018b). There will be a need to explore the understanding, knowledge and acceptance of this new guide to help parents and the general society to follow it to keep healthy eating habits.

3.2.5.2 Children's natural interest to help and learn are parent's opportunity to teach

Parents in this study mentioned that some of their children are naturally interested in learning about food: "I think they naturally do, always want to help" (Participant 9, mother,

focus group, December 2017). This interest could vary in the type of interest, for instance, some children might be interested in being involved in the selection of food. Other children are interested in the kitchen mostly in the preparation of food. Some others are interested in learning about where food comes from by asking questions or even by helping in the garden:

> I know right now my daughter when I'm in the kitchen she always wants to be like sitting in the counter and she is always asking what I'm doing and what's that.
>
> Participant 6, mother, individual interview, May 2018

> My kids kind of care less about the kitchen but they're um, I can hold their attention on the garden a little bit longer. So, so our house tends to be very seasonal […] so I find they are far more interested where food comes from in summer and they kind of care less on winter.
>
> Participant 15, mother, focus group, January 2018

For this reason, some parents see these interests as an opportunity to teach kids and to help them to develop their food skills and knowledge. Some parents include children in simple activities related to food such as taking their children with them to the grocery store and they can help them to select the food:

> He likes fruits anyway so when we go to the supermarket he picks um fruits, he is not very interested into in vegetables um but at least he does in fruits.
>
> Participant 13, mother, focus group, January 2018

> If she asks like if we are running out of strawberries or something she asks "So am I set and put it on the grocery lists?" She'll go and scribble something on a piece of paper as a grocery list (laughter). Um, and so she will come with me and then she will be at the grocery store "Strawberries. On the list", "okay, yeah we got this".
>
> Participant 11, mother, focus group, January 2018

Some other kids are included in the kitchen in the food preparation and some of them help in a variety of tasks related to food:

> We try to include them in many like stages I guess getting start from the vegetable garden pulling them out the ground. Doing grocery stores because I am excessively reader and my daughter- my six-year-old daughter would say "what does it say, mom? Too much sugar?" (laughing) you know, because she will pick the cereal I would be like "let me read it". Also, and then, yeah, they <u>love</u> baking of course because they like to lick what we are working on but it's a little challenging because they are four and six so, they are kind of competitive, so I need to split the recipe in two and they each need to have equal, you know, duties and stuff.
>
> Participant 9, mother, focus group, December 2017

However, this sometimes can be difficult if parents are running out of time to cook the food that they will eat. Sometimes instead of doing it spontaneously, this is a planned activity for children to help:

> if I want her to help me or if I want her to be involved, I usually try to do something like more structure or planned. So, we would bake, you know, on a Saturday or like and then doing the measuring and show her but I like, I kind of like more the control kind of thing. So I would already have all the ingredients out (laughter). So I don't have to worry about turning my back, you know and what's going on.
>
> Participant 7, mother, focus group, December 2017

Another aspect related to this is that parents need to find age-appropriate tasks that children can perform safely in the kitchen and teach them about how to manage properly kitchen tools to not put themselves in danger:

> I teach my kids to use chop knifes even at three and five to show them the proper way to do it, so they are not gonna hurt themselves […] they are learning at a very early age, I learned at a very early age, and I love to cook, so I want them too […] you know but really anything like even starting teaching them you know, how hot things are, like "put your hand near the steam, feel how hot it is, it's dangerous". Kind of teaching them safety at the same time, you know, "don't put the chair at the back [squeezing out?] put it in".
>
> Participant 8, mother, focus group, December 2017

Kids helping as mentioned by some parents is not necessary "helping" but more like an activity that will have positive benefits in them. This can be also seen as a bonding time for the family and it can help to create positive memories in children relating food to their parents as well:

> But I need to put myself on a mindset that is not necessary gonna be helpful (laughter) this is just a family activity; this is an activity rather than helping, right? So, I think because sometimes I can get frustrated when I am really trying to get things done and it's not.
>
> Participant 9, mother, focus group, December 2017

It is suggested that parents of school age children need guidance on how to incorporate their children in an effective way in the food preparation (Fulkerson et al., 2011). Therefore, parents of preschool ages will need maybe even more guidance. Certainly, parents of this study try to take advantage of children's curiosity to link it with food and in this way to develop their food skills and a positive relationship with food which could carry to their coming years.

3.2.5.3 Parents use strategies to increase their children's acceptance of food

Parents use some strategies to overcome some of the barriers previously mentioned in the overarching theme of eating (p. 106). For instance, some of them consider that if they exposed children to home-cooked meals they will be more eager to accept a variety of foods:

> And I find that if you start cooking a lot of home instead of buying ready to go stuff. Then, I- I think the kids will, um, will learn to eat a lot more stuff. If you throw a little bit of onions there, and then maybe a mushroom the next time a little bit (laughter). You know, so, I think, I know a lot of people that think that it's, um, amazing that they just pretty much eat everything and they are six and four.
>
> Participant 10, father, focus group, December 2017

Another strategy used by parents is to involve children in the food preparation. This has as a benefit to the acceptance of food:

> Even before, when I make lasagna I make a very healthy kind of lasagna, lots of veggies and I put like a whole bag of like those big Costco© bag of spinach on it. And sometimes my kids are like "ew", but then, the other day I had [name of daughter removed] here and I was like "You know what, why don't you help me? Because you will see, you like peppers, you like onions, you like spinach, so you will like this lasagna, but why don't you just help me put it together?" and she did, and she is like "Oh, this is the best lasagna ever".
>
> Participant 9, mother, individual interview, May 2018

Chu et al. (2013) did a cross-sectional survey with a large sample of grade 5 children (n= 3398). They assessed the association between children helping to cook at home and their preferences for vegetables, fruits and healthy foods in general and found that children who helped more frequently had a higher preference for fruits, vegetables and healthy foods (Chu et al., 2013).

Another strategy used by parents was to serve vegetables that are sometimes problematic for them to eat along with other food that they know that they are more likely to eat:

> And I know that are vegetables that my kid will not eat she pulls out of it. So if we are trying something at least we make sure that at least one of those vegetables is being served maybe along with some other ones cause I am sure that she will eat that out of whatever so I kind of just making sure that if there is something new at least is something that she'll eat out of the plate um but yeah then is also just kind of convenience or whatever is going on that night or on the mornings, yeah.
>
> Participant 11, mother, focus group, January 2018

Something interesting is that parents consider that what a kid learns to cook in these early ages can be or help as a baseline to grow from there and to develop more food skills in the future.

3.3 Summary

This exploration helped to accomplish the first two objectives which partially answers the first research question of this study. We could learn about the knowledge, behaviours, needs, barriers to and facilitators of food literacy of parents of young children. Parents of this study seemed to be knowledgeable in some of the areas of food literacy. For instance, even though not all of them were formal planners, all of them in one way or another made sure that they had food available at home. Their selection of food was made consciously toward keeping their family and children's health. They were aware of limiting sugar and sodium in the diet, and they mentioned reviewing the nutrition labels, through either the list of ingredients or the nutrition facts table. Something also important to highlight is that some parents on this study see their food decisions as having consequences beyond themselves, such as sustainability consequences (environment) and ethical consequences (animal cruelty).

Regarding preparing food, they preferred practical and healthy recipes, which would mean trying to do their best in the least amount of time possible. Parents consider that diet is essential in their children's health which aligns with their interest to choose healthy food and to prepare healthy meals. Parents had different strategies to help their children develop a better relationship with food, some of them are by including their children in the various steps of the food literacy components such as planning meals, selecting food and preparing meals.

Some of the barriers that we found are the confusing terms on the food labels for parents, and also, the lack of time which impacts in the different areas of food literacy. However, some facilitators that might be useful for them is the use of technology to overcome these barriers and organization to accomplish their goals related to food. Parents would benefit from information regarding how to efficiently evaluate and select food products at the grocery store even with time constraints.

3.4 Parents interest in food literacy

We identified different interests from parents within the five overarching themes previously described. These interests were related to food planning and management skills, food selection, preparation of food, eating and parents and children's relationship with food (table 2).

Parents mentioned being interested in knowing how to make meal planning for practical, balanced and healthy meals. For doing this, they could either improve these skills by improving their knowledge on how to create menus or by having available some software as apps that can make or create this for them.

Related to improving their food selections, parents wanted to learn how to make faster food selections at the grocery store. How to easily identify the best food options at the grocery store by giving a quick look at the food label. They also mentioned having an interest in knowing what goes on behind the scenes in the food production industry. They would like to learn if the food that they selected was better for their health, the environment, and animal welfare.

Closely related to their interest in planning, parents from this study wanted to learn how to prepare easy, healthy and practical meals. They have limited time to do so, therefore, they would like to spend not as much time in the kitchen but still have the healthiest option possible.

In terms of eating, they wanted to learn more about personalized nutritional needs. How this would differ for them (as adults) to the nutritional needs of their children. This will also be reflected in the differences in the recommended serving sizes that children and adults should have. Learning this will help them also in the areas of planning, selecting and preparing food because this will influence the type and quantity of food to be bought for the household.

Another facet in relation to eating that they wanted to learn was how to make appropriate food substitutions. For instance, if some parents have children with allergies they want to know how to include other type of foods to suffice their nutritional needs. Parents will need more guidance on this specific aspect because they will have to learn which foods are a good source of which nutrients and based on this make the appropriate substitutions.

Another interest identified in this study is that parents wanted to improve their children's relationship with food. They wanted to learn how to incorporate children in the different stages of food literacy. For example, they wanted to learn how to include their children in the food preparation in age-appropriate ways, how to include them in the grocery store and in other activities that could enhance their relationship with food. These types of activities could help children to accept more food and to improve the connectedness with their parents by doing shared activities.

