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The Provision of Foods and Beverages to Children from Non-Parental Sources: An Exploratory Study

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Health Promotion

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Abstract

This study explored: (1) the overall frequency of food/beverage provision to children from non-parental sources; (2) frequency based on *location/setting, source, type* of food/beverage, and *special event/occasion*; (3) parental attitudes and awareness related to this provision; and (4) parent perceptions of children's eating patterns during the COVID-19 pandemic. Parents ($n = 30$) and children ($n = 44$) completed an online survey. Most participants reported that children were provided with foods/beverages from non-parental sources an average of 1-3 times per week. Children reported that provision was most likely to: (a) occur in other people's homes, during extracurricular activities, and at restaurants; (b) from peers, parents' friends, and relatives; (c) consist of fruits/vegetables, processed snacks, and sugary foods; and (d) take place at parties, sleepovers, and on vacations. Parents were mostly aware of, and exhibited mixed feelings about, these provisions. Parents also reported several changes in their children's eating behaviours during the pandemic.

Keywords

Childhood obesity, nutrition, family health, diet quality, food away from home, parental supervision, parental monitoring, food and beverage provision, non-parental food and beverage sources.

Summary for Lay Audience

Unhealthy foods and beverages that are prepared outside the home (e.g., fast food, restaurant foods, takeout, etc.) have been studied in relation to children's nutrition and health. However, most studies in this area have examined family meals away from home, rather than examining the foods/beverages given to children from people other than their parents (and possibly outside of parental supervision). This study was conducted to explore: (1) how often children receive foods/beverages from people other than their parents ("*non-parental sources*"); (2) how often children receive these foods/beverages in specific locations, from different people, by type of food/beverage, and at special events or occasions; (3) how parents feel about, and how aware they are, of the foods/beverages given to their children; and (4) how children's eating habits have changed during the COVID-19 pandemic. In total, 74 participants (30 parents and 44 children) filled out an online survey with questions about each of the topics listed above. Parents and children reported that children received foods/beverages from non-parental sources about 1-3 times per week, on average. Our results also showed that children most commonly reported receiving these foods/beverages: (a) from their friends, their parents' friends, and family members (e.g., grandparents); (b) at social events, during extracurricular activities (e.g., sports), and at restaurants; (c) in the form of fruits and vegetables, processed snacks, and sugary foods; and (d) at sleepovers, parties, and on vacations. Parents reported knowing about most of these foods/beverages, and they felt this awareness was important. Some parents mentioned that if their children's diets were balanced and mostly healthy, it was acceptable for them to receive unhealthy foods from others sometimes. Parents had mixed feelings about the healthfulness of the foods and beverages given to their children by other adults, and also noted that foods and beverages provided from peers seemed to be primarily unhealthy. With regard to their children's eating

behaviours during the COVID-19 pandemic, parents reported that in some ways, their children's diets were more healthy (e.g., more family meals and cooking at home), and in other ways, were less healthy (e.g., eating more baked goods and snacking more).

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Chapter 1

1 Introduction

1.1 Background

Good nutrition in early life is essential for healthy child growth and development, as well as for lifelong disease prevention (Biesalski & Jana, 2018; Darnton-Hill et al., 2004; Prado & Dewey, 2014; Uauy et al., 2008). The effects of poor diet quality during childhood is associated with a variety of adverse physical, socioemotional, and psychological outcomes (Marshall et al., 2014) including early onset of puberty (Cheng et al., 2010; Jansen et al., 2018), insufficient sleep (Cespedes et al., 2016; Chaput, 2014; Haghghatdoost et al., 2012; Ward et al., 2020), the development of paediatric overweight and/or obesity (Eriksen et al., 2018; Jennings et al., 2011; Nicklas et al., 2001), poor mental health outcomes (Dimov et al., 2019; Khalid et al., 2016; O’Neil et al., 2014), and poor academic performance (Burrows et al., 2017; Florence et al., 2008; Kim et al., 2016). A high-quality diet has also been shown to be a protective factor in maintaining health and wellbeing throughout childhood (Esteban-Gonzalo et al., 2019). Further, the dietary patterns developed during childhood have been found to track into adulthood (Birch et al., 2007; Cruz et al., 2018; Watts et al., 2018). This is particularly important given that good nutrition in adulthood has also been found to be protective against weight gain (Aljadani et al., 2013), several chronic diseases including type 2 diabetes, cardiovascular disease, and cancer (e.g., Schwingshackl et al., 2018; Schwingshackl & Hoffmann, 2015), as well as all-cause mortality (Reedy et al., 2014; Sotos-Prieto et al., 2017).

Unfortunately, research conducted using Canada's previous (i.e., 2007) food guide has shown that children and adolescents in Canada have consistently failed to meet important nutritional recommendations (Health Canada, 2007; Jessri et al., 2016; Tugault-Lafleur et al., 2019). One such study, conducted using 24-hour dietary recall data from the 2004 and 2015 Canadian Community Health Survey (CCHS), found that while diet scores improved slightly over time, children aged 6-17 years ($n = 7,274$) did not meet any of the Canadian Food Guide recommendations during or outside of school hours (Tugault-Lafleur et al., 2019). Another large-scale study, also conducted using 2004 CCHS data, found that an average of 23-31% of the total daily energy intake among Canadian children aged 2-18 years ($n = 13,749$) was from 'other' foods *not* recommended by Canada's 2007 Food Guide (Jessri et al., 2016). Finally, a 2016 Canadian study reported that only 10% of students in Grades 6-12 ($n = 47,203$) met the recommended fruit and vegetable intake, with younger students consuming more fruits and vegetables than older students (Minaker & Hammond, 2016); this is particularly problematic as fruit and vegetable intake is strongly correlated with diet quality (Garriguet, 2009)

The quality of a child's diet—and the ability of a child to meet food-related guidelines or recommendations—is impacted by a wide range of societal, familial, and personal factors (e.g., Couch et al., 2014; Darmon & Drewnowski, 2015; Marshall et al., 2014; Patrick & Nicklas, 2005; Veugelers et al., 2005). A systematic review conducted by Marshall and colleagues in 2014 ($n = 119$ studies published since 1980), in which the associations between different diet quality indices and child and adolescent health outcomes were examined, found that a higher quality diet throughout childhood and adolescence (aged 0-18 years) was positively related to higher socioeconomic status,

having an immigration background, and living in a more urban environment. Family factors that were found to be positively related to a higher quality diet included higher maternal educational achievement, greater frequency of family meals, and less time spent watching television (Marshall et al., 2014). Studies included in this systematic review also found that family and child habits and behaviours such as high levels of television viewing, regular meal skipping, frequent eating outside of the home, and high consumption of sugar-sweetened beverages (SSB) were found to be associated with lower diet quality in children and adolescents (Marshall et al., 2014).

Many of the abovementioned societal and family-based factors that have been found to impact diet quality during childhood have also been investigated within the *food environment* literature. Generally speaking, the food environment in developed countries such as Canada is considered to be ‘obesogenic’; that is, to have properties that encourage weight gain (Swinburn et al., 1999; Vitale & Doherty, 2018). In fact, several reviews have shown that the food environment is associated with health-related outcomes such as diet quality (e.g., Engler-Stringer et al., 2014) and overweight/obesity (e.g., Cobb et al., 2015; Osei-Assibey et al., 2012) in children and adolescents. One systematic review ($n = 26$ studies) examined the relationship between children’s and adolescents’ (aged 0-18 years) diets and the community and consumer food environment (Engler-Stringer et al., 2014). The majority of articles included in the review (22/26) reported one or more positive correlations between a dietary outcome (e.g., fruit and vegetable intake, diet quality, SSB intake, ‘junk food’ intake, etc.) and the food environment (Engler-Stringer et al., 2014). Specifically, dietary outcomes were associated with presence of food outlets as well as the healthfulness, pricing, and availability of certain foods, such as

fruits and vegetables, at these food outlets. For example, some studies in the review found that frequency of fast food consumption was positively associated with density of fast food establishments in the area, and that shorter distances from grocery stores was related to higher diet quality scores (Engler-Stringer et al., 2014). More recently, Sim (2019) completed a Master's thesis which examined the relationships among community food environments, weight status, and dietary quality in children aged 10-11 ($n = 851$) living in Alberta, Canada (Sim, 2019). Sim's findings showed that schools with a greater proportion and overall number of unhealthy food outlets within a 1600-metre radius were correlated with lower self-reported diet quality, as measured by the Diet Quality Index-International and the Youth Healthy Eating Index, among children (Sim, 2019).

One aspect of the food environment—namely, the settings in which children spend their time and consume foods and beverages when outside of the home—has also been investigated widely and is worthy of consideration (Hofferth & Sandberg, 2001; Mullan, 2019; Paleti et al., 2011). Children typically spend time in a variety of settings, including home, school, childcare, and/or sport and other extracurricular environments, all of which have been identified as important settings from childhood diet quality and food environment perspectives (Hoelscher et al., 2013). These settings have been divided into subcategories by researchers based on location; contexts such as home, school, and 'away from home' have been foci of previous research related to the child food environment (e.g., Hofferth & Sandberg, 2001; Mullan, 2019; Paleti et al., 2011).

A seminal paper authored by Glanz et al. (2005) proposed that the food environment is comprised of the organizational environment (e.g., school, home, workplace, etc.), the wider community environment (e.g., access to food outlets), the

consumer environment (e.g., access to certain types of foods within those outlets; Glanz et al., 2005), and the media environment (e.g., advertising). These distinct aspects of the food environment have been studied quite extensively in the context of children, specifically with regard to the school setting (Driessen et al., 2014; Micha et al., 2018), food advertising exposure (Boyland et al., 2016; Boyland & Whalen, 2015; Sadeghirad et al., 2016), the food retail environment surrounding schools and homes (da Costa Peres et al., 2020; Minaker et al., 2016), child food purchasing behaviour (Hermans et al., 2020; Sadler et al., 2016), and access to healthy menu options (Sacco et al., 2017; Swartz et al., 2011).

One important field of study within the wider child food environment literature is a category labeled '*food away from home*' (FAFH; Dehghan et al., 2005; Tugault-Lafleur et al., 2018; Ziauddeen et al., 2018). While a cohesive definition for FAFH does not currently exist within the literature, study authors have defined FAFH as any food (or beverage) *prepared* outside of the home, regardless of actual eating location; thereby including foods and beverages from fast food and takeout establishments, restaurants, school cafeterias, convenience stores, and other people's homes. This is in contrast to at-home foods, which are prepared in the home and typically purchased at grocery stores and other food retail locations (Guthrie et al., 1999; Janssen et al., 2018). Foods obtained outside of the home (i.e., FAFH) are typically readily available, low-cost, calorie-dense, and provided in large portion sizes (Alexina & Murphy, 2019; Caillavet et al., 2018; Eyles et al., 2018; Hill & Peters, 1998); thus, they typically provide more energy, sodium, and sugar, and fewer nutrients than foods prepared within the home (Alexina & Murphy, 2019; Eyles et al., 2018; Guthrie et al., 1999; Vercaemmen et al., 2019).

A growing number of studies have shown that FAFH is correlated with lower quality diets in children and adolescents (Mancino, Todd, Guthrie, & Lin, 2010; Tugault-Lafleur, Black, & Barr, 2018; Veugelers, Fitzgerald, & Johnston, 2005). In 2005, Veugelers and colleagues conducted a study to examine factors contributing to poor diet quality among children in Nova Scotia, Canada ($n = 5,200$, aged 10-11). The results showed that children who self-reported skipping meals and purchasing food from school and off-campus locations, using an adapted Food Frequency Questionnaire, were significantly more likely to consume overall poor-quality diets (Veugelers et al., 2005). More recently, another Canadian study echoed Veugelers and colleagues' findings, using 24-hour dietary recall data from the 2004 CCHS, showing that 11.6% of children and adolescents ($n = 4,589$, aged 6-17) obtained their lunches off-campus (Tugault-Lafleur, Black, & Barr, 2018). Specifically, Tugault et al. found that while participants' diets were poor in quality overall, diet quality differed by source of food at lunch-time among some age groups; in particular, those aged 9-17 who reported consuming foods/beverages from away-from-home locations at lunch had significantly lower diet quality scores than those who ate packed lunches (Tugault-Lafleur, Black, & Barr, 2018). A large American study conducted by the U.S. Department of Agriculture used two large nutrition-related data sets from 1994-1996 and 2003-2004 ($n = 5,285$ children and adolescents aged 6 to 18 years) containing 2-day dietary recall data to explore the impact of FAFH on diet quality (Mancino et al., 2010). These researchers found that FAFH and foods from school contributed significantly more calories per meal than foods prepared at home; FAFH also had a significant negative impact on diet quality among older children (i.e., aged 13 to 18 years) (Mancino et al., 2010).

The documented detrimental impact of FAFH on children's nutrition is particularly problematic given that globally, FAFH has been found to be a major source of energy during childhood and adolescence (e.g., Guthrie et al., 2002; Lachat et al., 2012; Watts et al., 2017). For example, a systematic review conducted by Lachat and colleagues (2012) examined the relationship between dietary intake and FAFH consumption, based on both source of food (i.e., where the food was prepared) and location of consumption. Of the 29 studies included in the review, 12 provided data pertaining to children and adolescents. While the studies included in this review did not lend to firm conclusions about the impact of FAFH on youth's diets, they found that FAFH from fast-food establishments and restaurants comprised between 5 and 15% of children's total daily energy intake (Lachat et al., 2012). These studies showed that FAFH was an important source of energy for adolescents, with schools representing the most common source of this food (Lachat et al., 2012). One widely-cited American study found that in a nationally-representative sample of children and adolescents aged 4-19 years ($n = 6,212$), 30.3% of the sample reported consuming fast food on at least one of two days in which a 24-hour dietary recall was administered (Bowman et al., 2004).

In terms of the settings in which FAFH are most likely to be consumed, Mancino and colleagues (2010) reported that when eating outside of the home environment, children and adolescents (aged 6-18) were most likely to obtain foods and beverages at school, fast-food establishments, and restaurants (Mancino et al., 2010). With regard to the school setting specifically, research has shown that children consume between one-third and one-half of their energy during the school day, and the school lunch hour accounts for about one-quarter of the daily calories consumed by children in Canada

(Briefel et al., 2009; Poti & Popkin, 2011; Tugault-Lafleur & Black, 2020). Given that the school food environment is associated with child health behaviours such as consuming and purchasing calorie-dense, low-nutrient foods (Briefel et al., 2009; Driessen et al., 2014; Micha et al., 2018), and that children who attend schools with less healthful food environments have been found to have greater adiposity levels (e.g., Fitzpatrick et al., 2017), the school setting is important to consider as an influential away-from-home food location for young people.

In addition to schools, consumption of FAFH from fast-food establishments and full-service restaurants has also been found to be correlated with greater energy intake and lower diet quality in children and adolescents (Bowman et al., 2004; Goffe et al., 2017; Mancino et al., 2010; Powell & Nguyen, 2013). The previously mentioned study conducted by Bowman and colleagues (2004) found that children who ate fast food on at least one of two dietary recall days consumed more SSB, more total calories, more fat, and more added sugars per day than those who did not consume fast food. More recently, a Canadian study, conducted using 24-hour dietary recall data from the 2008 CCHS, showed that an average of 17% of adolescents' (aged 12-19 years) usual daily energy intake was from fast food, which was noted to be much higher than the national average of 6.3% for all age groups (Black & Billette, 2015).