Table 2. Parent's interests related to food literacy

Area of interest	Selected quotes
1. Improve planning and management skills a) Knowledge and/or software	"For me would be useful more about choosing foods, creating menus, creating menus it's so hard, like just sometimes you don't plan, but how to assemble a good balanced meal" (Participant 13, mother, individual interview, May 2018). "Something even like an app or something, or you can kind of enter the foods that you guys like and then help you create like a meal plan. You know, there is one night of meal plan where you can have your kids helping you and then you know, a night where you can pre plan three different things, kind of just helping with the scheduling I guess" (Participant 8, mother, focus group, December 2017). "I think the meal planning it's great, yeah, it's something that I've been struggling and that would be very helpful if, to have like a grocery list, or, that, that is a bang for your buck as well as your time in terms of preparing. So, if it says like buy baby carrots bowl, buy this, and this and you can do these four meals or these five meals for the next week […] if that is something that on Fridays get a sheet saying do these groceries on the weekend and that's your meal in

	pocket" (Participant 9, mother, focus group, December 2017).
2. Increase knowledge and efficacy in food selections a) Learn more details about the food available (labels, process, cost-benefits)	"I think I might would like to learn more about how to um how to kind of more efficiently read the nutrition facts table because it sort of tricks you up sometimes and, you know, the serving size look it's so different for everything and it doesn't necessarily represents a whole serving and, um, I think I just need something that's a little bit more, um, I guess representative of what we might eat, 'cause I don't have the time to kind of go through do all the math" (Participant 14, mother, individual interview, April 2018). "So, those are things come um how to say? they are more expensive and like if I am making those purchases um I would like to know for certain that that does a difference for those animals, environment and we are actually eating healthier" (Participant 12, father, focus group, January 2018).
3. Improve preparation skills: healthy, fast and practical	"How to prepare an easy but healthy appealing meal for kids […] you know, most of the time those people who put their kids in daycare, they are parents who are not staying-home moms or dads so we just don't have time like by the time we get home from work, pick up the kids and we have to prepare the meal and then it's time for bathroom you know, bedtime, etcetera, so we don't have a lot of time to invest on, you know, trying to find the best healthiest recipe for example, I find it, anyway" (Participant 4, mother, individual interview, April 2018). "Something quick but also healthy, right? It's very important, and it just seems like it is almost impossible to have the two, nowadays" (Participant 5, mother, focus group, December 2017).

4. Improve knowledge related to eating a) Nutritional needs, portion sizes and food substitutions	"Um, information I guess that's tailored specifically to sort of each of us, like I know my nutrition needs are obviously going to be different than my daughter's nutrition needs […] I guess knowing I guess what types of vitamins I should be looking for in the foods that I eat given sort of the age that I am and my gender, and maybe there is something that I am lacking in um my diet that might be interesting" (Participant 6, mother, individual interview, May 2018). "Even in the same recipe let's say that the system (software) would be providing um recipes, like tell you like a portion for an adult is two se- um like two servings and a serving it's a cup, a kid should only eat one cup" (Participant 12, father, individual interview, May 2018). "I am also interested on the side of balancing things like protein, like I don't like I- I know that sometimes is like fad the protein is like over used sometimes in the in health advice but I am also interested in balancing it because we use vegetarian meals. And understanding how can I make the more um healthy um meal without meat um that's something that I really want to find about but I don't know where to or the practical side" (Participant 13, mother, focus group, January 2018).
5. Improve children's relationship with food a) Learn how to incorporate children in the different stages of food literacy	"Just different ways that I can incorporate my child um when I'm cooking um different ways that you could, you know, save in grocery shop or meal plan with your child um, those types of things. So they really feel like I guess like that they are part of, a part of meal planning and a part of you know, the supper

	you make and stuff every night" (Participant 1, mother, individual interview, April 2018). "I think for me it would be nice to learn um ways, tips and ways to, to get your kid motivated about cooking and get him interested in food" (Participant 3, individual interview, May 2018). "I think that would be quite helpful so, so finding the age-appropriate tasks that are not just baking" (Participant 15, mother, individual interview, May 2018).

3.5 Summary

The exploration of which aspects of food literacy parents are more interested in learning more about met the third objective of this study. This helped to completely answer the first question of this study along with the previous section. Parents have an interest in technology that could help them improve in one or more of these areas. Furthermore, they already do different things in trying to choose the best option of food at the grocery stores such as reading labels. However, they would like to do this more efficiently to lose less time in doing so.

An important aspect for them is to learn if their food decisions are making a difference in their health, the health of animals and the health of the environment. These types of concern might reflect parent's high level of education and consciousness for the environment. They also want to prepare and offer healthy food to their children and they are interested in learning practical ways in accomplishing this goal. They are very interested in learning how to include their children in the different stages of food literacy, from the garden to the table. Initiatives toward parents and young children might benefit by improving their eating behaviours. Also, if participating together, parents and children could have bonding times and help increasing children's exposure to positive experiences with food since early ages which might enhance their healthy relationship with food.

Chapter 4. Results and discussion: The general attributes and essential components of a food literacy program targeted to parents of children attending childcare

The second research question of this study was: What are general attributes and the essential components of a food literacy program targeted for parents of children attending childcare?

a) To identify the general attributes of a food literacy program that will promote the parent's participation.
b) To identify the essential components of a food literacy program aimed at parents of children attending childcare.

The last section revealed the learning interests of parents of this study. Taking the parents' interests and barriers they face into consideration, we prioritized them to determine what would be the general and essential components of a food literacy program for parents.

It is worth noting that a food literacy program cannot include all the learning interests, wants and needs of parents all in one program. From a health promotion approach and practical side, it is important to prioritize the desired attributes of a food literacy program. That being said, it is likely that some of the interests and/or wants were not included into this prototype program, yet there were topics that are still worth exploring but this goes beyond the scope of this thesis.

The information presented for this research question comes from the focus groups, and most of it from the individual interviews with parents of this study. All the data were analyzed together as a whole but most of the conversations about details for the specific components of the food literacy program came from the interviews as a further exploration based on the answers from the focus groups.

4.1 Summary of needs assessment and findings

A summary of the needs assessment that follows helped us to determine the essential components of a nutrition program:

Strengths:
Parents in this study were highly educated which could be seen in their reasons for choosing certain foods. They were aware of what foods to include or to avoid for good health. Parents went beyond themselves and some of them took into account the effect of their food choices

on the environment and animal welfare. Although, we cannot say the level of food literacy of parents of this study, as it was not empirically measured, we can say that from what they shared, they were aware of the possible impacts of their food decisions on their health and the environment, which may be in part a reflection of the high educational status for this group of parents, with the majority of them having a Bachelor's degree or a graduate degree.

4.1.1 Prioritizing needs of parents

From what parents shared, and what we considered as main priorities which accounted for the barriers faced by parents and some of concerns, the following factors were suggested:

- **Improve children's relationship with food.** Strategies to help their children develop a healthier relationship with food. This includes how and when teaching them specific cooking skills. How to incorporate them in the kitchen in easy ways that are not time-consuming (lack of time is an important barrier for parents on this study).
- **Healthy meal planning/preparation**. Meal planning includes preparation strategies for healthy, easy and practical meals. Practical enough that they can do them in a fast way but still be healthy to take care of their families' health and easy enough that their kids can help in the preparation.
- **Online component.** Online component for parents of this study was important. This online format could be presented as either, e-mails, social media platform or any other way of communication to help them with their needs. Parents of young children mentioned "living in a digital world". The use of technology for them can help them to save time either with ideas for meal preparations, time management with some meal planning time saver apps, and also with tips on how to help their children or general nutrition knowledge.

4.1.2 General attributes of a food literacy program

During data collection parents shared some general ideas of what they wanted from a food literacy program. Five main themes were identified: 1) fun activity for the family, 2) living in a digital world, 3) experts in charge, 4) practical ideas on a variety of topics, and 5) sense of community.

1. A fun activity for the family

Parents mentioned that they wanted a program where all of the family could go together, and they made it clear that the program had to be fun; otherwise their participation might

be jeopardized. One mother mentioned that she wanted a fun program for the family: "I guess for us oriented as almost an activity to do on the weekend, kind of fun for us" (Participant 4, mother, focus group, November 2017). Another mother based her idea on one existing program where children and parents cook together, so she thought of something similar but with healthy food:

> One thing that came to my mind that sounds too [far?] [of edge?] is that cooking thing tour kids for example. And then, you can go as mom, or daddy and child activity, umm, for a Saturday afternoon and they learn stuff and you learn together that maybe kind of a fun activity.
>
> Participant 9, mother, focus group, December 2017

As a qualitative researcher, it is important to acknowledge my own biases in the research of this study. Because this study is part of a larger, multicomponent intervention aiming to intervene with children as well, when this research was planned, the idea was to conduct a needs assessment to be able to identify the essential components of a food literacy program targeted to parents (alone) and a separate component for children was being independently planned. However, as the data collection started and evolved, we identified that parents wanted a program that included their children. This could be for different reasons such as having bonding times as a family or not having someone who would take care of their children while they attended the program. For instance, a mother who is in complete charge of taking care of her kids highlighted this and helped us to understand the importance of including children in programs targeted to parents:

> If I'd had to pay for a babysitter for something I probably wouldn't do it to be frank […] I don't have a babysitter in my normal life, like, like it would be my mom who would watch my kids and she lives two hours away […] I don't wanna pay somebody for childcare to go and do something, but If it would involve my, my kids as well, then I would m-o-r-e than definitely be able to commit like an hour a month at least to that because I wouldn't have to worry about whoever is with them.
>
> Participant 8, mother, focus group, December 2017

The way the program is designed, who is invited and what is offered are essential factors health planners need to consider when developing programs. If only parents were to be included as in the original plan, childcare would have to be offered but even with that, parents might be hesitant to participate as they might not trust a stranger to take care of their kids. During the focus groups this idea of having a fun activity parent-child arose and because parents had a strong interest in learning how to include their children in the kitchen, we explored the option of having a cooking program for parents and young

children. In this case, the results from the focus groups guided us to explore this component and how this food literacy program that combines parents and children would look like.