Studies have also addressed children's and adolescents' consumption of FAFH outside of the more 'typically' studied away-from-home settings, focusing on locations such as the homes of friends and relatives (e.g., Ayala et al., 2008; Cohen et al., 2012). For example, a study conducted in California found that Latinx children's ($n = 708$, aged 4-7) consumption of foods and beverages at neighbours', friends', and/or relatives'

houses at least once per week was associated with a greater risk of obesity, based on parent-reported data (Ayala et al., 2008). These researchers also found that consumption of foods and beverages in these settings one or more times per week was associated with greater intake of SSB than those who ate at neighbours', friends', and/or relatives' homes less often (Ayala et al., 2008). A more recent Australian study conducted by Jongenelis et al. (2018) explored grandparents' roles ($n = 1,067$) in food provision to children aged 3-14 years. These researchers found that 82% of grandparents who cared for their grandchildren for at least 3 hours per week reported provided their grandchildren with snacks, while 18% reported providing their grandchildren with meals while in their care. The majority of foods provided were reported by grandparents, via an online survey, to be healthy (e.g., fresh fruit), but grandparents also reported providing their grandchildren with sweet snacks almost once per week, on average (Jongenelis et al., 2018).

To date, much of the FAFH research conducted with children and adolescents has focused on family meals away from the home but *within parental supervision* (e.g., family meals at restaurants and fast food establishments; Boutelle et al., 2007; Fulkerson, 2018; Fulkerson et al., 2011; Neumark-Sztainer et al., 2014), or on child and adolescent food purchasing behaviours (e.g., Thompson et al., 2004; Tugault-Lafleur & Black, 2020). However, relatively little is known about the contexts and frequency in which children receive and consume foods and beverages from sources *other than* their parents (e.g., from teachers, health professionals, coaches, other family members, etc.), or about the quantity and types of foods and beverages provided. Several studies do address the foods and beverages provided to children from non-parental sources, including (but not limited to) those provided at birthday parties, during visits with family members, at

school events, doctors' offices, and extracurricular activities, which may be provided to children outside of parental knowledge and/or control (Ayala et al., 2008; Eck, Delaney, & Olfert et al., 2019; Eck, Delaney, Byrd-Bredbenner, et al., 2019; Eck et al., 2018; Jongenelis et al., 2018).

One study, conducted by Eck et al. (2018), explored parent ($n = 37$) and child ($n = 41$, aged 6-11 years) attitudes towards SSB consumption using focus groups (Eck et al., 2018). While the focus of this study was broad, it did acknowledge non-parental provision of SSB to children, primarily in relation to specific locations and events. Findings showed that parents noted concerns about the widespread provision of SSBs to children, as well as a lack of healthy alternatives at school-related activities such as sporting events. Eck and colleagues (2018) also reported that parents indicated that SSBs were regularly served at birthday parties, celebrations, extracurricular activities, and other social events. Interestingly, some parents acknowledged that while they did not provide their children with SSBs themselves, they did allow them to consume SSB at special events, describing the occasional consumption as acceptable. One parent noted that, "*they eat pretty healthy for the most part at home, so when they go out, I try to give them some room to eat whatever they want. It is not very often they get to do that*" (Eck et al., 2018, p. 1172). Child participants in the study also confirmed that they received SSBs at parties, special occasions, and on holidays (Eck et al., 2018). This study focused largely on the *provision* of SSBs to children from non-parental sources, but also included more general cognitions, such as parents' feelings towards providing their children with SSBs and strategies to reduce their children's consumption of these beverages (Eck et al., 2018).

In 2019, Eck and colleagues published an additional qualitative study using focus groups as well as a conference abstract related to a second qualitative study (Eck, Delaney, & Olfert, 2019; Eck, Delaney, Byrd-Bredbenner, et al., 2019). The first consisted of focus groups conducted separately with parents ($n = 37$) and children (aged 6-11; $n = 35$) to explore parental attitudes towards foods and beverages consumed by children outside of parental supervision (Eck, Delaney, & Olfert, 2019). Eck et al. noted that parents reported feelings of concern about their lack of control over the consumption of these foods and beverages by their children (Eck, Delaney, & Olfert, 2019). Notably, this study was focused on the *consumption* of foods and beverages rather than their *provision*, so this study also included foods and beverages that children purchased or otherwise sought out on their own (Eck, Delaney, & Olfert, 2019). Additionally, this study explored parental attitudes about eating away from home overall, which included family meals outside of the home (but within parental supervision). Parents were also found to have varying attitudes towards children eating outside of parental supervision; that is, whereas some parents expressed concern about food/beverage consumption outside of the home, others seemed less concerned, focusing instead on the infrequency of such occasions and the healthfulness of their children's overall diet (Eck, Delaney, & Olfert, 2019). Some parents mentioned being aware that their children traded snacks with their peers at school, and that they received unhealthy foods and beverages at friends' and relatives' homes, as well as during childcare. Further, parents reported that they tried to educate their children about nutrition in an effort to equip them to make healthy choices when outside of parental supervision (Eck, Delaney, & Olfert, 2019).

The second qualitative study, as described in a conference abstract (Eck, Delaney, Byrd-Bredbenner, et al., 2019), aimed to explore parental attitudes towards snacks provided to children outside of the home, again focusing on food *provision* rather than consumption. More specifically, this study addressed snacks provided to children from non-parental sources. Focus groups were conducted, including 37 parents of children aged 6-11 years. Parents in the study noted that children were frequently provided with snacks at events outside the home. They also indicated that as parents, they felt that it was unrealistic, and somewhat unimportant, to expect that children would choose to consume only healthy snacks at away-from-home events (Eck, Delaney, Byrd-Bredbenner, et al., 2019). In the role of non-parental food/beverage provider (i.e., when responsible for feeding others' children), parents identified numerous barriers to providing healthy snacks, including palatability, cost, food allergies, and extra steps (e.g., refrigeration, preparation, etc.) required to prepare and provide healthy snacks to other children (Eck, Delaney, Byrd-Bredbenner, et al., 2019).

As noted above, a small number of studies have explored the foods and beverages provided to children from non-parental sources including grandparents (e.g., Jongenelis et al., 2019), peers/friends (e.g., Cohen et al., 2012), and relatives (e.g., Ayala et al., 2008). While they represent important contributions to the literature in this area, these studies have not captured or assessed additional possible contexts in which foods and beverages are provided to children from non-parental sources (e.g., during extracurricular activities, special events, visits with healthcare professionals, etc.), additional potential sources (e.g., from school staff, extracurricular leaders and coaches, religious leaders, etc.) and the types of foods provided in these contexts and from these sources. Further,

although recent qualitative studies have explored parental attitudes towards foods and beverages consumed by and provided to children outside of parental supervision (Eck et al., 2018; Eck, Delaney, & Olfert, 2019; Eck, Delaney, Byrd-Bredbenner, et al., 2019), additional insights—including quantitative or mixed-methods examinations—into the frequency and types of foods and beverages that are *provided* to children (rather than *consumed* by children) *outside* of parental supervision (rather than regardless of parental presence) are warranted.

An important additional consideration that is pertinent to the current study is that data collection took place during the early stages of the COVID-19 pandemic in Ontario, Canada (i.e., May-June, 2020). Many studies have explored the ‘early’ effects of the pandemic on overall health and wellbeing, including health behaviours such as physical health and nutrition (e.g., Ammar et al., 2020; Naja & Hamadeh, 2020). Research appears to suggest that health behaviours have been negatively impacted by pandemic-related isolation (Ammar et al., 2020; Naja & Hamadeh, 2020) and that globally, eating behaviours and food consumption have been found to be less healthy overall (Ammar et al., 2020). Indeed, some of these pandemic-specific nutrition behaviours—including food hoarding (and consequent food shortages) and irregular eating patterns—have been found to be related to adverse mental and physical health effects in people of all ages (Naja & Hamadeh, 2020). In an effort to be prepared and to limit frequency of grocery shopping, families in the United States have reported increasing intake of foods with long shelf-lives, which tend to be calorie-dense and highly processed, thereby reducing overall health and increasing the risk of developing childhood overweight and obesity (Rundle et al., 2020). In addition, many studies have focused on the negative impact of the pandemic

on food-insecure families that rely upon school meal and food programs targeting child hunger (Abrams et al., 2020; Buheji et al., 2020; Dunn et al., 2020; Dutta, 2020; Niles et al., 2020). According to two American studies, food insecurity has worsened during the pandemic, and many adults have lost jobs, further exacerbating the issue; adult members of food-insecure families have cited experiencing emotional concerns in relation to this issue (Abrams et al., 2020; Niles et al., 2020).

Generally speaking, food-related habits seem to be changing as a result of COVID-19. One recent study found that Canadians have reduced their FAFH spending by almost 30% as a result of the pandemic, with a shift in funds directed to food retail (e.g., grocery stores) rather than ‘eating out’ (Goddard, 2020). As a result, it could be presumed that the family food environment, as well as the overall dietary habits of children, might also be altered as a result of—among other important social and personal factors related to the pandemic—more time at home due to school closures, isolation, financial considerations, food availability, and social/physical distancing. As such, and as noted below, this study also aimed to explore the family food environment and parents’ view of their children’s eating habits (and the provision of foods/beverages to children from non-parental sources) during the COVID-19 pandemic as a related secondary research question.

The primary purpose of this exploratory study was three-fold: (1) to assess parent and child estimates of the frequency of food and beverage provision to children from non-parental sources in general; (2) to measure child-reported frequency of provision: (a) in different settings; (b) by source; (c) by type of food/beverage, and (d) at various special events or occasions; and (3) to explore parents’ attitudes towards and awareness

of foods and beverages provided to children from non-parental sources. As noted above, a secondary purpose of the study was to examine parental views of the family food environment and children's dietary patterns during the COVID-19 pandemic. No a priori hypotheses were advanced due to the exploratory nature of the study.

Chapter 2

2 Methods

2.1 Study Design

A cross-sectional, survey-based design was used to explore various factors related to the foods and beverages provided to children from non-parental sources. The survey, delivered online and consisting of a series of closed- and open-ended questions, was completed by a self-identified ‘primary parent’ and one to three of their eligible children. For the purpose of the present study, a ‘parent’ was considered to be any adult living in the same home as the child that has consistent feeding responsibilities for the child(ren), which could include, but was not limited to, parents, step-parents, and partners of parents.

2.2 Participants

2.2.1 Inclusion and Exclusion Criteria

Parents were eligible to participate in the study if: (a) they had a child or children in Grades 2-8 (and therefore between the ages of 7 and 14 years); (b) their child(ren) attended school outside of the home (prior to pandemic-related school closures); (c) they were able to speak, read, and write in English; (d) they could communicate clearly with their child(ren); (e) they lived in Ontario, Canada; and (f) they provided consent, and their eligible child(ren) provided assent, to participate in the study. Families were ineligible for study participation if: (a) they did not have one or more children within the designated grade and age range; (b) the child(ren) did not attend school outside of the home prior to the COVID-19 pandemic (i.e., their children were homeschooled); (c)

parents were unable to speak, read, and write in English; (d) parents were unable to communicate clearly with their child(ren); (e) they lived outside of Ontario, Canada; or (f) the parent participant and at least one of their eligible children did not provide consent and assent, respectively, to participate in the study.

With regard to the target grade and age range of children for this study, Livingstone and Robson (2000) have suggested that children's ability to self-report their food intake improves throughout childhood, and increases substantially at approximately eight years of age (i.e., Grades 2/3). As this study relied upon children's abilities to recollect and report the foods and beverages provided to them from non-parental sources, only families with children old enough to report accurately were included. Insofar as the upper grade and age limit is concerned, because high school students tend to have more autonomy over their food choices than elementary school students (e.g., Engler-Stringer et al., 2016; Rideout et al., 2007), only children up to Grade 8 (i.e., the last year of elementary school in Ontario) were included in the study. Further, given that the food environment differs in Canadian elementary schools versus high schools (Browning et al., 2013; Velazquez et al., 2015), and that the current study addresses the foods and beverages provided to children from others (rather than foods purchased or selected by children themselves), elementary school students were targeted in an effort to keep the level of independence as uniform as possible. Children were required to attend school outside of the home because children receiving homeschooling presumably spend much more time in the home, and are therefore less likely to receive foods/beverages from non-parental sources. The ability to read, speak, and write in English was necessary for parents given that all materials (e.g., recruitment materials, letters of information, online

survey) were provided in English. Children were required to be able to communicate clearly, in any language including written communication and/or American Sign Language, with the parent participant; those not able to communicate clearly with the participating parent were excluded to maintain integrity in self-reporting. Finally, as Canada does not have a national school food program, only families living in Ontario were targeted given the different food-related policies and guidelines in place across the country (e.g., Hanning et al., 2019).

2.2.2 Recruitment

Recruitment took place over a two-month period (i.e., May-June, 2020). Parents (rather than children) were the primary targets of study recruitment efforts and materials, which consisted primarily of social media posts (i.e., Facebook and Instagram; see Appendix A for the social media post). Word of mouth and snowball sampling were also used to recruit families; specifically, potential parent participants were encouraged to inform other parents they knew that might be interested in the study. All recruitment materials included the contact information of the Program Coordinator (EK) and Principal Investigator (SB). The full study protocol, including recruitment posts, were approved by the Non-Medical Research Ethics Board at Western University (REB #: 115551; see Appendix B for ethics approval letter).

2.3 Measures

The current study consisted of a one-time online survey hosted on the Qualtrics platform (Qualtrics, Provo, UT; version June 2020, © 2020 Qualtrics). As noted above, the self-identified ‘primary parent’ was asked to complete the survey with the assistance

of up to a maximum of three eligible children; as such, the amount of time required to complete the survey depended on how many children were assisting. If parents participated with more than one child, the survey questions reflected the number of children included in the survey (i.e., the questions were adjusted and ordered automatically using Qualtrics based on an initial question about the eligible number of children; see Appendix C for the full survey). All survey questions and definitions used throughout were developed by the research team on the basis of existing FAFH literature (e.g., Eck, Delaney, & Olfert, 2019) and for the specific purposes of the present study.

The online survey consisted of four sections. The first, a demographic information section, consisted of nine questions used to gather child characteristics (e.g., food allergies/restrictions, date of birth, height, and weight; the latter three used to calculate age and standardized body mass index [BMI-z], etc.) and 13 questions related to parent and family characteristics (e.g., parent date of birth and gender information, parent height and weight for body mass index [BMI] calculation purposes, employment, education, annual household income, etc.).

The second section was designed to assess overall parent- and child-reported frequency of food/beverage provision to children from non-parental sources, as well as the frequency of provision based on location/setting, source, type of food/beverage, and special events or occasions (these subsections are discussed in further detail below). This section contained two questions regarding overall child- and parent-perceived weekly frequency of non-parental food/beverage provision, followed by four multi-part questions, to be completed with the assistance of the child(ren), pertaining to the locations/settings, sources, food/beverage types, and special events/occasions from/at

which foods and beverages were provided to child(ren) from non-parental sources. In an effort to enhance participant clarity and consistency, evidence-based explanations for and definitions of ‘parent’ (noted above) and ‘non-parental foods and beverages’ (i.e., foods and beverages provided to children from people who are NOT parents, which may include foods and beverages provided inside OR outside of the child(ren)’s home, whether or not a parent is present) were provided to parents, complete with examples, throughout the survey. In addition, because this survey was completed during the COVID-19 pandemic, explicit instructions to answer questions with a ‘typical’ (i.e., pre-pandemic) schedule in mind were included throughout the survey.

2.3.1 Frequency Measures

2.3.1.1 Overall Frequency of Food and Beverage Provision from Non-Parental Sources

This survey section consisted of two questions; one to be answered by the parent and one to be answered by the child. The first asked parents: “*According to you, and without asking your child, approximately how many times per week do you believe that CHILD #1 was provided with any foods or beverages from somebody other than a parent (before COVID-19)?*”. The second question was similar to the first, but focused on the child(ren): “*Similar to the previous question, but this time according to CHILD #1, how many times per week did somebody other than their parent(s) provide them with any foods or beverages (before COVID-19)?*”.

2.3.1.2 Settings/Locations

In this multi-part question, parents were asked to indicate, with their child(ren)'s assistance, how many times per week children were provided with foods/beverages from non-parental sources in 18 different locations, plus a space to indicate any "other" settings, before the COVID-19 pandemic. Example locations included various school settings, friends', neighbours', and relatives' homes, and extracurricular locations (e.g., sports, arts, etc.). Please see Appendix C for additional survey details.

2.3.1.3 Sources

For this multi-part question, parents were asked to work with their child(ren) to indicate how many times per week children were provided with foods/beverages from non-parental sources from 12 categories of sources, plus a space to indicate any "other" sources not listed. Example sources of non-parental food and beverage provision included peers, parents of friends, coaches, teachers, school staff, and relatives.

2.3.1.4 Food and Beverage Type

Parents were also asked to answer a multi-part question, with the assistance of their child(ren), pertaining to how many times per week children were provided with various foods and beverages from non-parental sources. A total of 28 different food and beverage categories (with examples of individual food/beverage items) were presented, along with a space to indicate any "other" foods/beverages not listed. Example food categories included fresh/frozen fruit, fresh/frozen vegetables, grain-based snacks, granola bars, baked foods, cheese, chocolate, candy, and ice cream.

2.3.1.5 Special Events/Occasions

The multi-part question addressing special events and occasions instructed parents to work with their child(ren) to indicate how many times per year they were provided with foods/beverages from non-parental sources. A total of 10 different special events and occasions were listed, again, with a space to indicate any “other” events not listed. Example occasions included birthday parties, school field trips, vacations, and sleepovers. Annual (i.e., per year) response options were provided rather than the weekly response options used in the previous questions, given the perceived ease of recall and frequency of special events in comparison to the more commonly occurring ‘typical’ (e.g., school or relative) food and beverage provision scenarios.

2.3.2 Parental Attitudes and Awareness Regarding Food and Beverage Provision from Non-Parental Sources

The third section of the survey was designed to evaluate parental attitudes towards and awareness of foods and beverages provided to children from non-parental sources. It consisted of eight questions, directed to parents, that addressed parental concerns about and the importance of being aware of the foods and beverages provided to their child(ren) from non-parental sources. Several of these questions were adapted from a focus group guide used in a recent study investigating parent and child cognitions pertaining to food away from home consumption among children (Eck et al., 2019). Five questions were formatted using a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), followed by two questions rated on a scale from 0 to 100%. The final question in this section was asked in the form of an open-ended question with a text box for responses.

2.3.2.1 Parental Attitudes

Likert-scale questions that addressed parental attitudes included statements such as *“I am concerned about the foods and beverages provided to my child(ren) from non-parental sources.”* The single open-ended question in this section asked parents to provide additional comments and thoughts they wanted to share about the foods and beverages provided to their child(ren) from non-parental sources.

2.3.2.2 Parental Awareness

Likert-scale questions that addressed parental awareness included items such as *“It is important to me that I am aware of the foods and beverages provided to my child(ren) from non-parental sources.”* The two questions rated on the scale from 0-100% addressed parental awareness of provision of foods/beverages to children from non-parental sources as follows: *“Approximately what percentage of the foods and beverages provided to your child(ren) from non-parental sources were you aware would be provided to them ahead of time?”* and *“After discussing this issue with your child(ren), approximately what percentage of the foods and beverages provided to your child(ren) from non-parental sources would you say your child(ren) inform(s) you about?”*.

2.3.3 Children’s Eating Behaviours During the COVID-19 Pandemic

The fourth and final section of the survey consisted of a single question related to COVID-19 and the implications of the pandemic on children’s food choices. Specifically, this open-ended question asked parents to: *“Tell us how the ongoing COVID-19 pandemic has impacted the foods and beverages provided to and consumed by your child(ren), inside and/or outside of the home and from any source (i.e., parents and/or non-parents).”*

2.4 Procedures

The link to the online survey, along with the Program Coordinator's contact information, was provided in all electronic recruitment materials and posts, which were publicly available (see Appendix A for recruitment materials). Potential participants were invited to click on the survey link, where they were asked five initial screening questions based on study inclusion criteria (i.e., confirming that they had child(ren) enrolled in Grades 2 to 8 in Ontario; their child(ren) wished to participate in the study; their children attended school outside of the home prior to the pandemic; were able to speak, read, and write in English; and they were able to communicate with their children, written or verbally in any language). If the potential participants were deemed eligible, they were automatically directed to the letter of information (LOI; see Appendix D). After reading the LOI, parents were asked to provide consent for themselves and their child(ren) to participate in the study. Child assent was also required for this study, given that children were asked to assist with and answer several survey questions. As such, following the provision of parental consent, parents were directed to another survey page containing a Child Assent Script (see Appendix E), which they were asked to read to their participating child(ren). Child participants were then asked to provide informed assent by checking two boxes; one to confirm that they had had the assent script read to them by their parent, and another to provide assent to participate. The Qualtrics settings were adjusted to ensure that participants could not proceed to the next part of the survey without providing informed consent and assent. If participants provided consent, they were directed to the main portion of the survey (described above). A unique participant ID was created for each family participant group using Qualtrics. Given the anonymous

nature of the survey, participants were asked to record their participant ID in the event that they would like to withdraw their data from the study.

2.5 Data Analysis

For the purposes of data analysis, data were transferred from Qualtrics into Microsoft Excel, using Participant ID numbers. Only the primary researcher (EK), the Principal Investigator (SB), and a research team member assisting with qualitative analyses (e.g., a second coder) had access to the survey data. Participants were excluded from the analyses if they did not complete any of the questions regarding food and beverage provision (i.e., if they answered only demographic questions). Data were cleaned and sorted by the primary researcher (EK) in Microsoft Excel.

2.5.1 Demographic Information

As noted above, parent demographic information such as relationship to participating child(ren), age, weight, height, gender, sex, education level, ethnicity, marital status, employment status, household income, presence of non-parent adults living in the child(ren)'s home, and geographic location for adults was collected. Most of these data were analyzed by calculating frequency (and percentages) in Microsoft Excel; in some cases, responses were collapsed into broader categories (e.g., household income categories). Mean age (and standard deviation) was also calculated in Microsoft Excel, and parent-reported height and weight values were used to calculate BMI categories according to the Centers for Disease Control and Prevention (CDC) guidelines for body weight classification (which align with Health Canada guidelines; Centers for Disease Control and Prevention [CDC], n.d.; Health Canada, 2018).

Child demographic data included birth date, grade, height, weight, gender, sex, and dietary restrictions/food allergies. Frequencies were calculated in Microsoft Excel for child gender, sex, grade, and dietary restrictions; mean age (and standard deviation) was also calculated. Participant-reported height, weight, and date of birth information was used to calculate standardized BMI (i.e., BMI- z) values for children using the Children's Hospital of Philadelphia's Pediatric Z-Score Calculator (The Children's Hospital of Philadelphia, n.d.). Z-scores were then classified in accordance with CDC guidelines (CDC, 2018).

2.5.2 Food and Beverage Provision Frequency

Data pertaining to the overall frequency of food and beverage provision were analyzed by frequency (i.e., percentage) of each response (e.g., one time per week, two times per week, etc.) using Microsoft Excel. *Location/setting* data were analyzed by frequency of responses for each setting option listed in the survey. Some individual survey items (for settings, and also for non-parental food sources, food/beverage type, and special events/occasions) were collapsed into broader categories in order to present the data more clearly and succinctly. For example, the survey contained several locations within the school setting where foods and beverages could be provided to children (e.g., classroom, school office, etc.); these were collapsed into the more general location category of 'school'. As such, the following categories were used to represent location/setting: 'school' (includes the classroom, gymnasium/assembly area, school offices, and afterschool events); 'other people's homes' (includes friends' houses, neighbours' houses, and relatives' houses); 'extracurricular activities' (includes athletic and other extracurricular activity locations); 'childcare' (includes childcare both within

and outside the child's home); 'restaurants' (includes quick-serve and full-serve restaurants); and 'other' (includes healthcare settings, transportation [e.g., in cars], and 'other').

Source of food and beverage provision was also analyzed by frequency of responses in Microsoft Excel. Source items were aggregated into the following categories: 'friends/neighbours' (includes parents of friends/family friends, and neighbours); 'extracurricular leaders' (includes coaches/sport instructors and other extracurricular leaders); 'school staff members' (includes teachers and other school staff members); and 'relatives' (includes grandparents and other relatives).

With regard to food and beverage *type*, child-reported frequency of provision of specific food and beverage items was analyzed in Microsoft Excel. The survey terms pertaining to types of foods and beverages were collapsed into the following food categories, with the assistance of a Registered Dietician: 'fruits and vegetables' (includes fresh and frozen fruits and vegetables and dried/baked fruits); 'processed snacks' (includes fried vegetables, grain-based snack foods, and granola bars); 'grain products' (includes bread products and grain-based breakfast foods); 'dairy and alternatives' (includes yogurt/kefir, cheese, and sweetened and unsweetened milk and milk alternatives); 'meat and alternatives' (includes deli meats, nuts and seeds, legume-based foods, and egg products); 'sugary foods' (includes baked goods, chocolate, candy, and frozen desserts); 'sugar-sweetened beverages' (includes energy and sport drinks, fruit juice, and other sugar-sweetened beverages such as soft drinks and hot chocolate); and 'meals' (includes sandwiches/wraps, grain-based meals, and other home-cooked meals). Additionally, for all of the above-listed frequency data, the researcher collapsed the

individual response options into the following categories: ‘never,’ ‘less than once per week,’ ‘1-3 times per week,’ ‘4-6 times per week,’ and ‘7 or more times per week.’

For special events/occasions, frequency of food/beverage provision from non-parental sources was analyzed by frequency of responses in Microsoft Excel. The only aggregated category was ‘party,’ which included class parties, birthday parties, and ‘other’ parties. Other events included fundraisers, field trips, concerts, athletic events, theatre events, vacations, sleepovers, and other occasions. The following aggregated frequency categories were utilized for the annual response options: ‘never,’ ‘less than once per year,’ ‘1-4 times per year,’ ‘5-8 times per year,’ ‘9-12 times per year,’ and ‘more than 12 times per year.’

In addition to the above-noted data aggregations, created to enhance ease of data interpretation and visual (graph) presentation, the researcher collapsed the percentage of children indicating they receive a food or beverage *one or more times per week* by location/setting, source, food/beverage type (i.e., the percentages of children indicating they received a food/beverage from a specific source, such as a teacher, one or more times per week on average, were summed). The same calculation was completed for annual frequencies, being completed both for ‘one or more times per year’ and ‘five or more times per year’ category.

The Likert scale data regarding parental attitude/awareness were analyzed by frequency of responses for each response option (i.e., percentage of those who disagreed, agreed, etc.) as well as by calculating means and standard deviations using the numerical

Likert responses (i.e., *strongly disagree* = 1; *strongly agree* = 7). For the questions rated on a scale of 0-100%, means and standard deviations were also calculated.

2.5.3 Qualitative Data

As noted above, two open-ended text box questions were included in the survey; one asking parents to elaborate on any thoughts and feelings they had in regards to food and beverage provision from non-parental sources, and the other asking parents how the provision and consumption of foods and beverages to/by children had changed during the COVID-19 pandemic. The data from these two survey questions were analyzed separately using an inductive, data-driven approach (Braun & Clarke, 2006). More specifically, thematic analyses was conducted in accordance with the six steps outlined by Braun and Clarke (2006). Following these steps, the primary investigator (EK): (1) read through all participant responses to become familiar with the data, reviewing the online text submitted by parent participants repeatedly; (2) generated a long initial list of *codes* based on items of interest found in the data sets, colour-coding items manually when patterns emerged; (3) analyzed codes and identified overarching *themes* and more specific *subthemes*, organizing the codes into tables; (4) reviewed the themes and removed and/or edited any themes that did not fully and accurately represent the data set; (5) determined names for the themes, using the data sets to guide the labels; and (6) presented the data through tables and via written summaries of the themes and subthemes, and by choosing representative quotes to illustrate these ideas. The primary researcher and a second coder (ND) completed steps one through three; after identifying themes individually, the two reviewers discussed findings with a third researcher (SB). All reviewers collaborated to discuss and refine the final themes and subthemes. The

primary investigator chose relevant quotes from the raw data to illustrate themes and subthemes. Several measures were taken to increase the trustworthiness of the data, in accordance with Lincoln and Guba's (1986) recommendations. For example, the thematic analysis was discussed with peers with qualitative research experience to enhance confirmability, and detailed descriptions of the population and context in which this study was conducted were provided in an effort to enhance transferability. Additionally, peer-debriefings between the author and another researcher took place regularly, which enhances dependability (Connelly, 2016; Lincoln & Guba, 1986; Shenton, 2004). Given the method of obtaining qualitative data used in the current study (i.e., recruiting through a convenience sample and administering open-ended questions via an online, anonymous survey), it was not feasible to implement additional measures to ensure credibility and/or authenticity.

Chapter 3

3 Results

A total of 74 participants ($n = 30$ parents and 44 children) completed the online survey. Additional family groups that met eligibility criteria and provided consent and assent began the survey, but did not provide sufficient data; of these 15 families, seven completed some demographic information and eight did not respond to any questions. Most parent participants ($n = 19$; 63.3%) completed the survey with only one child, while 10 parents (33.3%) participated with two children, and one parent (3.3%) participated with three children.

3.1 Parent and Family Demographic Information

Parent participants were mostly female ($n = 26$; 89.7%), with the remaining 13.8% identifying themselves as male ($n = 4$). Of the 24 parents that identified their relationship to their child(ren), most parent participants described themselves as ‘mother’; the remaining 2 (8.3%) referred to themselves as the child(ren)’s father. The mean age of the parent participants was 44.7 years ($SD = 4.4$), with an age range of 34 to 57 years. All parents reported completing some form of postsecondary education, and most parents ($n = 24$; 80%) reported that they were married. When asked to describe their employment status before the COVID-19 pandemic, most parent participants reported being employed full-time ($n = 21$; 70%), and 21 (70%) reported a total annual household income of \$100 000 or more. With regard to body composition, parents’ average calculated BMI score was 24.8 kg/m² (‘normal’ category), with a range of 17.9 kg/m² (‘underweight’ category) to 35.5 kg/m² (‘obese class 2’ category). Most parents’ BMI scores ($n = 16$; 55.2%) fell within the range classified as ‘normal’ according to Canadian

and WHO guidelines (Centers for Disease Control and Prevention, n.d.; Health Canada, 2018).

With regard to family characteristics, most parents ($n = 27$; 93.1%) described their family's ethnicity as white. The majority of parents ($n = 26$; 86.7%) reported that the only adults living in their family home were their child(ren)'s parents. Parent-reported data also suggested that families lived primarily in Kitchener, Ontario ($n = 8$; 26.7%), London, Ontario ($n = 7$; 23.3%), and Waterloo, Ontario ($n = 6$; 20.0%). See Table 1 for additional adult and family demographic information.

Table 1: Self-Reported Demographic Characteristics of Parent Participants ($n = 30$)

Baseline characteristic	n (%)
Sex	
Male	4 (13.8)
Female	26 (89.7)
Gender	
Male	4 (13.8)
Female	26 (89.7)
Relationship to Child Participant	
Mother	22 (91.7)
Father	2 (8.3)
Education ^a	
College	6 (20.0)
University (undergraduate)	11 (36.7)
University (graduate)	11 (36.7)
Other	2 (6.7)
Ethnicity ^b	
White	27 (93.1)
Hispanic, Latinx, or of Spanish Origin	1 (3.4)

Southeast Asian	1 (3.4)
Persian	1 (3.4)
Marital Status	
Married and not separated	24 (80.0)
Separated	2 (6.7)
Divorced	3 (10.0)
Single, never married	1 (3.3)
Annual Household Income (\$ CAD)	
< 40 000 per year	1 (3.3)
40 000 – 59 999 per year	4 (13.3)
60 000 – 79 999 per year	2 (6.7)
80 000 – 99 999 per year	2 (6.7)
> 100 000 per year	21 (70.0)
Employment Status ^c	
Employed full-time	21 (70.0)
Employed part-time	6 (20.0)
Self-employed	2 (6.7)
Unemployed	2 (6.7)
BMI Classification ^d (kg/m ²)	

Underweight (>18.5)	1 (3.4)
Normal weight (18.6 – 24.9)	16 (55.2)
Overweight (25.0 – 29.9)	8 (27.6)
Obese Class 1 (30.0 – 34.9)	3 (10.3)
Obese Class 2 (35.0-39.9)	1 (3.4)
Obese Class 3 (<40.0)	0 (0.0)
Non-Parent Adults Living in Home	
None	26 (86.7)
Step-parent/partner of parent	2 (6.7)
Grandparent	1 (3.3)
Adult sibling of child	1 (3.3)
Geographic Location	
London, Ontario	7 (23.3)
Waterloo, Ontario	6 (20.0)
Kitchener, Ontario	8 (26.7)
Other Ontario cities/towns	9 (30.0)

Note. Participants had a mean age of 44.7 years ($SD = 4.4$).