2. Living in a digital world

Parents expressed a strong interest in having something online such as receiving e-mails, using smartphone apps that could help them with their barriers to plan meals and keep of track of those plans (e.g., meal ideas, organization).

Parents mentioned their busy schedules as a barrier to planning meals and to cooking. Therefore, committing to extra activities to an already busy life, represented a barrier for them. One plausible solution would be to participate in something online that they can do on their own time: "Websites are handy because you can do it anytime and, you know, sometimes you do get a variety of useful tips" (Participant 4, mother, focus group, November 2017).

Furthermore, during the exploration of the domains of food literacy, parents mentioned that they were used to getting nutrition information from the internet. For them, watching videos with recipes is part of how they get the information and get inspired. Another mother mentioned another option that might work as well:

> A course would be great, e-mails are great, a webinar, like, you know, something that you can access at any time because everyone's schedule is different, right? So it would be great to be able to access something whenever is convenient for me.
>
> Participant 5, mother, focus group, December 2017

This new example is oriented more to gaining nutrition knowledge. As this mother mentioned, a course, or webinar would be more to learn something new about nutrition but this would still need to be something that she can access on her own time. The benefits of doing online programs are that people, in general, are familiar with those technologies and they can do it in their spare time which might facilitate their participation.

3. Experts in charge (with or without credentials)

In order to know whom parents prefer to deliver a food literacy program, we asked them if the credentials of the person mattered to them. Some parents answered that for them, it was important to know that the person delivering the program had the appropriate background:

> I think with anything, I guess, it's sort of you want someone to be expert and knowledgeable in their field. Like when you go to your doctor you want (laughter) his background in medicine (laughter). So they can obviously help you. So, I think when it comes to like nutrition and meal planning whoever is sort of providing advice has the appropriate background.
>
> Participant 6, mother, focus group, December 2017

Something interesting is that for some parents, the notion of experts does not necessarily mean that someone has undergone several years of study or has a diploma. For instance, people who have the expertise by practice can be seen as experts as well which also depends on the specific area. For instance, if it is specifically about nutrition, it would be a dietitian/nutritionist. However, if the topic is about farming or some other food topic related they are also interested in listening to the experts on that area who are farmers:

> I think it depends on what it is. 'Cause sometimes you can get something from your like local meat producer or your local farmer […] or whatever is so they are like an expert in whatever the topic it is or have someone like from the farm to talk about you know, how the eggs and the chickens come from so whoever is the expert for in that area so it could be like the dietitians or nutritionists to talk about that or depending on the I guess what it is to speaking to.
>
> Participant 11, mother, focus group, January 2018

For program planners, this would be something that they need to take into account when designing a program. The person who will deliver the content or implement the program needs to be someone that the participants will trust. As these examples for some parents, the most important would be that person has the appropriate background for the topic in place, thus attention to this should be taken to keep participants trust in the program.

4. Practical ideas on a variety in the information

Some parents mentioned wanting a variety of topics. A mother mentioned that parents have different lifestyles, therefore, they will have different interests:

> Well, having variety, right? 'cause everyone has its routine. Something might work for me but maybe not for somebody else, so having some sort of variety, like, you know, like you guys say that your kids like to help in the kitchen but mine isn't there yet or maybe she never won't be, so (laughter). Um, or you know, some nights where you have time to prep and then maybe there is nights where you don't, so, just having a variety.
>
> Participant 5, mother, focus group, December 2017

The context of this was when talking about which information online they would like to receive. If a website about nutrition is created there is room to post different topics that might be for the interest of parents and not focus only on just one nutrition topic.

Parents also mentioned wanting practical ideas that they can include in their day to day:

> I think having, um, more like an outline. Um, even just, I don't know, a few of you have looked at the internet, you know, something that parents can get like a situation at the daycare, about you could do, or e-mails, even you know like activities or suggestions, you get into your routine, you know, those kind of things you don't think on those you just get into your routine and you do the same thing over and over and you make the same thing over and over.
>
> Participant 8, mother, focus group, December 2017

If parents are about to receive nutrition information in the form of outline (list of ideas), e-mail, website or any other way. It would be important to know what their interests are. Even if they are varied still have an idea to narrow down the information and be able to tailor this to their own needs.

> Um, just like quick easy tips like "Okay, so if that is achievable, how, show me how, what are the tools that I need" um, like is it online or is it to the grocery shop, like it's really like the how to, and it's like easy to digest in a simple how, you know, "how do you this, how do you do that"
>
> Participant 3, mother, individual interview, May 2018

> It has to be paired, if there is, if there is, if you are being informed about research it has to be paired with something practical for it to be actually useful for for families, I think.
>
> Participant 13, mother, focus group, January 2018

5. Sense of community

Something interesting is that parents liked the dynamic of the focus groups where they could hear from other parents what they do in terms of planning, selecting food, cooking and so on. For them, it was like sharing tips or giving tips that worked for their families or paying attention to others ideas that might help them for their families as well.
Some parents mentioned that from a program they would like to have that sense of community, sharing ideas and tips with other parents:

> I like that idea of almost the community support group where other parents come together, share ideas, recipes, what works what doesn't. And, I think that would be a motivating factor for me to participate.
>
> Participant 3, mother, focus group, November 2017

> Or even sharing, let's say like if you have a weekly plan and you have it public then I can choose your plan or if I am looking for something different, you know because different households have different things and maybe we can try what your household is cooking for the week kind of thing; so, just sharing those weekly.
>
> Participant 8, mother, focus group, December 2017

Parents liked the idea of sharing information with other parents and that is a good way to make a community. One important factor about this is that the main barrier for parents would be that they do not have enough time to meet and to talk to share ideas with other parents as in person with the focus groups.

> Maybe if there is one once in a while. Like even, I mean, this did take effort (to attend the focus group) to get out and we could come because there was childcare, but it's kind of fun to hear what other people is doing in the same area in terms of shopping and grocery […] It's kind of helpful to share some information, um as long it is at a practical time in our routine time.
>
> Participant 9, mother, focus group, December 2017

One possible solution to creating community and avoiding the time commitment is to create an online community. Parents could take advantage of their interest in technology and they would be able to do things at their own time. This was explored during the individual interviews with parents to see how feasible and acceptable an online community support group, and which characteristics would be the preferred ones (specific details on page 137).

4.2 Essential components of a food literacy program targeted to parents and children

The purpose of this thesis was not to develop a full program with all the details, theory, and so on. Instead, the intention was to explore the parents' perspective of what they would want from a parent-child program that meet their needs. This information could set the basis for future planning programs considering the desires of parents that incorporates evidence-based practices needed to plan a program in the best way possible. Table 3 shows the summary of the essential components of a cooking program for parents and children.

The term "cooking" can have a different meaning for different people (Wolfson, et al., 2016). For instance the way it is understood can depend on the specific contexts of generations, cultures and history (Engler-Stringer, 2010). For some people cooking strictly means that something is heated but for others this is not the case (Wolfson, et al., 2016). Some other aspects taken into account are the amount of energy, time and caring invested in cooking (Wolfson, et al., 2016). It could also be seen as "any food preparation" (Wolfson, et al., 2016). For these reasons, the term "cooking" was used in this study with the understanding that cooking is the process to prepare meals even at the basic or low level skills that would be required in this program because of the involvement of young children. Furthermore, the word "cooking" was a common language among parents in the focus groups, thus, it was decided to keep this language.

Table 3. What parents want from a cooking program

Essential components (Themes)	What parents want (essential components)
Content	- Cooking program with healthy and easy recipes that a child can be involved
Dynamics	- Parents and children cooking together - Children and parents having different roles during the session
Characteristics	- Cooking and then eating the food cooked - Fun program
Outcomes	- Setting early basic cooking skills and healthy eating behaviours in children - Children learning to be "independent" in the kitchen

Delivery	**Day:** - Weekends work better for extra activities (such a cooking program) **Length:** - Depends on children's schedules and their attention span (young children: "short attention span") **Frequency:** - Varied (mostly monthly or biweekly). **Location:** - Convenient distance

4.2.1 Essential components

4.2.1.1 Content

Parents in this study mentioned that they would like to see easy recipes that their children can easily do. If a cooking program for children and parents is created it should be targeted, according to parents to age-appropriate activities that a child can do. Children would be the ones who take the lead and the majority of the hands-on in the cooking program. Parents could be there to offer support and also to learn more things about nutrition and tips on how to include their children in the kitchen.

> I think it would be great to get some simpler recipe ideas, that would be really easy to incorporate a kid into, I think, I mean, I would love for my son to do this kind of stuff with me but when I look at these recipes and there is so much chopping and mixing and then you add this and cook it and then add something else and do this and that so I think for myself, you know, there is so little that he can do, but he is quite young but even as he gets older I sort of worry that I'll start to thinking "oh, this is taking so long now, he is just getting in the way, I will do it myself" so I think like healthy recipes that are, that are simpler and there's not as much preparation so that he can be involved from the beginning to the end and um but you know they are still healthy and yummy. That would be great, um, yeah.
>
> Participant 14, mother, individual interview, April 2018

> I think it would be something where you are going to make a very basic dish (laughing), they are little tiny people. Um, but I think, it would be nice to do something basic and fast that obviously the kids can help with.
>
> Participant 6, mother, individual interview, May 2018

> I would say I'd probably have some kind of recipe outline, um, and I imagine most, most parents have the basic cooking skills but the children may not so I imagine it's also um cater towards the children's level as well and then parent and child can

> interact and we are kind of together. Um, I would be hopeful it's recipes that are kind of made from scratch or natural foods mostly, right? Um, hopefully budget-friendly, as well, um and they don't have to be complex, I think it's fun for, for the kids to learn um the basics too.
>
> Participant 9, mother, individual interview, May 2018

4.2.1.2 Dynamics

Regarding the dynamics, as mentioned elsewhere, first, we thought about a program that solely targeted parents. However, the focus group responses guided us to explore the option of having a program for parents and children cooking together including activities with their children. Being involved together in the kitchen would be an excellent opportunity to do so:

> I think well I would be interested in a program like this and I think where um kids and parents can come and like select the types of meal that they want to prepare and then um you know, have all the ingredients there and then the child, like maybe have a fridge and have all the ingredients and get the child to pick out each ingredient, bring it back and then the parent to help assemble the meal so it's very interactive but yeah, the kids feel very supported and yeah independent at the same time.
>
> Participant 3, mother, individual interview, May 2018

Parents and children cooking together

Parents wanted to be with their children cooking along with them. They mentioned that this would have some benefits. One of the benefits was the bonding time that they shared and created as a family. Another benefit mentioned is that children can see some positive behaviours toward healthy eating from other people (role modelling) which can help them to also eat fruits and vegetables. Furthermore, they mentioned that if they cook together, children can associate their parents to these positive activities and have good experiences with food and with their parents at the same time.