^a Numbers do not add up to 100% because of rounding.

^b Numbers add up to more than 100% because several parents reported multiple races/ethnicities.

^c Numbers add up to more than 100% because several parents reported more than one employment status (e.g., self-employed and employed part-time).

^d BMI: body mass index, as classified by Centers for Disease Control and Prevention (CDC) guidelines (CDC, n.d.)

3.2 Child Demographic Information

The mean age of the child participants was 10.8 years ($SD = 2.0$; age range = 7-14 years; it should be noted that the three children who were 7 years of age were within 3 months of their 8th birthday). Children were close to evenly split by gender, with 16 (45.7%) reporting as female and the rest (54.3%; $n = 19$) reporting as male; all child participants' genders matched their parent-reported sex at birth. Most children were enrolled in Grade 5 ($n = 9$; 25.7%), ranging from Grades 2 to 8. The mean BMI- z score for child participants was -0.24 ($SD = 2.1$), with a range of -9.5 – 2.68; 25 children (78.1%) fell within the 'normal' weight range as determined using z -score percentiles (The Children's Hospital of Philadelphia, n.d.), 14 (12.5%) were classified as 'at risk of overweight,' and 3 (9.4%) were classified as 'overweight' (CDC, 2018). Most children ($n = 27$; 80.1%) did not have a food allergy and/or dietary restriction, although the most commonly reported was 'lactose-free' ($n = 4$; 11.1%). See Table 2 for additional child demographic information.

Table 2: Self-Reported Demographic Characteristics of Child Participants ($n = 44$)

Baseline characteristic	n (%)
Sex	
Male	19 (54.3)
Female	16 (45.7)
Gender	
Male	19 (54.3)
Gender	16 (45.7)
School Grade	
2	6 (17.1)
3	1 (2.9)
4	3 (8.6)
5	9 (25.7)
6	7 (20.0)
7	3 (8.6)
8	6 (17.1)
BMI- z^* Classification	
Underweight (<5 th percentile)	3 (9.4)
Normal weight (5 th – 85 th percentile)	22 (68.8)

At risk of overweight (85 th – 95 th percentile)	4 (12.5)
Overweight (>95 th percentile)	3 (9.4)
Dietary Restrictions and/or Food Allergies ^b	
None	27 (80.6)
Nut allergy	1 (2.8)
Lactose-free or cows-milk-free	4 (11.1)
Vegan	1 (2.8)
Gluten-free	2 (5.6)
Other	3 (8.3)

Note. Child participants had a mean age of 10.8 years ($SD = 2.0$).

^a BMI-*z*: standardized body mass index, calculated using the Philadelphia Children’s Hospital BMI-*z* calculation tool (The Children’s Hospital of Philadelphia, n.d.) and classified according to the Centers for Disease Control and Prevention guidelines (CDC, 2018).

^b Total for this category adds up to more than 100% because several children reported having more than one dietary restriction/allergy.

3.3 Foods and Beverages From Non-Parental Sources

The following sections will report on findings related to: (1) overall parent- and child-reported frequency of food/beverage provision to children from non-parental

sources; (2) parent- and child-reported frequency of food and beverage provision to children, based on location/setting (times per week), source (times per week), type of food/beverage (times per week) and special event/occasion (times per year); (3) parental awareness of and attitudes towards the foods and beverages provided to children from non-parental sources; and (4) parent descriptions of their children's eating behaviours since the start of the COVID-19 pandemic.

3.3.1 Overall Parent- and Child-Reported Frequency of Provision

The most frequently selected response option for both parents and children ($n = 11$ [26.8%] and 10 [24.4%] of participants, respectively) was that children received foods and/or beverages from non-parental sources approximately one time per week, on average. Following this, in order of frequency, 8 adults (19.5%) and 5 children (12.2%) estimated that children were provided with foods/beverages from non-parental sources an average of twice per week, and 7 adults (17.1%) and 5 children (12.2%) estimated three times per week. Taken together, these findings indicate that most parents ($n = 26$; 63.4%) and nearly half of children ($n = 20$; 48.8%) estimated that children were provided with foods/beverages from non-parental sources either one, two, or three times per week. Parents estimated this value for each of their participating children *individually*; as such, although there were only 30 parents in the study, parents provided responses for up to 44 children (number dependent on missing data). Figure 1 contains an overview of parent and child perceptions of weekly frequency of food and beverage provision to children from non-parental sources.

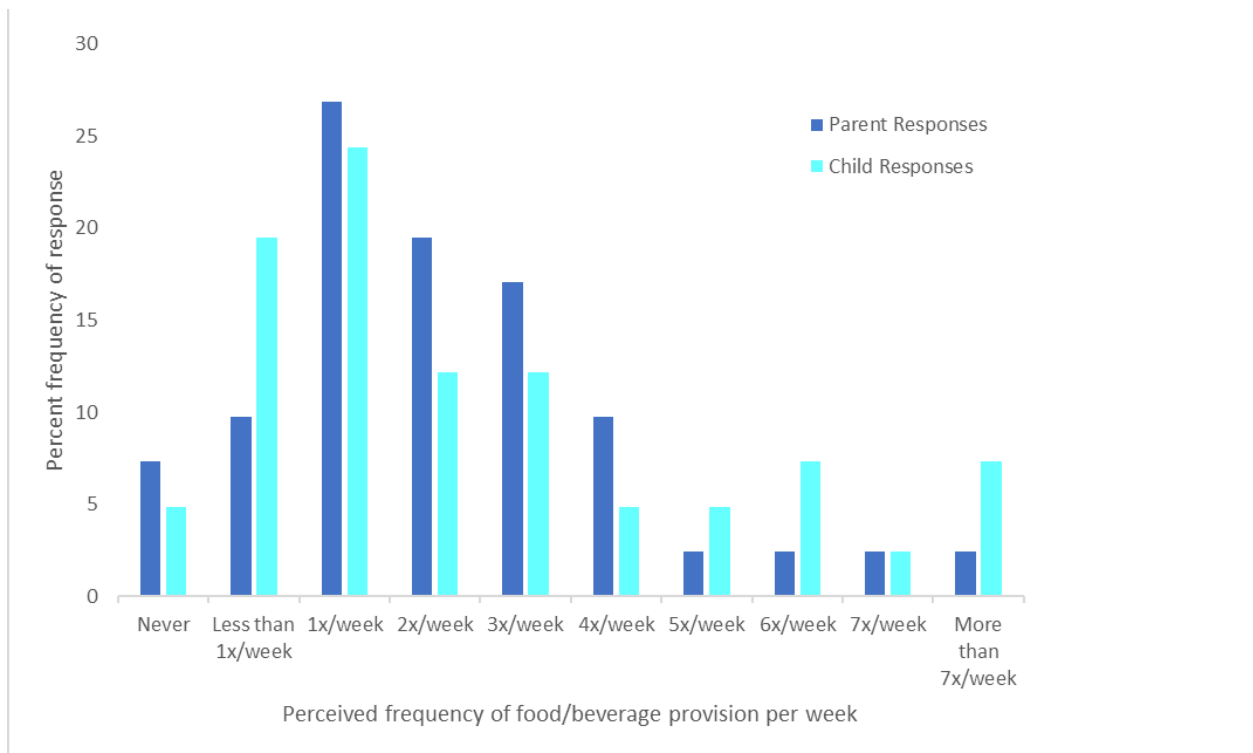


Figure 1: Parent ($n = 30$) and Child Perceptions of Frequency of Food and Beverage Provision to Children ($n = 44$) from Non-Parental Sources

3.3.2 Location of Food and Beverage Provision to Children

The most common locations in which children reported being provided with foods and/or beverages from non-parental sources were at other people's homes (33.1%¹ of children reporting receiving foods or beverages one or more times per week), religious settings (19.2%), restaurants (18.4%), and in extracurricular settings (17.9%).

Additionally, 10.8% of children reported receiving a food/beverage from non-parental sources one or more times per week at school. Please see Figure 2 for a more detailed overview of the locations noted by child participants in which foods and/or beverages were provided to them from non-parental sources.

¹ As noted previously, specific items (e.g., classrooms, assembly areas, after-school settings) were aggregated into broader categories (e.g., school) for each of the frequency-based topics (i.e., location/setting, source, food/beverage type, and special event/occasion). Because not every participant answered each question for individual survey items, the researchers were not able to determine actual numbers (*n*) of children that chose any given response after data aggregation; as such, only percentages are reported in these instances.

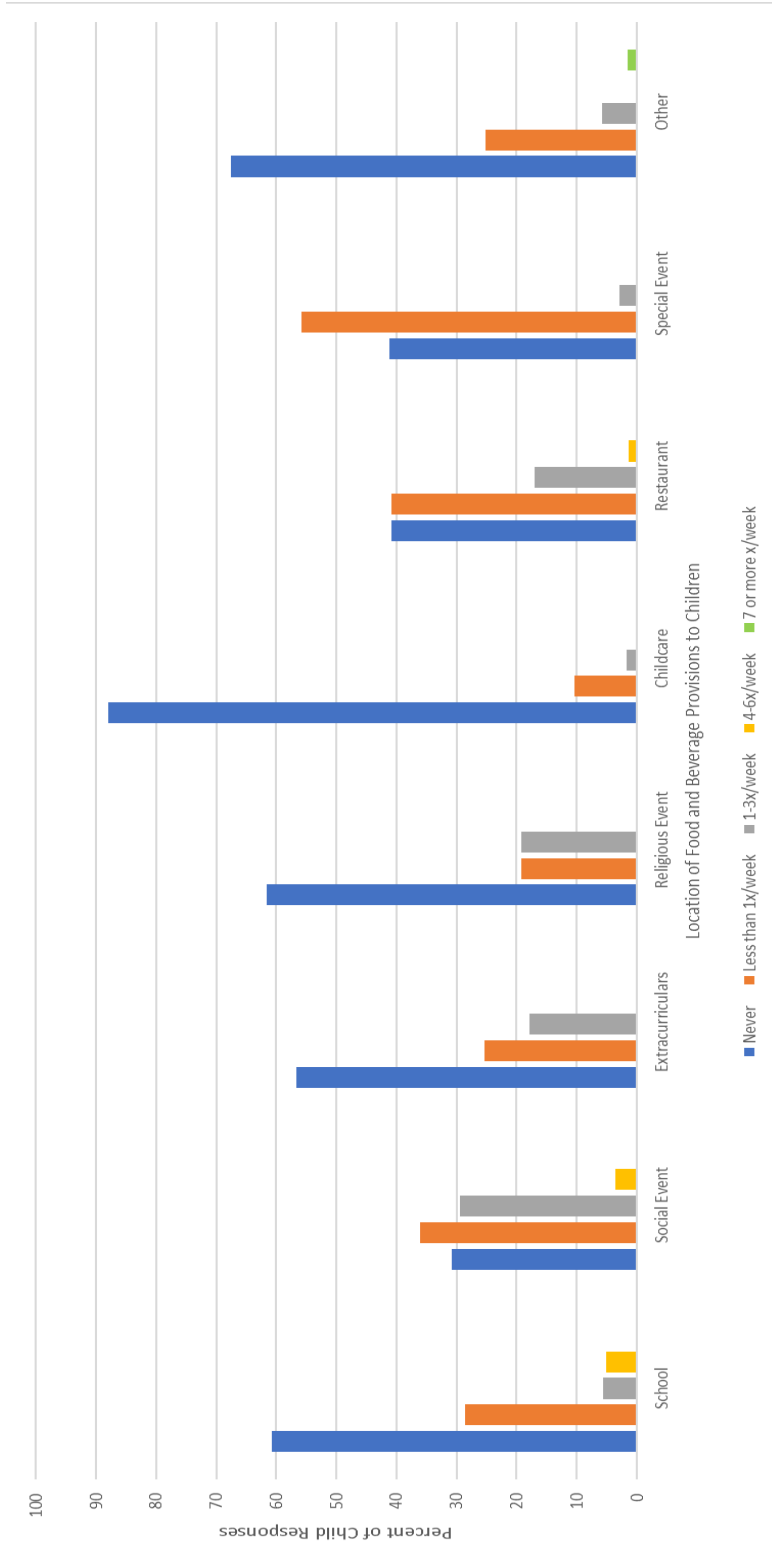


Figure 2: Child-Reported ($n = 44$) Frequency of Food and Beverage Provision from Non-Parental Sources, by Location

3.3.3 Source of Food and Beverage Provision to Children

Children were most likely to report receiving foods and beverages from the following non-parental sources: another child (31.6% of children reported receiving foods or beverages from another child an average of at least once per week), a friend's parent or a neighbour (14.7%), a relative (29.7%), or a school staff member (10.9%).

Figure 3 provides a visual representation of the frequency of provision from non-parental sources as reported by children.

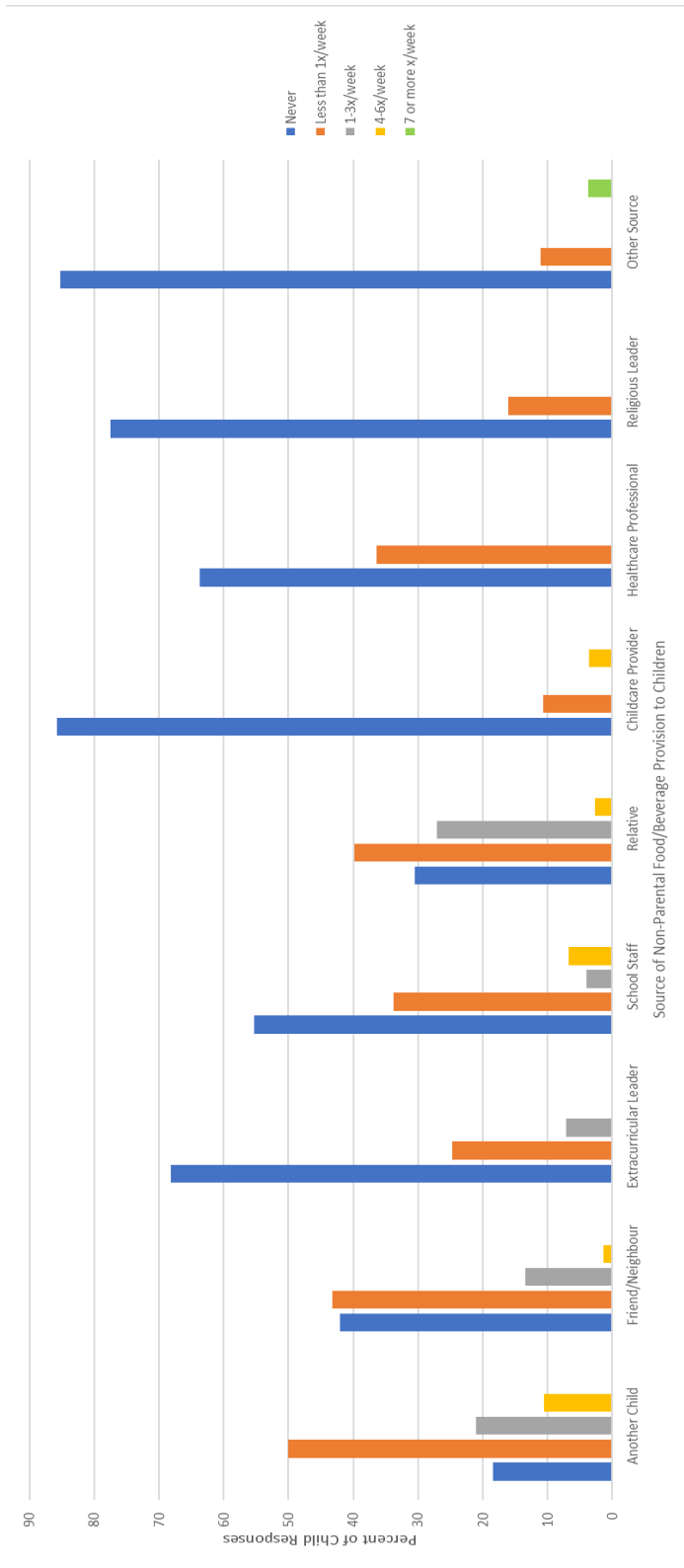


Figure 3: Child-Reported ($n = 44$) Frequency of Food and Beverage Provision from Non-Parental Sources, by Source

3.3.4 Type of Foods and Beverages Provided to Children

With regard to the various types of foods and beverages provided to children from non-parental sources, child participants most commonly reported receiving fruits and vegetables (27.4% reported receiving them one or more times per week), processed snacks (27.4%), grain products (24.9%), and sugary foods (25.7%). See Figure 4 for a graphical display of these food and beverage types.