> Um, yeah, I think so because I think, I think it will change a little bit because I think that they can relate better to cooking at home and stuff so if you are doing it, doing it with them they can, they can, they will ( ) like what we do at home and you know and relate to, to cooking and preparing meals at home. So, that's, that's better I feel than separated from.
>
> Participant 1, mother, individual interview, April 2018

> As well, as my, a huge thing I think is the parent interaction, 'cause we often get, you get busy and it's a nice way to learn to involve your child with the cooking process and the meal prep. I think that automatically gives them the interest in knowing about it and learning about it.
>
> Participant 9, mother, individual interview, May 2018

For some other parents, having direct supervision could allow children to attempt to more complex recipes because they would receive direct help from their own parents.

> Yeah, because it would be more like direct supervising and maybe you can have more complex foods. And maybe the parent could cut or maybe help the kid, instead of having like one volunteer handling like six kids, like a one on one.
>
> Participant 12, father, individual interview, May 2018

> I would want it to be like more, um, more about teaching the kids, um, just for me, my own personal- the way our dynamic is. I would want it to be more about like get the kids excited with me there, so they can associate it with me.
>
> Participant 2, mother, individual interview, April 2018

Children and parents having different roles during the session

If parents and children participate together in a cooking program, according to parents, they would need different roles, and some other option where children would not participate. They mentioned that parents would prefer to receive information and to learn, whereas children would be more interested in cooking representing the practical side of the cooking program:

> Um, so I think it almost involves some of the pre-readings for the parents or something or pre-preparations for the parents or like a little playroom where, where the kids can play while the parents prep stuff and then [get? let?] the kids in for a half an hour and then maybe they can go back to play or something. So, I feel that you have to give the information to the parents so that they really know what you are trying to achieve versus everything is prep, you walk in you do it for a half an hour you are done. Whereas the kid's attention really only last at a three to five age half an hour, forty-five minutes.
>
> Participant 15, mother, individual interview, May 2018

> I think parents are probably interested in learning about you know nutrition in different ways that you can get different things and making more healthy choices. Parents are more interested in like the learning side of things and kids are more interested in like the physical doing side of things, so.
>
> Participant 8, mother, individual interview, April 2018

4.2.1.3 Characteristics

Cooking and then eating the food cooked

Parents mentioned that a key characteristic of a cooking program like this (parent-child) would be cooking there and eating the food they helped to cook. They said this as being

convenient for them because they would not have to worry about preparing food before or after the session:

> And then, you know, the meal, we sort of cook what will become our dinner that would be a great thing and then it wouldn't be sort of cooking dinner and then going out again to cook or vice versa, cooking and then coming home again to cook um that would be really convenient.
>
> Participant 14, mother, individual interview, April 2018

Parents of this study perceived an organized cooking program as an opportunity to share a meal as well, one that they have prepared themselves. In this way, children would feel more eager to eat the food that they cooked, and they might be proud of their own capabilities as well.

> Once the meal it's prepared all the other kids and moms can, or parents can come and anyone can test their foods so if there is like to say six kids and six parents and we, we each make our own individual dish and then at the end we talk about what we've created and we can like sample everyone's dish too. So the kids can see and taste what other kids made. That would be really cool.
>
> Participant 3, mother, individual interview, May 2018

Fun program

Something important for parents is that this cooking program could be fun for children. In this way, children could enjoy cooking and start relating the act of cooking as an enjoyable activity to do. This might increase their interest in being involved in food preparation at home which can potentially improve the development of their cooking skills.

> Yes, so it would be better if it would, it could be something that he would find interesting to do and we can do it together easily and, um, but like the base thing if he could have fun doing it.
>
> Participant 12, father, individual interview, May 2018

4.2.1.4 Outcomes

Setting early healthy eating habits and basic cooking skills

We identified some specific aspects of the program that parents wanted their children to learn. For instance, they wanted their children to improve their eating behaviours and to learn basic cooking skills. Children can start to get familiar with a wider range of food which increases the chances of accepting those foods.

> Um, mainly that the kids would see that other people is also reinforcing healthy eating and then they can kind of understand better when we are giving them spinach or carrots and stuff like that that's best for them and not pizza kind of thing, right? So, if they see that from other people, then they would probably feel more, um, um, encourage to um to eat what we serve at home.
>
> Participant 10, father, individual interview, May 2018

> Um, I think, well like for my children, the age of mine is only a year and my daughter is only five, um so I think it would be good at that age to teach about basic nutrition and stuff in the class and then kind of even getting into basic things like chopping and um, not at one (laughing) but at five we um, we do that, they have a kinder cooking program at her kindergarten so, you know, they do things that they can chop with plastic knives and you know and talking about the different things that they are eating and they are offered, that type of thing.
>
> Participant 1, mother, individual interview, April 2018

Independence

Some parents mentioned that they wanted their children to be more independent in the kitchen. This was not for the majority of parents since some of them said that they would like their children to be careful and to not cook things that are considered too dangerous. As we identified, those parents wanted their children to be more independent because they already have some kind of experience cooking with them and parents have seen that they are good and able to do things by themselves. They still mentioned that children need to be safe in trying things out in the kitchen.

> And my kids, they really shine really well when I let them be independent. So if we're, you know, making muffins or something, I let them measure everything and I let them do it. If I had any recommendation it would be to give the kids more independence. Like even having it where kids were not with their parents because children act different with parents and without parents. And I think kids learn better without their parents, personally. I mean I would love to do something inclusive with my children but if there can be like a parent thing and a kid thing and then um, not necessarily not supervised maybe but just having the kids do it for themselves, I think that would be more eas- it would work more.
>
> Participant 8, mother, individual interview, April 2018

> I also like the idea of him being independent and following instructions by a instructor, so I guess having some classes where he is by himself some others where we are there, like maybe both, but I'm not really- because I haven't done the one with us there, I don't know how would that would go, I wonder- 'cause there must be advantages for both.
>
> Participant 13, mother, individual interview, May 2018

In order to achieve children to learn be more independent, a parent proposed to have a variety in the program by having some sessions where children cook with parents and some other sessions where children cook more basic food but by themselves.

> And not be involved which also has the advantage [that?] they learn how to be independent and I think, like I ( ) having the kids learn to like make their own foods is super good for them so I don't know like um, maybe have one that, if we are going to have two maybe have one that is parented and the second one that is un-parented, I don't know.
>
> Participant 12, father, individual interview, May 2018

4.2.1.5 Delivery (day, length, location and frequency)

Day and time

Regarding the day of the week to offer a cooking program, parents showed more interest in weekends. Although some of them were also open to weekday evenings, most of the parents of this study work either part time or full time, therefore, weekend day would be best for them:

> Weekend, yeah. During the week it's not gonna work at all.
>
> Participant 2, mother, individual interview, April 2018

> I guess a weekend potentially could open things up a little bit more when we are not working.
>
> Participant 14, mother, individual interview, April 2018

> It would be nice if it was on the weekends.
>
> Participant 6, mother, individual interview, May 2018

> And I would certainly don't oppose that during the week day too because especially for working parents it's nice to be able to do something um with your child one on one like that, its special for them. So it can be either like an evening, early evening kind of the week day, or it can be like a brunch time setting morning lunch time setting on Saturday or Sunday that type of thing.
>
> Participant 3, mother, individual interview, May 2018

Regarding the time, parents also showed interest in having sessions in the morning, if this was planned for the weekends:

> I like if things are in the weekend I like them to be in the morning.
>
> Participant 1, mother, individual interview, April 2018

> Saturday mornings that would be a good time, I think.
>
> Participant 10, father, individual interview, May 2018

One mother highlighted something important, she said that the day would depend on the target audience. For instance, for this group, weekends accommodate them better because parents mostly work, but if the target audience were people with different schedules, thus an exploration of which day works best for them will be important. If there is a program available but it fails to accommodate the time of its target audience, then people would not be able to participate no matter how much they would want to do it.

> Weekends or weekdays. I think it depends on who the target is. Because people who work wouldn't be able to do it during the week um but the target might be a different, a different group where the weekends work or the weekdays do work if there is near to public transport.
>
> Participant 15, mother, individual interview, May 2018

Length

Regarding how long a session could be parents want this program to have a session that is no longer than 90 minutes, and even some of them mentioned it should be less than 45 minutes: "I think the kid's attention span could last from half an hour and forty-five minutes" (Participant 15, mother, individual interview, May 2018). This is because they consider that young children have a short attention span and they would not be able to pay attention or to engage in longer sessions:

> It would probably be like an hour to an hour and a half. I know my kids are young, they are three and five and their attention span is really, definitely can't sit through long kind of thing so.
>
> Participant 8, mother, individual interview, April 2018

> Well I think a session, yeah, I think a session like with their attention span maybe, you know, half an hour something like that because with the attention span having a cooking lesson for like one hour they will just gonna lose interest, I think. They are going to start running around somewhere and doing something else.
>
> Participant 4, mother, individual interview, April 2018

In planning sessions for young children, they need to be, therefore, focused and straightforward to be able to cover all the messages and activities wanted for one session in a shorter time. It will be also equally important to find ways or fun activities to keep children engaged in the sessions.