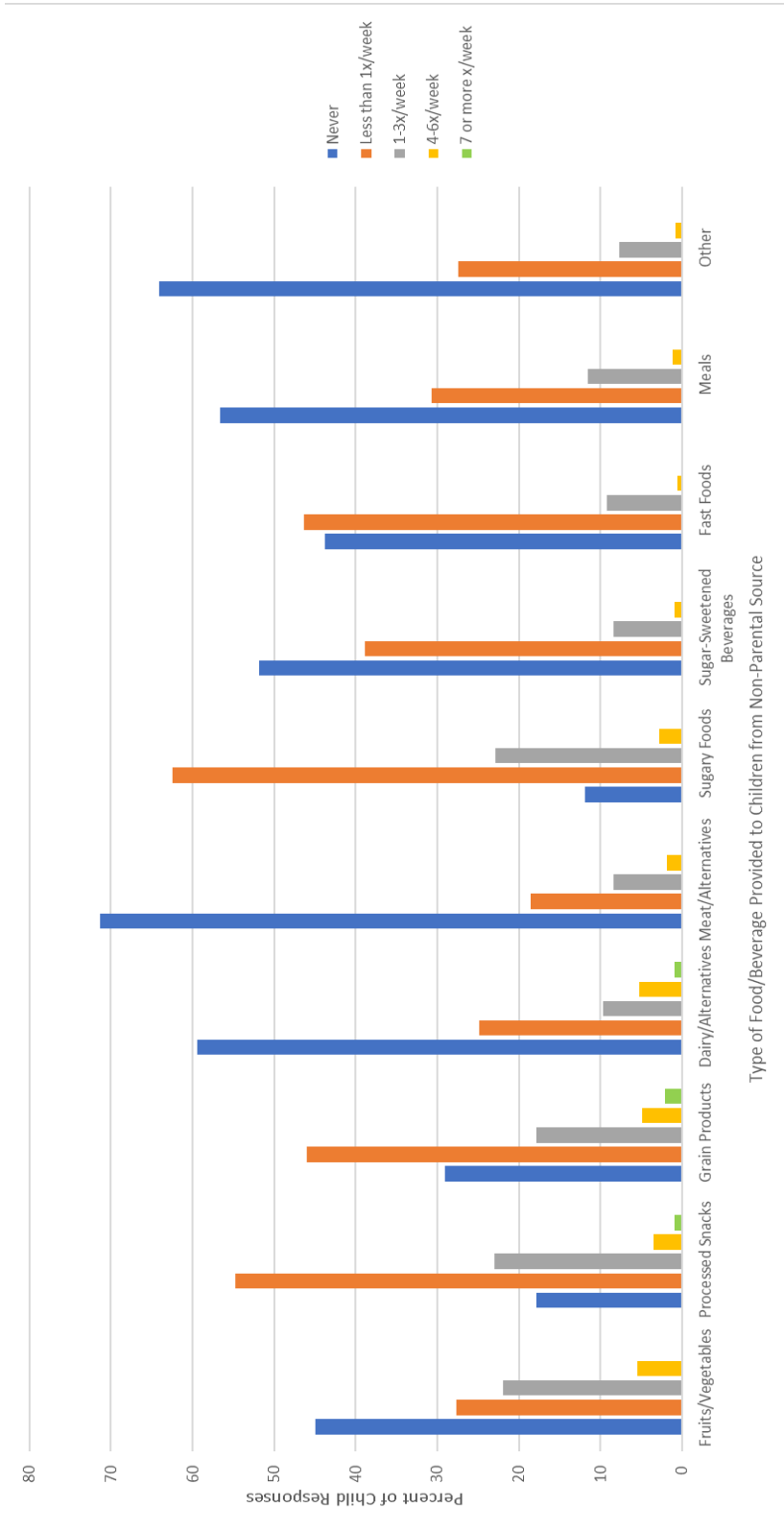


Figure 4: Child-Reported ($n = 44$) Frequency of Food and Beverage Provision from Non-Parental Sources by Food Category

3.3.5 Child-Reported Food and Beverage Provision at Special Events and Occasions

Child participants most commonly reported being provided with foods and/or beverages from non-parental sources at the following special events/occasions: parties (83.4% reported receiving a food/beverage from a non-parental source at least once per year), sleepovers (85.7%), and vacations (76.9%). During these same occasions (i.e., parties, sleepovers, and vacations), 18.3%, 12.8%, and 28.6% of children reported receiving foods/beverages from non-parental sources five or more times per year, respectively. See Figure 5 for a visual depiction of all special events at which children reported receiving foods and/or beverages from non-parental sources.

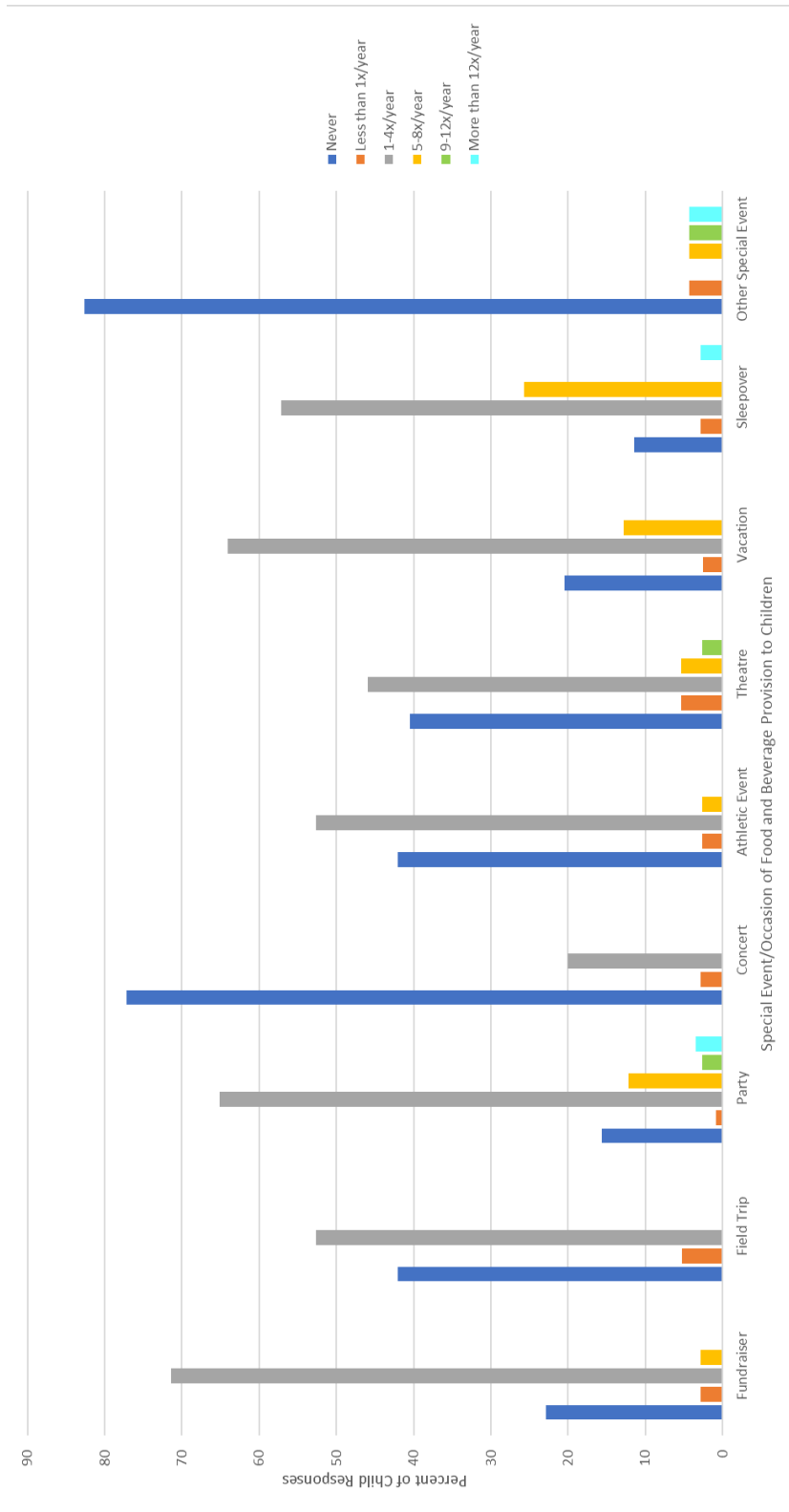


Figure 5: Yearly Frequency of Child-Reported ($n = 44$) Food and Beverage Provision from Non-Parental Sources at Special Events/Occasions

3.3.6 Parental Attitudes and Awareness about the Provision of Foods and Beverages to Children from Non-Parental Sources: Quantitative Findings

Three quarters of parent participants reported that being aware of the foods and beverages provided to their children from non-parental sources was important; 21 parents (75.0%) reported that they agreed (i.e., somewhat agreed, agreed, or strongly agreed) with the statement, “*It is important to me that I am aware of the foods and beverages provided to my child(ren) from non-parental sources.*” Many parents also reported feeling that they had a lack of control over the provision of these foods and beverages; 16 parents (55.1%) somewhat-to-strongly *disagreed* with the statement, “*I feel I have control over what foods and beverages are provided to my child(ren) from non-parental sources.*” In addition, more than half of parent participants ($n = 19$; 63.3%) disagreed (i.e., somewhat disagreed, disagreed, or strongly disagreed) with the item asking whether they felt that foods and beverages provided from non-parental sources contributed positively to their children’s diets. See Table 3 for a listing of all survey items pertaining to parental awareness and attitudes about non-parent food and beverage provision, as well as means, standard deviations, and the range of scores based on Likert-scale responses.

Table 3: Parental ($n = 30$) Awareness of and Attitudes towards Foods and Beverages Provided to Children from Non-Parental Sources

Survey Item	Mean	Standard Deviation (<i>SD</i>)	Range from 1 (<i>Strongly Disagree</i>) to 7 (<i>Strongly Agree</i>)
“I am concerned about the foods and beverages provided to my child(ren) from non-parental sources.”	3.6	1.6	1-7
“I feel that the foods and beverages provided to my child(ren) from non-parental sources have a negative impact on their overall diet quality.”	3.8	1.6	1-6
“I feel that the foods and beverages provided to my child(ren) from non-parental sources have a positive impact on their overall diet quality.”	3.2	1.3	1-6
“It is important to me that I am aware of the foods and beverages provided to my child(ren) from non-parental sources.”	5.2	1.5	1-7
“I feel I have control over what foods and beverages are provided to my child(ren) from non-parental sources.”	3.5	1.6	1-6

Note: All items were scored on a 7-point Likert scale ranging from 1 (*“Strongly Disagree”*) to 7 (*“Strongly Agree”*); as such, higher scores are reflective of greater levels of agreement.

Parents also indicated that, overall, they believed that their child(ren) informed them of the foods and beverages provided to them from non-parental sources. Parents estimated that, on average, they estimated that they were made aware of about half (49.8%) of the foods/beverages provided to their child(ren) from non-parental sources *ahead of time* (e.g., by somebody with prior knowledge of this provision, such as the child or the source providing the non-parental food/beverage). When asked what percentage of foods and beverages provided to their children from non-parental sources their *child(ren) informed them of* overall, at any time, parents estimated that they were made aware of almost two-thirds of food/beverage provision instances (63.6%).

3.3.7 Parental Attitudes and Awareness about the Provision of Foods and Beverages to Children from Non-Parental Sources: Qualitative Findings

Thematic analyses revealed three major themes and four subthemes pertaining to parents' views and perceptions of food and beverage provision to children from non-parental sources: 'encouraging balance' (no subthemes), 'parental attitudes' (two subthemes including 'peers as food and beverage providers' and 'adults as food and beverage providers'), and 'parental roles and strategies' (two subthemes including 'education' and 'supervision/monitoring'). All subthemes were further divided into codes, and example quotes were extracted to illustrate these themes, subthemes, and codes.

With regard to the 'encouraging balance' theme, several parents mentioned balance and moderation as a lens through which they viewed the foods and beverages provided to their children from non-parental sources. For example, one parent said, "*She*

eats healthy food at home so I feel that it is still pretty balanced with what she gets from others” (P11), while another parent noted “I see their diet as a whole picture, and do not get too worked up about the sweet treats being offered to them” (P5). In many instances, the concepts of balance and moderation seemed to be tied to the frequency of food and beverage provision to children from other people; some parents felt that it was “[their] responsibility as a parent to offer healthy options on a regular basis, and not worry about the occasional treats they get from others.” (P5). Similarly, another parent described their view of moderation in relation to parenting: “My girls choose to be healthy eaters on a regular basis. As a parent, I try to remind them to make healthy choices when they are out without me but to also enjoy the sweet things in life too. I am encouraging balance.” (P10). Conversely, some parents noted concerns about the foods and beverages provided to their children, which also appeared to be tied to the frequency of this provision: “When our children went to a home child-care provider, they were given treats every day. I was not pleased with the type of snack they received” (P4).

The second theme, ‘parental attitudes’ towards food/beverage provision from non-parental sources, was divided into two subthemes: peers as food and beverage providers and adults as food and beverage providers. Generally speaking, parents appeared to view food and beverage provision from peers as more problematic than non-parent adult provision. In many cases, this was noted to be due to the lower quality of the food and beverage items provided. For example, one parent wrote: “*My daughter is at an age where she and her friends provide the ‘food’ (candy and treats)” (P9). Another parent cited the frequency—and lack of awareness—of provision from peers as problematic: “I had been thinking about other adults giving children food when filling out my portion of*

the survey, but what I realized was that their peers are giving them more food than I was thinking of” (P22). Conversely, one parent noted that their children *“trade off supplying snacks with some neighbouring friends... I am aware of what they are eating”* (P25).

Parental attitudes towards other adults providing children with foods and beverages appeared to be quite mixed. On one hand, some participants noted that the foods and beverages provided to their children from other adults were less healthy (e.g., *“Some of my child’s teachers in the past have provided a lot of candy (e.g., sour keys, tic tacs, gum) as incentives”* [P3]). On the other hand, some parents indicated that they trusted other adults to provide their children with healthy foods and beverages. For example, one parent acknowledged that their children received foods and beverages from grandparents and afterschool care staff: *“We know what they get served and it is generally healthy: [vegetables] and hummus, crackers, fruit”*, and that *“Sometimes at friends’ houses they get lunch but we trust the people to serve them healthiest”* (P7). Another parent commented: *“For the most part, adults offer healthy options”* (P9).

The third and final theme, ‘parental roles and strategies’ to mitigate the potential negative health impacts of food and beverage provision from non-parental sources, was comprised of two subthemes: ‘education’ and ‘supervision/monitoring’. Several parents noted the importance of their role in educating their children and involving them in decision-making (e.g., *“We tend to involve our child in making food choices”* [P12]). Some parents noted that age was a factor in the expectations they had of their children. One parent commented on the importance of their role as a parent, stating: *“By middle school I hope that I have taught my child to make good choices”* (P11), and another

mentioned that their older child was “*able to decline*” (P3) when offered treats, whereas their younger child was not.

With regard to the ‘supervision/monitoring’ subtheme, some parents reported that they attempted to increase parental monitoring to lower their children’s exposure to foods and beverages from non-parental sources. For example, one parent wrote: “*My children only get non parental food from [sources] whom we trust*” (P7). Another participant said that as parents, they “*try to inform friends, family and acquaintances of our choices to avoid our child being given foods we do not approve of. As a result, our child and I would agree that she does not get offered as much*” (P12). Clearly, such parental strategies are used by some parents as a means to limiting the foods and beverages provided to children from others, as well as the potential negative consequences of these unhealthy foods and beverages.

3.3.8 Parental Views of the Family Food Environment during the COVID-19 Pandemic: Qualitative Findings

Five overarching themes were identified, via thematic analysis, from parents’ written responses to the open-ended survey item asking parent participants to reflect on the consumption and provision of foods and beverages by/to their child(ren)—from parent or non-parent sources, and within or outside of the home—during the COVID-19 pandemic. These five themes included: changes in family routine, shifts in child feeding responsibilities, more family time at home, trends in food and beverage provision to children from non-parental sources, and changes in diet quality.

Within the ‘changes in family routine’ theme, parents identified an overall lack of routine for their family throughout the early months of the COVID-19 pandemic; and as a result, several interrelated changes related to eating habits and the family food environment. Many parents shared the sentiment noted by one parent, that “*with less routine, [they] find the kids are snacking more throughout the day*” (P7). Similarly, one parent noted that their family is “*eating and snacking a lot more than usual. We are not always eating at normal times...later breakfast, late dinners.*” (P24), while another stated that “*...we are much more relaxed about snacking during this time. Everyone gets up at different times and eats at different times*” (P25).

The second theme that emerged, ‘shifts in child feeding responsibilities’, reflects the changes that parents noticed in their family’s food consumption patterns as a result of the COVID-19 pandemic. Specifically, participants described a shift from mostly parent responsibilities (pre-pandemic) to an increased amount of child responsibility with regard to the foods and beverages consumed in the home environment (during the pandemic). Parents noted that the increased responsibility on the child’s part meant that parents had less control over and knowledge of what their children were eating during the day. One parent described this shift as follows: “*While in school, I have more control over what they eat as I either make [the child’s] lunch or monitor what [the child] makes. While home, [the child] tends to go to the cupboards more throughout the day and is snacking more. [The child] has more choice in what [they are] eating and is not always making the best choices. When lunch at school is packed, it is more balanced and [they are] forced to eat the healthy options*” (P23). Similarly, another parent spoke to the increased independence of their children during the pandemic, stating that they are “*making more*

independent food choices (e.g., I'm not making their lunches for school and including fruits and vegetables. When they choose their own lunch, it may consist of a bagel/cream cheese, but not the fruit and veggies they would have eating if they were at school)" (P5).

Some positives were also noted as a result of this shift in child-focused nutrition.

Specifically, some parents noted a greater level of child participation in food preparation; one stated that their "...kids are learning to prepare simple meals from healthy ingredients" (P16), while another wrote that their kids are "*in the kitchen making foods they love that are healthy*" (P10).

The third theme reflects the general eating patterns and nutrition-related changes resulting from spending 'more family time at home'; these changes, according to parents, included more cooking and baking, consuming less FAFH, and more frequent family meals. Many parents indicated that as a result of the pandemic, they had more time to cook and prepare meals at home. One parent stated, "*My family has more time together to have good meals*" (P15), while another noted, "*We are preparing more meals at home given the increase in time*" (P16). One parent noted the potential increase in food consumption as a result of the increased time at home to prepare meals, stating: "...we are having home-cooked meals and heartier lunches than the children would have had at school" (P4). Many parents also mentioned an increase in baking at home, reflected in statements such as: "*Activities such as baking and making treats [have] increased during the pandemic*" (P8), and "*[my child] loves to bake, so we have a lot of cookies and squares in the house now*" (P9). On a potentially healthier note, several parents noted that their families were eating fewer foods prepared outside of the home, such as takeout: "*We have stopped our consumption of fast food and have not been ordering in*" (P16). Finally,

while many parents acknowledged that routine was lacking during the pandemic, they also reported that their families were sitting down for family meals together more often (e.g., “...we do try to all eat dinner together every evening” [P25] and “We now sit together and eat as a family every night” [P9]). Some parents attributed the extra time they had for cooking and preparing meals at home to working from home and the cancelation of extracurricular activities. One parent explained, “We have been spending more time making nutritious foods as we have more time and not rushing to activities” (P6), and another noted, “We are making more healthy meals because we are not always on the go and my husband [is] home and he’s a good cook” (P24).

The fourth theme that emerged from the data relates to parents’ views of trends in food and beverage provision to children from non-parental sources throughout the pandemic. The majority of parents noted that their children were receiving very few foods/beverages from non-parental sources while at home due to the pandemic; for example, one parent commented: “My child is receiving less food from others as [they do] not leave the house (P15)”. Parents also acknowledged the lack of socializing with other children and public health measures in place during the pandemic (e.g., social/physical distancing), and their impact on the foods received from non-parental sources. One parent wrote: “...we have been participating fully in social distancing so [my children] are not receiving foods from outside sources” (P19), and another stated that, “the inability to socialize with friends has had an impact in my [child’s] treats outside of the home” (P16). Other parents noted that their children “...are never out of the house to get food from friends or sleepovers at Grandma’s” (P11), and that they “...are

not consuming food outside of the home or from others ...[at] class parties, peer birthday parties or playdates” (P13).

Interestingly, there was one seemingly emerging, and potentially pandemic-specific, non-parental food/beverage provision method that many parents noted: food delivery from friends. Several parents acknowledged this phenomenon, reflected in comments such as: “...occasionally our child's friends have delivered treats to our house” (P12), and “[my child] and [their] friends have started to do porch drop-offs with the treats they've been baking” (P9).

The last theme, ‘changes in diet quality’, captures the perceptions of parents with regard to the healthfulness of their family’s overall diet since the beginning of the pandemic. In short, while several changes in family diets were noted as a result of the pandemic, parents seemed to have mixed feelings about the quality of the foods consumed. Some parents noted that their families’ diets were more healthy during the pandemic than they were prior (e.g., “...it has actually made my [kids] even healthier eaters” [P10]; “[my child] is eating fewer processed foods” [P14]; and “...we are eating healthier as a family as a direct result of being in the home and having the time to cook, bake and try new recipes” [P17]). Other parents noted an increase in the unhealthy foods and beverages consumed within the home. For example, one parent stated that: “...we are having more salty snacks than would be typical (e.g., chips during movies)” (P4), while another wrote that their family has experienced “[an increase in] convenience foods at home as we are limiting our trips to the grocery store” (P5). A number of participants also mentioned an increase in ‘comfort foods’ during the pandemic; one noted that “there have been more ‘comfort’ foods offered inside the home by parents, such as baked

goods” (P8), and along the same lines, another noted that their children are “*seeking comfort foods*” (P5). Many parents acknowledged that their families’ diets were healthier in some respects and less healthy in others. One participant summed up this sentiment well, stating that: “*Overall I would say that in some ways our food quality has gone up (organic, local foods easier to buy during this time so more prone to buying that) but in other ways it has gone down - baking more sweet things, buying more sugary foods from the grocery store*” (P22).

Chapter 4

4 Discussion

The primary purpose of this study was to explore: (1) child and parent perceptions of the frequency of food and beverage provision to children from non-parental sources; (2) the locations/settings in which, sources from which, types of foods and beverages provided, and the special occasions at which foods and beverages are most frequently provided to children from non-parental sources; and (3) parental attitudes towards, and awareness of, these foods and beverages. Additionally, a secondary objective was to explore parent perceptions of how their children's eating behaviours have changed as a result of the COVID-19 pandemic. To our knowledge, this is the first study to address the frequency of foods and beverages provided to children from non-parental sources. In the context of these research questions, a number of findings warrant further discussion.

First, with regard to the *overall frequency* of food and beverage provision to children from non-parental sources, a large number of participants (nearly two-thirds of adults and almost one-half of children) estimated that children received foods/beverages from non-parental sources an average of one to three times per week. Interestingly, children reported lower numbers of food and beverage provision, on average, than parents, suggesting that parents tended to overestimate and/or children tended to underestimate. Regardless, these findings suggest that parents may be aware of most foods and beverages provided to children from non-parental sources. These results also reflect findings from previous studies; while a similar study conducted by Eck et al. (2019) did not explicitly measure parental awareness of foods that children consume

outside of parental supervision, parents did indicate that they were aware of the frequency and types of foods/beverages that children received at locations and events outside the home (e.g., friends' houses, parties, etc.) (Eck, Delaney, & Olfert, 2019).

Second, insofar as *location/setting* is concerned, children most commonly reported being provided with foods and/or beverages (i.e., at least once per week) from non-parental sources in other people's homes (i.e., at friends', neighbours', and/or relatives' homes), at religious events, in restaurants, and during extracurricular activities. The findings pertaining to restaurants and social situations are in line with a study conducted by Toumpakari et al. (2016), in which the social and geographic contexts in which adolescents (aged 11-18, $n = 884$) consumed 'non-core' foods and beverages (i.e., those providing few nutrients) were examined using 4-day food diaries. Toumpakari and colleagues did not focus on foods and beverages *provided* to adolescents (instead, they included all foods/beverages obtained by any means), but their results showed that adolescents consumed the most non-core foods by energy intake at restaurants (including fast-food establishments and cafés), friends' and relatives' houses, on-the-go, and at school (Toumpakari et al., 2016). Children and adolescents in the present study reported receiving foods and beverages in several of these locations, which is concerning from a health perspective if eating in these locations is conducive to greater unhealthy food and energy intake when compared to home or other locations. Similarly, a study conducted by Cohen et al. (2012) showed that teenaged girls (aged 13-14 years, $n = 303$) in the United States were most likely to obtain unhealthy food at friends' homes, when compared to other locations including food outlets. Both of these studies (Cohen et al., 2012; Toumpakari et al., 2016) included exclusively adolescent age ranges, whereas the present

study included child and early adolescent participants. As such, this study expands upon previous findings with regard to the locations of food and beverage provision to children of younger ages.

In relation to the *source* of provision, children most commonly reported receiving foods and beverages (i.e., at least once per week) from non-parental sources that included another child, a parent's friend or a neighbour, and a relative. These findings both reflect and add to the literature in this area. Specifically, our findings indicate that peers are an important source (and their homes are an important setting, as noted above) of food and beverage provision to children from non-parental sources. This expands upon the findings of the abovementioned study conducted by Cohen et al. (2012), which included only teenaged girls, providing an indication that this may be true for previously unstudied younger children (aged 7-14) as well as boys. Similarly, Toumpakari and colleagues (2016) also found that adolescents were more likely to eat non-core foods in the presence of peers than in the presence of family members, or when alone.

Our study also showed that grandparents and other relatives are frequent providers of foods and beverages to children. These findings correspond with those presented by Jongenelis et al. (2018), who discovered that grandparents providing childcare for at least three hours per week provided their grandchildren with two to six snacks per week (Jongenelis et al., 2018). Participants in the present study were not asked to provide information about regular childcare provision from grandparents, which could potentially account for our findings showing fewer snacks provided by grandparents than in the study by Jongenelis et al. (2018). Our findings also showed that nearly one third of children reported receiving a food or beverage from a relative at least once per week, on

average, and that neighbours and/or adult friends of parents are a common source of non-parental foods/beverages. Interestingly, the literature pertaining to the potential health impact(s) of food and beverage provision to children from relatives is equivocal. For example, whereas Jongenelis et al. (2018) found that grandparents tended to provide healthy foods and beverages to their grandchildren while caring for them, Ayala et al. (2008) found that eating at a relative's, friend's, or neighbour's home was associated with greater SSB consumption in children (Ayala et al., 2008; Jongenelis et al., 2018).

In terms of food and beverage *type*, the most frequently reported non-parental foods and beverages provided to children (at least once per week) were fruits and vegetables, followed by processed snacks (e.g., chips, granola bars, crackers, etc.) and sugary foods (e.g., candy, chocolate, baked goods, ice cream, etc.). It is somewhat surprising that children reported receiving fruits and vegetables from non-parental sources quite regularly, given that parents have noted many barriers to providing other people's children with healthy foods/beverages (e.g., time constraints, children's preference for unhealthy foods, cost; Eck, Delaney, Byrd-Bredbenner, et al., 2019). These results are also unexpected given the locations and special events/occasions at which children most frequently reported receiving foods/beverages from non-parental sources (i.e., at friends', relatives', and neighbours' houses, restaurants, religious events, extracurricular activities, and at sleepovers, parties, and vacations). Many of these events and locations have been previously identified as contexts in which children are likely to receive unhealthy foods; namely, vacations (Eck, Delaney, & Olfert, 2019), friends', relatives', and neighbours' homes (Ayala et al., 2008; Eck, Delaney, & Olfert, 2019), parties (Eck et al., 2018; Eck, Delaney, & Olfert, 2019; Eck, Delaney, Byrd-Bredbenner,

et al., 2019), and restaurants (Eck et al., 2018; Eck, Delaney, & Olfert, 2019). In the present study, parents indicated that they felt grandparents, in particular, tended to provide their children with mostly healthy foods and beverages; this is supported in the literature (Jongenelis et al., 2018). It is possible, then, that some of the fruits and vegetables that children reported receiving, are being provided by grandparents and other relatives. It would be useful for future studies to investigate further the types and nutritional quality of foods and beverages provided to children from specific non-parental sources.

It is less surprising that children also reported receiving a number of unhealthy foods (i.e., processed snacks and sugary foods) from non-parental sources. As mentioned above, the literature, while limited, supports the finding that the foods/beverages provided to children from non-parental sources tend to be unhealthy (Ayala et al., 2008; Eck et al., 2018; Eck, Delaney, & Olfert, 2019; Eck, Delaney, Byrd-Bredbenner, et al., 2019). Additionally, foods/beverages were most commonly provided to children by peers, who tend to provide less healthy foods, according to parental views expressed in this study as well as findings outlined in previous studies (e.g., Cohen et al., 2012).

With regard to *special events/occasions*, child participants most commonly reported being provided with foods and/or beverages from non-parental sources at parties, sleepovers, and while on vacations. The vast majority (i.e., 83.4%, 85.7%, and 76.9%, respectively) of children reported receiving a food or beverage on these occasions at least once per year, and between 12 and 29% of children reported receiving a food/beverage on one of these occasions five or more times per year. Several studies have found that children and parents have identified parties and friends' houses as contexts in

which children received foods/beverages from non-parental sources (Eck et al., 2018; Eck, Delaney, & Olfert, 2019), but no previous mention has been made of sleepovers, specifically. Thus, further research may be warranted in this area, given the relatively high frequency of reported food/beverage provision from non-parental sources at sleepovers (pre-pandemic) among children in this study.

It is interesting to note that vacations were noted by children as an ‘event’ in which they received foods/beverages from non-parental sources five or more times per year. While we do not know the nature or interpretation of ‘vacation’ for the families and children in our study, this finding could reflect the high socioeconomic status of most families that participated in this study. It is unknown as to whether families of lower socioeconomic status would have identified vacations as a major event in which their children received foods/beverages from non-parental sources. There is very little literature in this area, and these specific occasions should be considered key areas of interest in future studies in this area. In particular, an examination into who is providing foods/beverages to children on vacations (if not parents), as well as the specific types of foods/beverages served at sleepovers, remain unclear.