Location

In terms of location, parents were not specific. As long as the location is convenient for them, they could be able to attend. If it is close to where they live is better for them but also if they have a car it should be travel convenient. Some of them set an estimated travel

time of 20 minutes as a maximum. Some characteristics also mentioned are parking covered and close to public transit:

> Well, being located at the university is great, it's very convenient for us. Um, anywhere central. Um, if parking were covered.
>
> Participant 2, mother, individual interview**,** April 2018

> Um, location near public transport.
>
> Participant 15, mother, individual interview, May 2018

> We live kind of close to downtown so somewhere around 15 to 20 minutes around where I live, further than that I think it would be too much.
>
> Participant 10, father, individual interview, May 2018

Frequency

Parents mentioned they were willing to commit to a cooking program that is offered monthly or biweekly. It was also mentioned that it would be nice to have these kind of activities as a routine for the family:

> Once a month probably, twice, maximum twice a month I think.
>
> Participant 13, mother, individual interview, May 2018

> I think it's nice to have it on a certain routine, so you can kind of plan around it whether it's biweekly or once a month at least maybe.
>
> Participant 9, mother, individual interview, May 2018

4.2.2 Online community support group targeting parents

Parents of this study showed a high interest in having an online component that they could access at their own time to learn more about food, nutrition and even share or take some tips. Table 4 shows the main themes identified by parents in this study regarding their opinion of an online community support group. Parents expresssed different views on whether or not they would participate in an online community support group. The majority were interested, while others mentioned were not interested because they don't like the idea of receiving advice from other people or interacting with others on social media. It might be important to have different options for those with different interests. For instance, having a venue where people can interact and, share ideas and tips between them but also it will be helpful for those only searching for information or resources that they can just consult.

Parents were familiar with Facebook© as a platform to connect with other people, however, for some of them, interaction with social media is not usual for them, therefore they would prefer some other platform such as websites for accessing this community.
Parents revealed they wanted information that is straightforward and to the point that highlights main ideas to help them to improve their current habits or to get more ideas. The barrier of limited time is still something that parents would have even using online community support groups. Regarding the frequency of using a resource online, they mentioned that it will depend on how much they need it at the moment and how the day goes (time constraints will also be important here).

Interestingly, parents stated that sometimes on this type of platform, people can be judgmental or parents could feel judged for their practices. It will be important to have ground rules to create a positive and respectful online environment for them to feel comfortable sharing ideas or asking questions. Parents remarked on the value of having a health professional available to answer their questions, and for some, this would make them more willing to participate or to seek to answer their questions on this platform.

Table 4. Themes identified related to an online community group for parents of young children

Themes	Selected quotes
Interest in being part of an online community support group	"I think that would be good. I think anything online, 'cause for, you know, parents kind of talk and communicate, get ideas, it's important because I mean not all kids are good eaters, not all kids are good sleepers, not all kids are good at different stuff and different parents have different strategies that work better for other families, so I think any time you can share resources with families is a good thing" (Participant 1, mother, individual interview, April 2018). "I think that's a good idea, I think a lot of parents look for that, um especially now that we all have smartphones" (Participant 15, mother, individual interview, May 2018).
No interest in being part of an online community support group	"I don't think I would be doing anything like that because like I use social media very few times and at some point, I started something and then I just, I just don't feel like I can engage in that kind of stuff. Posting and replying and all that it's just, it's just not for me" (Participant 10, father, individual interview, May 2018). "I automatically distrust anyone telling me 'you gotta do this' or 'if you don't you are gonna ruin your kids', like mm-mm ((showing disagreement)). I mean, the best advice I find it's the kind that I will seek out" (Participant 2, mother, individual interview, April 2018).
Facebook©, a useful form of media	"I'm just thinking I'm not that text savvy, I guess the only thing that I can think of right now is something like a Facebook©" (Participant 9, mother, individual interview, May 2018). "I use Facebook©. I don't- I don't do the, I know is it one called Twitter©? I don't know how to use Twitter©. I don't use Instagram© either. I just pretty much use Facebook©" (Participant 8, mother, individual interview, April 2018).

	"I think yeah, for me, that's been a good platform (Facebook©) to use, um, just because yeah when you post up people can see it and they can reply your comments" (Participant 6, mother, individual interview, May 2018).
Parents willing to try different online platforms	"I mean, the thing is I'm, I'm really bad at social media and, you know, any kind of online platforms […] I am really bad at Twitter© and you know and Facebook© and things like that so for me, anyway, like just like a normal website" (Participant 4, mother, individual interview, April 2018). "Instagram© it's really good for photos and if we are gonna talk about food and what to do and meal prep I find that Instagram© it's just way more easier" (Participant 3, mother, individual interview, May 2018).
Frequency to use a resource depends on own needs and preferences	"It just really depends on how my day goes. If I have time that evening and I'm interested to look at some new recipes or food options or socially connect with another parent that's interested in that, then I would look on there. But if I'm having a swamped week 'cause the kids are crying 'cause they are sick, I don't know, then I wouldn't really go" (Participant 9, mother, individual interview, May 2018). "I would probably use it, like if I'm having issues with, with food like I have no inspiration and one of the kids it's being fussy, um, or I need to change my diet for some reason I would use it a lot and then when things are [plain saving?] I would only use it occasionally. So, right now I'm using a lot of resources because we got bored of our food and I have a fussy baby um and I'm trying to figure it out what it is causing the fussiness so I'm using a lot of resources right now" (Participant 15, mother, individual interview, May 2018).
Information straight to the point	"I think I mentioned this last time but like if it's going to be a community like it should be like, again, straight to the point, um we just have like so many minutes for ourselves that it would be to

	be, you know, maybe they could be longer conversations like if it's a forum community and there is some um interesting aspects like that could like sparse out but that would be, I, I would like to the main focus if it is going to be something like value that I can just get quickly then have that" (Participant 12, father, individual interview, May 2018). "Maybe some quick summaries about articles" (Participant 13, mother, individual interview, May 2018).
Health professional adds value	"I definitely see the value in it, the health professional is obviously going to have more answers at certain type of knowledge that as those parents will not have, so" (Participant 6, mother, individual interview, May 2018). "I like that idea quite a bit, just to make sure we're on um, we're on track with the tips that's being offered and stuff, I think that would be great and just additional comments to have that health professional be able to provide some feedback or responses to questions that we might have" (Participant 3, mother, individual interview, May 2018).
Ground rules a must	"[…] 'Cause if I'm just asking out in the dark like I don't know, there are so many different ideas on how nutrition should be and parents we can feel very um, you know, a little bit sensitive that whether we are doing a good job in um for nutrition in our, for our kids, so if there is some moderation there" (Participant 13, mother, individual interview, May 2018). "It would, it's with a clear expectation that this is supposed to be respectful and, and inclusive and that, you know, not supposed to make anyone feel bad just because of the food choices, they make" (Participant 3, mother, individual interview, May 2018).

4.3 Discussion

Parents were interested in different aspects of the food literacy domains. They liked the idea of having a food literacy program that involved children and parents attending a series of cooking classes. For parents of this study, the outcomes they would like to see in a cooking program would be that their children will learn some basic cooking skills that can serve as a basis for their future development of cooking skills (gain independence) and improve their relationship with food which might also impact their health. Nevertheless, cooking programs with parents and children can also have other benefits. For instance, a pilot study of a cooking program with parents (34 years old ~ average) and school children (around 8 years old) showed that after 10 weeks of attending the program, the number of times the family eats "away from home" decreased from 56% to 25% (Robson, Stough, & Stark, 2016).

Some parents in the present study also mentioned experiencing barriers in their children's acceptance of food. Therefore, they would like to learn some strategies that might help their children to accept new food. A recent study conducted by Allirot et al. (2016) with children aged 7 – 11 years-old (n= 137) showed that children who participated in a cooking session had a higher "willingness to try" unfamiliar foods, compared with the control group who only received a workshop (Allirot, da Quinta, Chokupermal, & Urdaneta, 2016). These findings demonstrate that involving children in the preparation of food such as a cooking program similar to the one proposed in this thesis is a promising approach to help them have a wider acceptance of different foods. Furthermore, starting with children from early ages will equipped them with more cooking skills for when they grow up.

In another study, quasi-experimental, 271 children in grades 3-8 from different ethnic backgrounds participated in a 10-week cooking program where they also received education in nutrition along with the different sessions (Jarpe-Ratner, Folkens, Sharma, Daro, & Edens, 2016). They found that at the end of the program children had increased their knowledge, self-efficacy in cooking and their intake of fruits and vegetables compared to before the program (Jarpe-Ratner et al., 2016). Similarly, parents of this study wanted their children to learn about basic cooking skills and food literacy which will help them to improve their eating habits. As shown in different studies, cooking programs with children are effective in achieving these outcomes, therefore, it is important to focus efforts in the development of initiatives that could help children, parents and families to be more food literate.

In order to plan a food and nutrition program, it is important to determine what programs are already available that could meet the needs of the potential participants. In Edmonton, parents participating in this study would have some options for their children since different cooking programs are available locally where children can participate and increase their cooking skills (City of Edmonton, 2018). However, most of the cooking programs only accept children 6 years-old or older, making the parents of this study wait until their children are older. There are only limited cooking programs targeting children younger than 5 years-old.