As far as *parental attitudes and awareness* are concerned, three-quarters of parents reported that they felt it was important to be aware of the foods and beverages provided to their children from non-parental sources. In fact, the overall ‘agreement’ of parents was highest for this item in the parental attitudes and awareness section of the survey. Parents have expressed similar sentiments in previous research (Eck, Delaney, & Olfert, 2019), noting that they communicate with their children about the foods/beverages they consume outside of parental supervision. Most parents in the current study also

reported feeling as though they had a lack of control over the foods and beverages provided to their children, which was also echoed in Eck and colleagues' study, in which one parent stated, "*you know, when a kid stays at a friend's house it will be junk food*" (Eck, Delaney, & Olfert, 2019, p. 1173).

Almost two-thirds of parents in the present study noted that they did *not* feel that food/beverage provision to their children from non-parental sources contributed positively to their children's diets. Again, given the high socioeconomic status of most of the participants in our study, it is unlikely that any of these families were food-insecure, nor would they (likely) have to rely on their children receiving foods from non-parental sources (e.g., school and other food provision programs) to receive adequate nutrition (Tarasuk et al., 2019). Parents and families living with financial difficulties may feel differently (i.e., more positively) about the impact of food and beverage provision from non-parental sources on their children's diet quality.

In response to the open-ended survey questions, many parents in the present study indicated that they felt that foods/beverages from non-parental sources, when provided infrequently, could fit into a balanced diet. Previous studies have shown similar parent and child attitudes, also citing the importance of a generally healthy diet, and allowing for occasional unhealthy food/beverage consumption (Eck, Delaney, & Olfert, 2019; Eck, Delaney, Byrd-Bredbenner, et al., 2019). Parents also seemed to hold mixed views of the types of foods/beverages provided from non-parental sources; most indicated that those provided by peers tended to be unhealthy and provided to their children too frequently. Some felt the same way about foods/beverages provided to children by other adults, but other parents felt that adults tended to provide their children with healthier options, which

also aligns with previous literature (Eck, Delaney, & Olfert, 2019). Lastly, many parents in the present study reported several strategies to mitigate the potential impact of food/beverage provision from non-parental sources that have been previously noted in the literature (Eck, Delaney, & Olfert, 2019), such as making a concerted effort to teach their children to make healthy choices when outside of the home, and attempting to restrict access to unhealthy foods/beverages by communicating their food/beverage-related expectations to childcare providers, friends, and relatives.

Finally, in reference to the secondary objective of the present study—that is, to explore parents' views of their children's eating habits during the early months of the COVID-19 pandemic in Ontario—many parents reported that the pandemic had affected their children's (and family's) eating patterns and behaviours. Specifically, many parents reported experiencing a lack of family routine, which often resulted in more snacking and less regular meal times. This phenomenon has been acknowledged in recent literature, and is linked to potential risk of developing childhood overweight/obesity during pandemic-related quarantine (Mattioli et al., 2020; Rundle et al., 2020). Parents in the present study also reported a shift in child feeding responsibilities, such that children had greater feeding responsibilities (i.e., autonomy with regard to food choices) during the pandemic. Because of more time at home as a result of COVID-19, many parents noted that they ate and prepared more home-cooked meals and consumed less FAFH as a family; they also reported more frequent family meals and more baking. These findings align with recent data suggesting that 30% of Canadians' FAFH spending has been shifted to grocery stores and supermarkets during the COVID-19 pandemic, rather than to food outlets such as fast-food establishments and restaurants (Goddard, 2020).

A recent COVID-19-related study noted that individuals may be eating foods with greater shelf-lives (i.e., more packaged and processed foods and fewer fresh foods) during the pandemic (Rundle et al., 2020), although only one parent in the present study acknowledged experiencing this pattern. Many parents did remark, however, on the fact that their children received very few foods and beverages from non-parental sources due to social/physical distancing during the pandemic and the drastic reduction in social events. An interesting ‘trend’ that was identified by some parents, however, was friends delivering treats and baked goods to children’s homes. Several studies have noted that children and adolescents have been reporting greater levels of psychological distress throughout the pandemic, due in part to social isolation (Saurabh & Ranjan, 2020), and that dietary patterns can change negatively during stress responses such as those induced by the current global crisis (Mattioli et al., 2020). Some parents did speak to a greater amount of ‘comfort foods’ being consumed by their children and families during the pandemic, perhaps as a coping mechanism and also potentially related to increased social isolation and more time at home.

Lastly, parents noted several ways in which they felt their families were eating more healthfully, as well as a number of ways in which they felt they were eating less healthfully; specifically, they mentioned cooking more family meals, but also that their children were consuming more treats and less healthy snacks. Overall, while it remains to be seen how the current pandemic will affect the health and wellbeing of individuals now and in the future, these findings provide preliminary evidence related to some of the shifts in nutrition-related patterns and behaviours that parents are currently observing in their children and families. It is also critical to note that the present study’s sample of

mostly families of high socioeconomic status, with many parents alluding to the ability to work safely from home, is likely protective against the more detrimental health effects seen in populations of low socioeconomic status and those experiencing food insecurity (Van Lancker & Parolin, 2020).

4.1 Implications

The findings of this study, and future studies in this area, could be shared with stakeholders such as school board members, parents, caregivers, healthcare professionals, and leaders of extracurricular organizations, to increase awareness and provide more information about the foods and beverages provided to children from non-parental sources. Eventually, these findings (combined with the findings of previous and future studies conducted in this area) could provide a basis for the development of policies and guidelines about non-parental food/beverage provision to children in various settings and by various stakeholders.

In regards to the COVID-19-related findings, several themes emerged that reflect positive shifts in family nutrition-related behaviours during the pandemic. For example, purchasing and consuming fewer foods away from home, and cooking and eating more family meals together, could have a positive impact on overall family and child health, connectedness, and wellbeing. Thus, it is worthwhile to note that these behaviours—while reported by parents as unique to the pandemic—are important to consider from a broader health promotion perspective in terms of changes in behaviour that should be promoted and supported moving forward, in post-pandemic life.

4.2 Limitations and Future Research Directions

This study has some important limitations. Perhaps most notably, this study was conducted approximately two months into the COVID-19 pandemic in Ontario, Canada (i.e., May/June 2020). As such, pandemic-related safety measures such as school closures, working from home, and social/physical distancing may have affected participant responses. Specifically, it may have been difficult for both child and adult participants to properly and accurately envision a ‘typical week’ given their current circumstances. The research team attempted to mitigate this by including prompts prior to all survey questions, asking participants to consider a typical week *prior to* the COVID-19 pandemic. Future studies conducted in an environment and at a time more relevant to what is being measured (i.e., when children are regularly attending schools, birthday parties, doctors’ offices, etc.) are advisable; such studies could also include measures such as a food and beverage log, which were not used as a result of the pandemic. Additionally, for the ‘special events/occasions’ questions, participants were asked to report *annual* frequency of food/beverage provision from non-parental sources. This was done purposely given the nature of many of these events and the unlikelihood that they (e.g., vacations) would take place weekly. However, for these questions, participant responses may have been subject to retrospective reporting bias due to the longer time frame to be considered. Researchers might consider using a shorter (e.g., monthly) frequency measure or a food log to more accurately capture the provision of foods and beverages from non-parental sources in these situations.

As noted above, this study was exploratory in nature, given that few studies have been conducted in this area previously. As a result, some methodological limitations

warrant noting. For several reasons, the results of this study cannot be generalized to the Ontario population at large; namely, this study had a small sample size ($N = 74$ participants representing 30 families), and a convenience sample was used. As such, this study addresses a very small subset of this population. Based on demographic information, this survey was completed by predominantly white (93.1%) families with a high household income (70.0% earning \$100 000 or more per year), which limits representativeness and generalizability. While the participants in this study were not representative of all families in Ontario, our findings provide preliminary evidence related to the quality, quantity, and contexts in which foods and beverages are provided to a sample of children in Grades 2-8 in Ontario, from non-parental sources. Researchers attempting to provide a more accurate and generalizable description of the foods and beverages provided to children from non-parental sources should obtain a larger, provincially or nationally representative sample of children and adolescents. Additionally, because more than one third of parents in our study completed the online survey with more than one eligible child, some of our findings could be biased based on the potential for similar (under- or over-) reporting for multiple children by one parent.

Another limitation of the present study was the method of obtaining qualitative data; while parent responses to the open-ended online survey questions yielded some important findings, it would have been preferable to conduct the qualitative aspect of this research through interviews and/or focus groups. Future studies would benefit from delving deeper into this area with different qualitative methods to obtain richer data. Lastly, it would be worthwhile for future research to include valid and reliable

assessments pertaining to the *consumption* and *nutritional quality* of the foods and beverages provided to children from sources other than their parents.

Chapter 5

5 Conclusions

The provision of foods and beverages to children from non-parental sources is an understudied area. This exploratory study aimed to describe, for the first time, the frequency in which foods and beverages are provided to children in Ontario from sources other than their parents, as well as the most common locations in, sources from, types of, and events at which these foods/beverages are typically provided. Additionally, parents' attitudes towards and awareness of these foods and beverages were explored. Most children and adults estimated that children received foods and beverages from non-parental sources an average of one to three times per week. According to children, peers and relatives were most likely to provide these foods and beverages, and the most common locations in which they were reported to be provided were in other people's homes (i.e., at friends', neighbours', and relatives' houses), at religious events, in restaurants, and during extracurricular activities. Fruits/vegetables, processed snacks, and sugary foods were noted by children to be most commonly provided from non-parental sources, and the special events in which children most commonly reported receiving foods/beverages included parties, sleepovers, and vacations.

Most parents reported that they felt it was important to be aware of the foods and beverages provided to their children, but that they had little control over their provision. Some parents felt that these foods and beverages, if provided infrequently, could be a part of a healthy, balanced diet. Notably, several parents reported efforts to teach their

children to make healthy choices outside of parental supervision and to reduce exposure to unhealthy foods and beverages from non-parental sources.

Finally, in terms of food-related changes during the COVID-19 pandemic, parents felt that their children's diets had changed due to a lack of family routine, an increase in children's autonomy over their food choices, increases in time at home, and fewer social events. In short, parents noted that in some ways, their families' diets were healthier, and in other ways, they were less healthy.

In conclusion, the field of FAFH, and more specifically, the provision of foods/beverages to children from non-parental sources, warrants further study. This is an important, yet largely unexplored area, with potential implications for the overall diet quality and health of children and families. Further, this study—and the findings of additional, well-designed studies conducted in this area—could inform stakeholders, including parents, caregivers, school personnel, and community organizations, about the importance of considering (and the impact of) food and beverage provision to children from important non-parental sources.

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Appendices

Appendix A: Recruitment Materials

ATTENTION PARENTS!!

We are conducting a study about the foods and beverages that your children are given from people **other than you!** We want to know your thoughts about this (before COVID-19), and also how the pandemic is impacting your family nutrition currently.

Do you:

- *Have at least one child enrolled in Grades 2-8 in an Ontario school?*

Are you:

- *Willing to complete a 30-minute online survey with your child(ren)'s help?*

If YES, please follow the link below!

https://uwo.eu.qualtrics.com/jfe/form/SV_6CZlPaPlv3aco7j



Appendix B: Notice of Ethics Approval



Date: 6 May 2020

To: Dr. Shauna Burke

Project ID: 115551

Study Title: The provision of foods and beverages to children from non-parental sources: An exploratory study

Short Title: The Provision of Foods and Beverages to Children from Non-Parental Sources

Application Type: NMREB Initial Application

Review Type: Full Board

Meeting Date: 06/Mar/2020

Date Approval Issued: 06/May/2020 12:36

REB Approval Expiry Date: 06/May/2021

Dear Dr. Shauna Burke

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. All other required institutional approvals must also be obtained prior to the conduct of the study.

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Appendix A - Social Media Post	Recruitment Materials	26/Mar/2020	2
Appendix Ba - LOI	Implied Consent/Assent	17/Apr/2020	3
Appendix Bb - Child Assent Script	Implied Consent/Assent	26/Mar/2020	1
Appendix C - Survey	Online Survey	17/Apr/2020	3
Appendix D - End of Study Letter	End of Study Letter	26/Mar/2020	2

No deviations from, or changes to the protocol should be initiated without prior written approval from the NMREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Katelyn Harris, Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix C: Online Survey

The Provision of Foods & Beverages to Children from Non-Parental Sources

Thank you for your family's interest in participating in this study! Please note that your participation requires the participation of at least one of your child(ren). These child(ren) must be enrolled in Grades 2-8 in an Ontario school. We ask that you complete the following screening questions before the survey begins to determine if you and your child(ren) are eligible to participate. If you are eligible, you will be provided with more information about this study before the survey begins.

1. Please check all of the boxes below that apply to you and the child(ren) who wish to complete this survey:
 - I have at least one child enrolled in Grades 2 - 8 at a school in Ontario
 - At least one of these child(ren) wishes to participate in this study with me
 - Prior to the COVID-19 related school closures**, the child(ren) that wish to participate in this study attended school **outside of the home** (i.e., are not home-schooled)
 - I (the parent) am able to speak, read, and write in English
 - I am able to communicate clearly with my child(ren), verbally or written, in any language (American Sign Language included)

If all boxes checked, participants will be directed to this message:

2. Congratulations! You and your child(ren) qualify to participate in this study. Please continue to the next page, where you will be asked to review some information about the study and to provide consent (for parents) and assent (for children). *(They will now be directed to the LOI and consent block).*

If all boxes not checked, and participant does not qualify, they will be directed to this message:

3. Thank you for answering these screening questions. Unfortunately, you do not qualify to participate in this study. Thank you for your time and consideration.

LOI and Informed Consent Block

[see Appendix D for LOI]

4. Parental Consent

We understand that with the ongoing COVID-19-related restrictions and safety measures that are currently in place for many (e.g., school closures, parents working from home), your daily routines have likely changed drastically. Despite these realities, we ask that you please do your best to fill out this survey while thinking of a “typical week” (i.e., one before the COVID-19 pandemic), which includes your child(ren) attending school on a daily basis.

5. LOI sections 1-5

6. LOI sections 6-10

7. LOI sections 11-14 [see Appendix Ba]

8. Informed Consent for Adult Participants:

You must check all three of the following boxes to move on to the next page of the survey.

- I wish to participate in this study.
- I have read the Letter of Information and I agree to participate. I acknowledge that my participation requires the participation of at least one eligible child.
- I provide consent for my child(ren) to participate in this study.

9. How many children will be helping you complete this survey?

- a. (dropdown box, options 1-3)

(Next Page)

[See Appendix E for Child Assent Script]

10. Informed Assent for Child Participants:

****PLEASE read this script to your child to ensure that they understand the study and are providing informed assent****

11. If you are participating with the help of more than one child, please have your children fill out the following fields **in order, from oldest to youngest. Each child must check both boxes.**

12. **CHILD #1**

- I wish to participate in this study and help my parent complete this online survey.
- My parent has read me the Child Assent Script, I have had the study explained to me, and I agree to participate.

the number of assent forms that are visible will coordinate with the number of children reported to be participating

16.

****THIS IS VERY IMPORTANT****

Your family's participant ID number for this study is $\{e://Field/RandomId\}$. **Please record this number for your records.** If you wish to withdraw your data from this study at any point in the

future, you will need to provide this number. ***You will not be able to withdraw your data without this number.***

Once this number has been recorded, you are ready to begin the survey.

Online Food and Beverage Survey

Part 1: Demographic Questions, Child 1

17. Instructions: This part of the survey is to be completed by adult participants (i.e., the ***'parent'***; please see definition provided below). This portion of the survey contains demographic questions regarding **your child(ren)**. Please answer each of the following questions to the best of your ability. You may skip any questions if you do not feel comfortable providing an answer.