Another detriment which will not meet the needs and wants of parents participating in this study is that parents are not usually included in these cooking programs. The City of Edmonton offers cooking programs for children 4-6 years old with a price that varies from 100 – 160$ (City of Edmonton, 2018). Since, these programs seem to not include the parent component which would leave out some of the benefits that parents highlighted in this study of bonding and cooking together with their children.

Parents of this study showed a high interest in some online initiatives to help them with different aspects related to food literacy. Recent studies have demonstrated the effectiveness of online initiatives compared with in-person ones. For instance, a well-known American program called "Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)" conducted a study with parents and their young children to compare an in-person nutrition education intervention against online nutrition education intervention and they found that both groups were effective in accomplishing the objective of this study ("reduce breakfast skipping and promotion of healthy breakfast") (Au, Whaley, Rosen, Meza, & Ritchie, 2016). Therefore, online initiatives might be a promising approach that will need to be further explored. The benefits of the online component as mentioned in this present study by parents is that working parents who have time constraints would be able to access to information at their own time which could potentially increase parent's participation in this type of initiatives.

4.4 Summary

The objectives of the second research question were (a) to identify the general attributes of a food literacy program that will promote parents' participation; and (b) to identify the essential components of a program aimed at parents of children attending childcare. These were met through the needs assessment with parents and prioritizing their needs to identify the general attributes of this food literacy program. Parents mentioned that they wanted this program to be a fun activity for the family, to include children, to be delivered by some experts, to have a sense of community and an online component to be able to access to information on their own time.

The essential components of the program were identified including a cooking program aimed at parents and children. Parents wanted this program to be about easy and healthy recipes geared toward the children's level. They wanted their children to learn cooking skills and about healthy eating through this program. Also, they wanted them to have a family bonding time which could enhance the relationship that children have with their parents and with food. In terms of delivery, parents wanted this to be mostly on the weekends, at a convenient distance and monthly or biweekly.

Parents are highly interested in an online component to have access to nutrition information or potentially to be part of a community where they can ask questions about food and nutrition related to their children. More studies regarding cooking programs targeting parents and young children will be needed to assess their effectiveness and to see if it will be worth it to start targeting younger ages instead of waiting to implement this type of program at a school age.

Chapter 5. Implications and conclusions

5.1 Implication for theory, research and practice

This thesis provides a basis for future planning of food literacy programs targeting parents and young children. Regarding theory, we have a general definition of food literacy. We could explore among all those components what are the current practices and skills of parents that could help them to enhance that healthy relationship with food. Parents of young children are health conscious and consider the impact of their food decisions on the environment. They are looking for sustainable diets, but still confusion exists around how to achieve this because information is plentiful, and often contradictory.

Moreover, parents in this study go further in their practices of food literacy by including their children in different activities at a young age to help them to start developing these healthy habits. Children at this young age can grow up with good memories with their parents and be surrounded by food. As some parents mentioned, they can perpetuate those positive experiences throughout their family's generations.

Through this thesis work, we have a better understanding of what parents preferred from a food literacy program to meet their wants and needs in learning about food. We can also confirm that parents of young children are avid in the use of technology related to food to help them with some chores in a practical way, such as organizing grocery lists, creating meal plans and so on. They are still awaiting more new technology with novel features to help them with more of these chores.

Qualitative research, and in specific focus groups as a data collection strategy, was the best option for interacting with parents. We would suggest talking about food as part of the inquiry of any future studies, due to the social meaning that it implies, it was helpful for them to share and hear from other people about what they do and some of their strategies. Parents in this study realized that they liked the interaction and the sharing of ideas.

Although this thesis made a comprehensive exploration of all the domains of Vigden's food literacy framework, it is not practical to include all of them in the planning of a food literacy program. In conducting future explorations around food literacy, it is crucial to prioritize which aspects of food literacy would be more relevant to address as a way to have a more effective intervention which is what we aimed by selecting the essential components of a food literacy program.

5.2 Conclusion

The work of this thesis expands on the current knowledge about food literacy but focused on the perspective of parents of young children. Through focus groups and interviews, we were able to know the status of, needs and interest in food literacy of parents of young children attending childcare centres. Furthermore, we were able to determine the general attributes and essential components of a food literacy program targeting parents of young children attending childcare.

Parents make sure that they have food available at home through formal or informal planning. They select food, keeping in mind their family and children's health, which implies limiting food high in sugar and sodium through label reading. Parents prefer the preparation of practical and healthy meals in their households as they are aware that diet is important for their children's health. For parents it is important to have family mealtimes as they consider them as having different benefits for their children. Furthermore, parents want to improve their children's relationship with food by including them in different aspects such as grocery shopping and food preparation. Parents experience different barriers across the different domains of food literacy but a common barrier was the lack of time.

Further exploration of the essential components of a food literacy program targeting parents and children highlighted the parents' interest in improving their children's relationship with food by learning age-appropriate tasks that they could do in the kitchen, in learning about meal planning and healthy and easy meal preparations, and finally, their interest in having an online component as part of the program.

The general attributes of a food literacy program included the themes: fun activity for the family, living in a digital world, experts in charge, practical ideas on a variety of topics, and sense of community. Regarding the essential components of a food literacy program, we are now able to determine the content, dynamics, characteristics, outcomes and delivery preferred by parents of young children that includes a cooking program with easy and healthy recipes aimed at the children's level, parents and children cooking together, a fun program and eating the food that is prepared. Parents want their children to gain basic cooking skills and learn about healthy eating. Regarding the delivery, most parents preferred to have sessions on weekends, at a convenient distance and a length that is appropriate for children's attention span.

Results from this comprehensive exploration help to understand parent's behaviours, knowledge, needs, barriers, facilitators, and interest regarding food literacy. The comprehensive exploration along with the general and essential components highlighted in this thesis will help in the future planning of food literacy initiatives targeting this audience.

5.3 Future steps

Information from this thesis will be shared at different levels. The findings from this exploration and needs assessment will be published in academic journals and will contribute to the increasing body of information in the area of food literacy, but this time it will be focused on parents of young children. Summary of the results will be also sent to parents participating in this study as they showed interest in receiving the study's results. Posters and/or presentations are also planned to be shared at academic conferences and continuing professional development opportunities.

We hope that results from this thesis will inspire others to promote other food literacy initiatives in Canada with the intention of helping Canadians build a healthy relationship with food. Planning of cooking programs for young children including their parents could be a good strategy to help them develop those cooking skills and healthy eating habits beginning early in life. It is important to include program and/or behavioural theory in the conception of these programs to guide their development and inform the behaviours to be changed through these activities. More research on the effectiveness of these programs will be needed also strategies for promoting this type of programming across different settings such as communities and childcare centres.

5.4 Strengths and limitations

The strengths of this research are that parents who participated in the focus groups were keen to share as much information as they could. The focus groups discussions were rich and parents interacted with each other, which was the aim of this data collection strategy. Having a second data collection strategy is another strength because it helped to complement the information gathered from the focus groups. It helped to have a better understanding of what was being said by going further into detail with some parents individually.

Another strength is the methodological rigour and accompanying strategies undertaken throughout this thesis and research. The PI meticulously followed the procedures of thematic analysis to ensure that the results of this thesis were truly representative of the data collected. The PI allocated enough time for each step of the process of the analysis of this thesis. For instance, the data were transcribed in detail and verbatim; the coding process was "inclusive" and "comprehensive" (Braun & Clarke, 2006). The codes and themes were revised at the end by other researchers to reach consensus on the logic and critical thinking of the final results. As well, to see that the final results truly represented what the participants said, a final revision of the themes was made by going back and reading the entire data set by the PI one last time. Reflections, notes and an audit trail were developed for this research to ensure and show the evolution of the analytic process.

This thesis also has some limitations. First of all, one limitation was due to the inherent nature of conducting interviews via the telephone; a few parents were not able to see the food product that helped guide the interview questions focused on food labels and ingredients. Therefore, some questions might not have been answered as in-depth as the other participants who had access to see the food product (i.e., box of cereal). However, this was minimized by letting the participants know how the food product label was arranged or by giving some examples to help them imagine a food product with labels to assist them in trying to answer the questions. Another limitation stemmed from the analysis of the transcriptions since no other researcher did an independent coding to reach consensus. Nevertheless, to minimize this limitation, the PI paid particular attention and reflection to her own biases during the analysis. A way to mitigate this was when two other researchers had the opportunity to revise the themes by going back to the codes and collated data.

Lastly, these results might be only transferable to parents with similar characteristics of the parents participating in this study. We might have failed to recruit parents that had more needs and less food literacy levels to learn from them because of their lack of interest in the topic. However, as we saw in this thesis, even parents who are already knowledgeable about the topic have needs and room for improvements to enhance their food literacy, of which will also impact their children's food literacy.

5.5 Reflections

As a graduate student and novice to the field of qualitative research, I became more reflective of myself, my work and biases as this area of research required. As an active researcher of this study, I had to acknowledge my own biases which could have directed the results of this thesis, although it is impossible to avoid it, it is possible to minimize it by practicing constant reflection which I did throughout the whole process with an audit trail. I learned some lessons by conducting this research that could help other novice researchers as well.

The first would be to have as many strategies planned for recruitment as possible. Sometimes this is one of the most challenging parts but also the most crucial one, without participants there are no data. What worked the most for this research was to use multiple venues to contact and invite participants. For instance, the first contact was an e-mail with childcare directors, the telephone was the second contact and what worked the best in one of the childcare centres was visiting the setting (with permission of the director) to meet and invite parents in person. Another lesson learned is never to underestimate the time it takes to transcribe, especially for focus groups, and particularly, if the person transcribing is new to the process. The same is with all the other steps of data analysis, all of which needs special attention to do it in the best way possible.

Conducting qualitative research is fascinating for someone who likes to hear about other people's experiences, trying to understand them and trying to make sense of what they share with you. It can feel overwhelming at the beginning after seeing hundreds of pages of transcripts needing to be analyzed, but with the use of qualitative software to organize the data, in which I highly recommend using, this task becomes more manageable.

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Appendices

Appendix 1. E-mail to childcare directors

Hi, (name of childcare) staff

My name is Paulina Blanco and I am a Master of Science in Human Nutrition and Metabolism student under the supervision of Dr. Anna Farmer at the University of Alberta. We really appreciated your participation in the Food Literacy Intervention Program (FLIP). As a continuation of Dr Farmer's FLIP program, we would like to include the parents of children attending your childcare centre.

My research project consists of developing a food literacy program aimed at parents of children attending childcare centres. More specifically, I would like to understand parents' needs and interests regarding everything related to food. There are few programs for parents and I am hoping this information will help to inform a food literacy program that considers parents' needs and wishes. The study will involve gathering around 6-8 parents from your childcare centre for one focus group (about 1 hour commitment). From there, we want to hold one interview (about 45 minutes) at another time with 2 parents who participated in the focus group.

Each parent will receive a $25 gift card for their participation in each session; $25 for the focus group and $25 for the interview. There is no risk or cost for parents participating in this study.
The information that I gather from this focus group and interviews will help me and the FLIP team to develop a food literacy program aimed at parents and in this way, help ultimately children to develop healthier habits.
If you are interested in having your childcare centre participate, please reply this e-mail,

Thank you very much for your time,

Sincerely,

Appendix 2. Poster of recruitment

a) Poster sent through e-mail (format)

b) Format brought to be posted at the bulletin board at childcare centres

Appendix 3. Information letter

Department of Agriculture, Food and Nutritional Science
Faculty of Agricultural, Life and Environmental Sciences

INFORMATION LETTER

Study Title: Development of a food literacy program aimed at parents of children attending childcare centres

Research Investigator:
Paulina Blanco Cervantes, MSc Student
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Edmonton, AB, T6G 2R3
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Research Office: 780.492.9487

Supervisor:
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What are we doing?
We know that parents have an important role in the development of healthy eating habits in children. For that reason, we would like to invite you to be in this study. We want to hear from you as a parent. We are interested in knowing more about your experiences with food, from cooking styles that you prefer to use, how you select your food, the way you prefer to eat it and with whom you prefer to share your meals and more.

The childcare centre where your child is attending agreed to participate and allowed us to invite you as a parent to participate in this study. The results of this study will be used to support Paulina Blanco Cervantes's Master of Science in Nutrition and Metabolism degree at the University of Alberta under the supervision of Dr. Anna Farmer.

Why are we doing this study?
The purpose of this research is to understand your needs and interests as a parent regarding everything related to food. This will help us to develop a nutrition program specific for parents of children in preschool ages.

How and what you would be asked to do?
We will ask you to come to the childcare centre or to a community centre to have a conversation with us. More specifically, we will ask you to share with us your experiences regarding food.

There are two parts to the study: focus groups and interviews

The first part will be focus groups: We will invite you and other parents to participate in a group conversation in where you will share some of your experiences and points of view.
Important details about the focus group:

- This meeting can last from 1 hour and at maximum of 1.5 hours.
- Each focus group is composed by 6-8 parents.
- We will audio-record this meeting to later transcribe each of the words that you and other parents said.
- We will always respect each other's opinion, everyone's opinion is important. Everything that we say during this meeting will be kept confidential. We will not talk about anything or anyone after the focus group has ended, and we will ask for the same to all the persons attending.

Second part will be Interviews: Parents, who participated in the focus groups, will be invited to participate in individual interviews. It will be your decision to participate in both or only the focus group.

Important details about the interview:

- The interview can last 20 – 60 minutes, depending on our conversation and the amount of experiences that you feel comfortable in sharing with me.
- The interview will be individual and in-person.
- There are no right or wrong answers, we will not grade or judge any of your answers. We only want to hear from you and your experiences and opinions.
- We will audio-record our conversation to be able to transcribe it later.

Are there any benefits?
We hope that the information we get from doing this study will help us better understand parents and develop more effective nutrition programs. This will help parents and children to have a better relationship with food which will lead in healthier kids since their early ages. You will receive a $25 gift card as an appreciation of your participation in the focus group. If you also participate in the interview you will receive another $25 gift card.

Is there any risk?
There is no risk in participating in this study. We will take care of the environment of the place and have refreshments in case you are thirsty.

This is voluntary
You are not obligated to participate in this study. Participation is completely voluntary. Even if you are participating in the study, you are not obliged to answer any specific questions during the interviews or focus groups. You can change your mind about your participation and withdraw at any time. We guarantee to you that your name will not appear in any of our databases. The data from the focus groups and interviews will be anonymized.

Data from the focus group cannot be withdrawn because is not linked with your name or any personal identifier. You can withdraw the information from your interview before data analysis begins, which will be 2 weeks after transcription. Once your interview is analysed, it is impossible to withdraw because the data are not linked to you.

We will keep confidentiality & anonymity
The results of this study will be used for Paulina's MSc thesis. The results will also be used in a research article and presentations at conferences. You will never be personally identified as a participant of the study or the childcare centre.

The data will be kept confidential. Only the research investigator, the Research Ethics Board of the University of Alberta and Dr. Anna Farmer will have access to the data. The data will be kept in a secure place for a minimum of 5 years following completion of research project, after that all data will be destroyed. The electronic data will be password protected and encrypted in a computer. This computer is located inside the building of Edmonton Clinic Health Academy at the University of Alberta.

If you are interested in receiving a copy of the research findings, please indicate your interest sending an email to me (blancoce@ualberta.ca). I will send you through that same e-mail a copy of the results after finish analyzing and interpreting them.

Further Information
If you have any further questions regarding this study, please do not hesitate to contact

Research Investigator:
Paulina Blanco Cervantes
blancoce@ualberta.ca
Research Office: 780.492.9487

Supervisor:
Dr. Anna Farmer
farmer1@ualberta.ca

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

Appendix 4. Consent form

Department of Agriculture, Food and Nutritional Science
Faculty of Agricultural, Life and Environmental Sciences

Consent Statement

I have read this form and the research study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above and will receive a copy of this consent form. I will receive a copy of this consent form after I sign it.

_____ _____

Participant's Name (printed) and Signature Date

_____ _____

Name (printed) and Signature of Person Obtaining Consent Date

Appendix 5. Sociodemographic characteristics

a) Participant Information

QUESTION	ANSWERS
What is your name?	
What is your e-mail?	
What is your gender?	a) Female _____ b) Male _____ c) Prefer to self-describe _____ d) Prefer not to say _____
How old are you?	Age in completed years _____
How many children do you have?	
What are the first three digits of your postal code?	Postal Code _____

b) E-mail sent to participants to inform about the short survey through REDcap

Hi _____

I hope this e-mail finds you well. I am contacting you again regarding the food literacy study where you participated by attending a focus group/interview. I am kindly asking participants if they could help me to answer a short three-question survey which should take less than 3 minutes. In order to have a better description of the participants in this study, we are collecting some extra information on education (highest level of study), occupation (working full-time, part-time, not working) and ethnic origin.

You will receive an e-mail soon with a link to the survey through a secure platform from the University of Alberta, to help with this information.

As a reminder, this information will be anonymized. Also, when we use this information (thesis, presentations, posters), it will be reported in a table as a group description (never linked to individuals). All the information about participants will be kept secure in a locked

office at the University of Alberta in a password protected computer and names of participants will not be linked to this information. The collection of this information has been reviewed and approved by the Ethics Boards of the University of Alberta.

Thank you very much for your help,

I hope you have an excellent day!

If you have any questions regarding this please let me know

Sincerely,

Paulina Blanco

c) Short survey through REDcap

1. What is the highest level of school you have completed or the highest degree you have received when the focus group was conducted (November 2017 – January 2018)?

a) Less than high school degree
b) High school degree or equivalent (e.g., GED)
c) Some college but no degree
d) CEGEP or other non-university certificate or diploma
e) Bachelor degree
f) Master's degree
g) Earned doctorate

2. Which of the following categories best describes your employment status when the focus group was conducted (November 2017 – January 2018)?

a) Employed full-time
b) Employed part-time
c) Not employed, looking for work
d) Not employed, NOT looking for work
e) Retired
f) Disabled, not able to work

3. To which of these ethnic origins do you feel you belong?

a) North American Aboriginal origins (e.g. First nations, Inuits or Métis)
b) Canadian
c) American
d) European origins (e.g. British Isles origins, English, Irish, Scottish, Welsh)
e) French origins (e.g. Alsatian, French)
f) Western European origins (e.g. Austrian, Belgian, Dutch, Flemish, Frisian, German, Swiss)
g) Northern European origins (e.g. Danish, Finnish, Icelandic, Norwegian, Swedish)
h) Eastern European origins (e.g. Bulgarian, Czech, Estonian, Hungarian, Latvian, Lithuanian, Moldovan, Polish, Romanian, Russian, Slovak, Ukranian)
i) Southern European origins (e.g. Albanian, Bosnian, Croatian, Greek, Italian, Portuguese, Serbian, Spanish, Yogoslavian).
j) Caribbean origins (e. g. Barbadian, Cuban Dominican, Jamaican, Trinidadian/Tobagonian)
k) Latin, Central and South American origins (e.g. Argentinian, Brazilian, Chilean, Colombian, Ecuadorian, Mexican)
l) Central and West African origins (e.g. Beninese, Cameroonian, Congolese, Ghanaian, Nigerian)
m) North African origins (e.g. Berber, Coptic, Egyptian, Moroccan, Sudanese)
n) Southern and East African origins (e.g. Eritrean, Ethiopian, Kenyan, South African).
o) West Central Asian and Middle Eastern origins (e.g. Afghan, Arab, Armenian, Iranian, Lebanese, Turk)
p) South Asian origins (e.g. Bangladeshi, East Indian, Nepali, Pakistani)
q) East and Southeast Asian origins (e.g. Chinese, Filipino, Japanese, Korean, Malaysian, Singaporean, Thai, Taiwanese, Vietnamese)
r) Oceania origins (e.g. Australian, New Zealander, Pacific Islands origins)

Appendix 6. Focus group: interview guide

a) Outline of the focus group:

1. Introduce yourself and welcome participants
2. Ask to read (if they haven't) letter of information and to sign the consent form
3. Have a short activity as an icebreaker to introduce each other
4. Tell participants details about the study and focus group:

Script:
Thank you for taking the time to come today to this focus group. We invited parents of this childcare centre because we implemented here a food literacy program in the summer including children, childcare educators and cooks, but now we would like to extend this program also to parents. The goal is to have a conversation and to hear from you about different things related to food. This will help me with my thesis research as part of my master program. Food literacy includes aspects as planning and management, selection of food, preparation of food and eating. Also, we would like to know how a food program, should look like to be more interesting to you.
The time of this focus group could be around 1 hour to 1 hour and 30 minutes.

I want to remind you that:

- Your participation here is voluntary. There are no wrong or right answers, so feel free to share whatever you want with us. We will always respect each other's opinion; everyone's opinion is essential. If your opinion is different from the other's views, that is okay because it will help to have different perspectives.
- What you say in the focus gruop will be confidential. You will never be identified with anything that you say. Only me, Dr. Farmer who is my supervisor and the Ethics Board of the University of Alberta can have access to the original discussion of the focus groups.
- I will use this information in combination with the other focus groups, therefore what you say will not be directly linked to you since we will remove all names.

The notetaker here with me (name) will be taking notes and we will also audio record this conversation to be able to transcribe it later and analyse more accurately what you share with us.
Do you have any questions? If you are okay, we will start recording now.

6. Start recording and start the interview guide
7. Summarize and end recording
8. Ask participants who are interested in individual interviews.
9. Give participants gift cards as a thank you for their participation

b) Focus group interview guide

Planning and management

1. I would like to hear your experiences on how you decide what to eat for you and your family.
   a) How do you plan how you will feed your family in a typical week?
      Prompts: - Creating a grocery lists?
      - Do you take time to do it? When?
      - Other strategies?

Selection

2. Who usually does the grocery shopping in your household? (Adapted from Smith et al., 2016)
   a) Where do you (or person who does the grocery shopping) usually shop? (Adapted from Smith et al., 2016)
      Prompts: - Do you use other sources?
      - Why do you prefer the one that you visit instead of the others?

   b) When deciding what to buy, what factors determine this decision?
      Prompts: - Price?
      - Time to prepare that meal?
      - Convenience, taste?

In case they mention to visit only one grocery store:

   c) Scenario: Let's imagine you are at the grocery store. I want to know more about shopping habits at the grocery store: Which section would you visit first? What would you look for there?
      Prompts: - Fruits and vegetables, meats, cereals.
      - What would you do next?

   d) When you buy packaged foods, what do you consider the most important nutrition information to look at?
      Prompts: - What about the nutrition facts table?
      - What about the list of ingredients?
      - What about the claims of a product?

Preparation

3. Now, I would like to hear more about how you developed your cooking skills or interest in cooking

   Prompts: - What age did you learn to cook?
   - Who taught you how to cook? Mother, Father, teacher?
   - What kind of training did you get? At school (e.g., foods program?)

   a) Which type of dishes do you usually prefer to prepare for your family?
      Prompts: - Do you use packaged food? Semi-prepared food?
      - How often do you cook from scratch? Why?

b) Are there any meals that you consider easier than others?
Prompt - Which cooking techniques/food preparations do you feel more confident in using?

c) If you want to prepare something that you have never prepared before, what would you do?
Prompts: - Do you look for ideas for recipes? Where? Internet? Blogs?
- Do you call a friend or a relative?

Eating

4. Let's think at the moment that we are actually eating. Do you think that the way you feed your family affects their health? (Adapted from Smith et al., 2016)
   a) Which foods do you consider important to include for you and your family?
   Prompt: - Is there any food that you prefer to avoid? Why?
   b) At meals, how does your family determine what is the amount of food they are going to eat? (Adapted from Smith et al., 2016)
   - Canada's food guide as a resource?
   c) Why do you consider that making meals at home helps you and your family to eat more healthily? (Adapted from Smith et al., 2016)
   d) Does your family typically eat meals together? (If no, why not?) (Adapted from Smith et al., 2016)
   Prompt: Electronics?
   e) What type of strategies or activities have you included in your household to help your children develop healthier eating habits

Program delivery / components

5. We have discussed different areas today as (examples). But, as a parent, what would you be interested in learning more about (name the 4 themes)?

6. If there is a program available to help with these interests. What would it look like?
   Prompts: - Classroom
   - Grocery tours
   - Websites / Videos
   - Hands-on cooking
7. Do the credentials of the person delivering the program matter to you? What would you prefer?
   a) How much of your time will you be willing to give to those activities?

8. Is there anything else that you consider important and we haven't talked about?

Appendix 7. Individual interview: interview guide

INTRODUCTION

Thank you very much for (coming here/taking my call) for this interview. I really appreciate your time and input in this study. The aim of this follow-up interview is to get a deeper and more focused understanding of parents' decisions related to food choices, which will help us in the development of the food literacy program for families.
The total length of time of the interview is expected to be about 20 – 30 minutes. It could be less or more than this, depending on how the conversation flows.

I want to remind you that:

- There are no wrong or right answers, so feel free to share whatever you want with me.
- I am here to learn from you about decisions that you as parents make about food choices.
- Your participation is completely voluntary.
- I will be taking notes and I will audiorecord what you say to be able to transcribe it as accurate as possible.
- What you say in the interview will be confidential. You will never be identified with anything that you say. Only me as the Principal Investigator, Dr. Farmer who is my supervisor and the Ethics Board of the University of Alberta can have access to the original interview.
- Reports will be written using combined information from all parent interviews.

Do you have any questions?
I would like then to get your consent to start the interview and start recording now.

INTERVIEW GUIDE (Individual interviews)

1. On a scale of 1 to 4, 1 having no confidence and 4 having high confidence, how confident do you feel in your understanding of all the information presented on a packaged food?

1 No confidence	2 Slight confidence	3 Moderate confidence	4 High confidence

- Prompt: Which parts of the label do you read most often when deciding to purchase a food product? Does this change with different products?

a) Ingredient list_____
b) Nutrition Facts table_____
c) Calories in the food
d) % Daily Value for nutrients in the food_____
e) Nutrition claims _____
f) Other (specify):_____

Why?

- Prompt: Are there parts of the label that you do not use when deciding to purchase a food product?

g) Ingredient list_____
h) Nutrition Facts table_____
i) %DV _____
j) Calories in the food
k) Nutrition claims _____
l) Other (specify):_____

Why?

- Prompt: Are there parts that you don't understand?

a) Ingredient list_____
b) Nutrition Facts table_____
c) %DV_____
d) Nutrition claims _____
e) Other (specify):_____

Why?

Is there is something that you would like to learn more about?

2. If there was a program to teach cooking skills to young children and parents, what would the program look like? What would you expect to learn from this program?

- Prompt: Would you be willing to participate?

a) Yes ____
b) No _____
c) Not sure _____

- **If yes:** How often and for how long would you and your child(ren) be willing to participate?

- **If no or not sure:** Why?
- What would make it easy for you to participate in such a program? In terms of time, day or location.

3. What is your opinion about having an online community support group to share ideas and tips on healthy eating for parents?

    - Prompt: Would you be willing to contribute to this resource?

    d) Yes _____
    e) No _____ **Why?**
    f) Not sure _____ **Why?**

4. In case you want to be part of an online community support group, what platform or social media, which is the most preferred one to use?

    a) Facebook© _____
    b) Blogs _____
    c) Forums _____
    d) Other (specify): _____
    e) None _____

    - Prompt: What would be the reason for this?
    - How often would you use this resource and how?

    - Prompt: What is your opinion about having a health professional overseeing this group to answer questions?

5. In case you need to look for nutrition information on the internet, how would you do this?

6. Which websites do you consider offer credible and trustworthy nutrition information?

    a) Government (AHS, Health Canada) _____
    b) Dietitians of Canada _____
    c) Dietitians _____
    d) Other (specify): _____
    e) I do not know, or I do not use websites for nutrition information _____

    - Prompt: What criteria do you use to determine the trustworthiness of a site?

7. If you wanted to achieve healthier eating habits, what kind of practical nutrition information would you like to receive in a program?

Appendix 8. Pre-test survey interview guide for individual interviews

EVALUATIVE QUESTIONS OF THE INTERVIEW

1. What do you think about the length of the questionnaire?

a) Appropriate
b) Slightly appropriate
c) Neutral
d) Slightly inappropriate
e) Inappropriate

2. Is the questionnaire worded in a way is easy to understand?

a) Disagree
b) Somewhat disagree
c) Neither agree or disagree
d) Somewhat agree
e) Agree

3. The flow of the questionnaire is organized in a logical and natural way

a) Disagree
b) Somewhat disagree
c) Neither agree or disagree
d) Somewhat agree
e) Agree

4. I understood clearly what I was being asked

a) Disagree
b) Somewhat disagree
c) Neither agree or disagree
d) Somewhat agree
e) Agree

5. I understood clearly the terminology being used

a) Disagree
b) Somewhat disagree
c) Neither agree or disagree
d) Somewhat agree
e) Agree

Do you have any suggestions for the improvement of this questionnaire?

Appendix 9. Draft of mind maps looking for patterns in the data

a) Draft of mind map of looking from patterns of preliminary analysis of focus groups

b) Draft of mind map looking for patterns of focus groups and individual interviews together