For this survey, a 'parent' refers to any adult living in the same home as the child that has consistent feeding responsibilities for that child. This may include, but is not limited to, biological parents, step-parents, unmarried partners of parents, adoptive parents, etc.

18. What is your relationship to **CHILD #1**? (e.g., mother, step-father, etc.). Please specify below.
-

19. In what school grade is **CHILD #1** currently enrolled?

(dropdown box, options 2-8)

20. Please enter **CHILD #1's** birth date.

Month _____

Day _____

Year _____

21. What is **CHILD #1's** height?

Feet: _____

Inches: _____

22. What is **CHILD #1's** weight?

Pounds: _____

23. What was **CHILD #1's** sex at birth? *(Refers to sex assigned at birth).*

Male

Female

24. What is **CHILD #1's** gender? *(Refers to current gender, which may be different from sex assigned at birth and may be different from what is indicated on legal documents.)*

Male

Female

My child self-identifies as:

25. Does **CHILD #1** have any dietary restrictions or food allergies?
- No, this child does not have any dietary restrictions or food allergies

Meat-free (vegetarian)

- Animal-product free (vegan)
- Gluten-free
- Nut-free
- Lactose-free
- Halal
- Kosher
- Other (please specify)

(Questions 18-25 will be repeated for each child participating)

Part 2: Adult & Family Demographic Questions

42.

Instructions: This part of the survey is also to be completed by adult participants (i.e., the 'parent'). It contains demographic questions about **yourself and your family**. Please

answer each of the following questions to the best of your ability. You may skip any questions if you do not feel comfortable providing an answer.

43. In what year were you born?

44. In what month were you born?

(dropdown box, month options)

45. What is your **height**?

Feet:

Inches:

46. What is your **weight**?

Pounds:

47. What was your sex at birth? *(Refers to sex assigned at birth.)*

- Male
- Female

48. What is your gender? *(Refers to current gender which may be different from sex assigned at birth and may be different from what is indicated on legal documents.)*

- Male

Female

I self-identify as:

49. What is the highest level of education you have obtained?

- No certificate, diploma, or degree
- High school or equivalent diploma
- Postsecondary qualification (i.e., trades certificate)
- College diploma
- University degree - undergraduate
- University degree – graduate
- Other (please specify)

Prefer not to say

50. Which category or categories best describe your family?

- Black
 - Chinese
 - Hispanic, Latinx, or of Spanish origin
 - Indigenous (e.g., First Nations, Métis, Inuk/Inuit, etc.)
 - Japanese
 - Korean
 - Middle Eastern or North African
 - Southeast Asian (e.g., Vietnamese, Cambodian, Thai, etc.)
 - South Asian (e.g., east Indian, Pakistani, Sri Lankan, etc.)
 - West Asian (e.g., Iranian, Afghan, etc.)
 - White
 - Some other race, ethnicity, or origin; please specify
-
- Prefer not to say

51. What is your marital status?

- Single (never legally married)
- Legally married (and not separated)

- Civil union/common-law
- Divorced
- Separated
- Widowed
- Other (please specify)

52. What is your current employment status? **(If this has changed in relation to COVID-19, please answer based on your employment status before these changes).**

- Employed, full time
- Employed, part time
- Self-employed
- Unemployed
- Other (please specify)

53. What is your best estimate of your total annual household income, before taxes and deductions, from all household members combined? **(If this has changed in relation to COVID-19, please answer based on your family income before these changes).**

- Under \$20 000
- \$20 000 – \$29 999

- \$30 000 - \$39 999
- \$40 000 - \$49 999
- \$50 000 - \$59 999
- \$60 000 - \$69 999
- \$70 000 - \$79 999
- \$80 000 - \$89 999
- \$90 000 - \$99 999
- \$100 000 or more

54. Are there any adults living in your home besides the child(ren)'s biological or adoptive parents? **(If this has changed in relation to COVID-19, please answer based on your living situation before these changes).**

- No, all of the adults living in our home are the child(ren)'s biological or adoptive parents
- Grandparent(s)
- Step-parent(s)
- Unmarried partner of the primary parent(s)
- Other (please specify)

55. In which city/town in Ontario does your family reside?

Part 3: Non-Parental Food & Beverage Questions

56. This section is to be filled out by you, the parent—many of these questions will also require **the help of your child(ren)**. If you have more than one child assisting you, you will be asked to complete all of the questions below for **CHILD #1** first, followed by **CHILD #2**, etc.

For this section of questions, we are hoping to learn more about only the foods and beverages provided to your child(ren) by sources other than their parents. Please take a minute to read through the following descriptions and examples of the types of foods and beverages we are looking for.

Definition of Non-Parental Foods & Beverages

We are ONLY interested in foods and beverages that are provided to children from **people who are NOT parents**. These can include foods and beverages provided **inside OR outside of the child(ren)'s home, whether or not a parent is present**.

Examples of foods and beverages that you SHOULD consider when answering the questions below include, but are not limited to, your child(ren) receiving:

- cupcakes and/or juice boxes at school for a class party
- pizza and pop at a friend's birthday party
- a lollipop from a health professional at the doctor's office (even if you are present)
- a granola bar or orange slices at a soccer game

- an extra snack from a friend or the school secretary
- snacks, fast-food meals, or sugary drinks provided by a grandparent or family member while looking after your children
- candy or pop that a babysitter gave your child(ren), even if from your own home, if your permission was not given ahead of time

Please DO NOT include:

- ❖ Please **DO NOT** include foods or beverages that have been pre-ordered by parents, including milk programs or hot lunches, pizza days, etc.
- ❖ Foods and/or beverages that a parent provided the funds for, or intended for the children to consume the food/beverage (e.g., leaving a baby-sitter money to order takeout).

****Note about COVID 19 safety measures****

We are hoping to learn more about the frequency, types, and sources of foods and beverages that your child(ren) **TYPICALLY** received from **other people—not their parent(s)--BEFORE COVID-19**. Please answer the following questions while thinking about a **typical week for your child(ren), before COVID-19 safety measures were in place, and before schools were closed**.

57. According to you, and ***without asking your child***, approximately how many times **per week** do you believe that **CHILD #1** was provided with any foods or beverages from **somebody other than a parent** (before COVID-19)?

- Never
- Less than 1x/week
- 1x/week
- 2x/week
- 3x/week
- 4x/week

- 5x/week
- 6x/week
- 7x/week
- More than 7x/week

58. Similar to the previous question, but this time according to CHILD #1, how many times **per week** did **somebody other than their parent(s)** provide them with any foods or beverages (before COVID-19)?

**Again, please be sure that your child understands what kinds of foods and beverages (and from whom) we are referring to in this study.*

- Never
- Less than 1x/week
- 1x/week
- 2x/week
- 3x/week
- 4x/week
- 5x/week
- 6x/week
- 7x/week
- More than 7x/week

lesson; please specify) _____ _____												
Religious event (please specify) _____												
Childcare location outside the home (e.g., babysitter 's house)												
In the child's home (e.g., from a caregiver or childcare provider)												

Ice cream/frozen yogurt												
Energy or sport drinks (e.g., Gatorade, Red Bull, etc.)												
Other sugar-sweetened beverages (e.g., pop, hot chocolate, Frappuccino, vitamin water, sweetened fruit juice, etc.)												
100% fruit juice (no sugar added)												
Fast foods (e.g., hamburgers, hot dogs, pizza, etc.)												

Sandwiches/wraps/subs												
Grain-based meal (e.g., pasta, rice, etc.)												
Home-prepared meals not listed above												
Other food or beverage not listed above (please specify) _____												

61. Please work with **CHILD #1** to indicate, by selecting the appropriate bubble, how many times per week they were provided with foods and beverages **from the following non-parental sources** (before COVID-19):

	Nev er	Les s tha n 1x/	1x/ we ek	2x/ we ek	3x/ we ek	4x/ we ek	5x/ we ek	6x/ we ek	7x/ we ek	More than 7x/w eek	I do n't kno w	Not applic able
--	-----------	-----------------------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------------------	----------------------------	-----------------------

<p>Other school staff (e.g., principal, secretary etc.; please specify) _____ _____</p>												
<p>Grandparent</p>												
<p>Other relative (please specify) _____ _____</p>												
<p>Childcare provider _____ _____</p>												

<p>Healthcare professional (please specify) _____</p>												
<p>Religious leader _____</p>												
<p>Neighbour</p>												
<p>Other source (please specify) _____</p>												

62. Please work with **CHILD #1** to indicate, by selecting the appropriate bubble, how many times per YEAR they were provided with foods and beverages *at the following special events* (before COVID-19):

63. Thank you for completing this survey with **CHILD #1!**

(questions 57 – 77 will be repeated for each child helping)

Once the above questions are completed for all children, the survey will direct to this:

Part 4: Parental Attitude and Awareness Questions

78. These questions are to be completed by the parent participant only. Please keep in mind the above definitions relating to foods and beverages provided to children from non-parental sources. Please also answer these questions while thinking about your **normal circumstances, rather than your current circumstances during the COVID-19 pandemic.**

79. Please indicate to what extent you agree or disagree with the following statements:

I am concerned about the foods and beverages provided to my child(ren) **from non-parental sources.**

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------

I feel that the foods and beverages provided to my child(ren) from non-parental sources have a **negative impact on their overall diet quality.**

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------

I feel that the foods and beverages provided to my child(ren) from non-parental sources have a **positive impact on their overall diet quality**.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------

It is important to me that I am **aware of** the foods and beverages provided to my child(ren) from non-parental sources.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------

I feel I have **control over** what foods and beverages are provided to my child(ren) from non-parental sources.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
-------------------	----------	-------------------	----------------------------	----------------	-------	----------------

80. Approximately what percentage of the foods and beverages provided to your child(ren) from non-parental sources **were you aware would be provided** to them ahead of time?

Sliding scale 1-100

81. After discussing this issue with your child(ren), approximately what percentage of the foods and beverages provided to your child(ren) from non-parental sources would you say your child(ren) **inform(s) you about?**

Sliding scale 1-100

82. Please feel free to share any additional comments you have about the foods and beverages provided to your child(ren) from non-parental sources:
-

83. Lastly, please tell us how the ongoing COVID-19 pandemic has impacted the foods and beverages provided to and consumed by your child(ren), inside and/or outside of the home and from any source (i.e., parents and/or non-parents).
-

New Block: Wrap Up

84. Do you provide consent for us to use **direct quotes (without any names or identifying information)** from your text-box answers for study-related presentation/publication/report purposes? **Please note that this is optional.**
- Yes
 - No
85. If you interested in being contacted in the future **either** to receive an **End of Study Letter** to learn more about the results of this study **and/or** to be informed of **future similar research participation opportunities**, please follow the link below. This link will take you to a two-question survey that will ask you to specify which communication(s) you would like to receive, and to provide your email address. **This is optional. Please note that you must provide your email to receive either of these communications; if you do not provide your email, we will not contact you.**

https://uwo.eu.qualtrics.com/jfe/form/SV_cVbCdQh3Koi9Im9

If yes, will be directed through link to a **separate survey** (not linked to survey data):

1. You have been directed to this page because you indicated that you would like to receive **the end of study letter** and/or you would like to be contacted for **future research participation opportunities**. Please indicate which of the following communications you would like to receive from this lab. Please note that receiving either of these communications is **optional**.

I would like to receive the End of Study Letter.

I would like to be contacted about future research participation opportunities.

2. Please provide your email address below. **You must provide your email address if you wish to receive the above communications.**

Survey Termination Message:

Thank you for completing this survey! We greatly appreciate your time and support.

Wishing you and your child(ren) much health and happiness.

Appendix D: Letter of Information



Project Title: The provision of foods and beverages to children from non-parental sources: An exploratory study

Principal Investigator:

Dr. Shauna Burke, Faculty of Health Sciences, University of Western Ontario

Research Team:

Program Coordinator: Emilia Klassen, BSc.

Masters student, Health and Rehabilitation Sciences Program, University of Western Ontario

Please note that your participation in this study requires the participation of at least one (and up to three) of your eligible children. You will be asked to provide consent, and your child(ren) will be asked to provide assent to participate at the beginning of the online survey.

Letter of Information

1. Invitation to Participate

You are being invited to participate in this research study because you are a parent/legal guardian (referred to hereinafter as 'parent') of one or more children in Grades 2 – 8 at an

Ontario school. This study will aim to provide a better understanding, broadly, of the foods and beverages provided to children from sources that are not their parents.

2. Purpose of the Letter

The purpose of this letter is to provide you with the information required to make an informed decision regarding participation in this research study. It is important for you to understand the purpose of this study and what your involvement will entail. Please take the time to read this letter carefully. Feel free to ask questions if anything is unclear, or if there are any words or phrases you do not understand. **You can contact the Program Coordinator, Emilia Klassen at any time.** If any changes are made to the study, all participants will be informed, as it may affect your decision to participate.

3. Purpose of this Study

The food environment plays an important role in children's health. The objectives of the study are to examine:

- The **type(s), quantity, and frequency** of foods and beverages provided to children from non-parental sources
- The **quality** of foods and beverages provided to children from non-parental sources
- The **contexts** (i.e., location and provider) in which non-parental foods and beverages are most commonly provided to children from non-parental sources
- **Parental awareness of and/or parental responses to** non-parental foods and beverages
- Which and how much of the foods and beverages provided to children from non-parental sources are **consumed**
- **Other factors** (e.g., body composition, child or parent demographic information) that might be related to the provision and/or consumption of foods and beverages from non-parental sources
- How the current **COVID-19 pandemic** is impacting the foods and beverages that are provided to and consumed by children (by parents or non-parents) in the home environment

4. Inclusion Criteria

Parents and their children will be eligible to participate in the study if:

- a) The child(ren) are in Grades 2-8 at an Ontario school;
- b) The parent can speak, read, and write in English;
- c) The parent can communicate with their child(ren) clearly (e.g., verbally, written, through sign language, etc.);

- d) The child(ren) attend school outside the home on a daily basis (under **normal circumstances**; we understand that this will not be the case during COVID-19-related school closures); and
- e) The parent provides consent and the child(ren) provide assent to participate in the study.

For the purpose of the present study, a ‘parent’ is considered to be any adult living in the same home as a child that takes on a consistent feeding role of that child (e.g., a biological or adoptive parent, a step-parent, etc.).

Parents’ participation requires the participation of their child(ren) to assist in answering some survey questions. Parents may participate with up to three (3) eligible children.

5. Exclusion Criteria

The following are reasons for which an individual would be excluded from participation in this study:

- The parent cannot speak, read, and/or write in English;
- The parent does not provide consent or the child(ren) do not provide assent;
- The family does not live in Ontario;
- The parent does not have one or more children in Grades 2 – 8;
- The parent’s child(ren) does/do not attend school outside of the home on a daily basis **under normal circumstances**; and/or
- The parent cannot obtain assistance from their child(ren) when completing the survey.

6. Study Procedures

The current study consists of a one-time online survey. Upon recruitment and after providing consent, you will be asked to complete this online survey while will likely take about 20-30 minutes to complete. The survey is to be completed by the parent, with the help of their child(ren), and includes child, parent, and family **demographic** questions

(e.g., date of birth, height, weight, education, etc.). It also includes a series of questions about **foods and beverages provided to children from non-parental sources**, including details about the types and amounts provided and consumed as well as the locations and sources of provision. Parents are also asked questions regarding their prior **awareness and response** to these non-parental foods. Lastly, there is one final question about how the current **COVID-19** pandemic is impacting the foods and beverages provided to and consumed by children in the home environment.

Any questions you have about this study can be directed to the Program Coordinator, Emilia Klassen, at eklasse9@uwo.ca.

7. Possible Risks and Harms

There are no known or anticipated physical, psychological, or emotional risks or discomforts associated with adults participating in this study. We anticipate that, depending on family structure, it is possible that children may experience some negative consequences as a result of sharing with their parents the foods and beverages that are provided to them from non-parental sources. We encourage you, as parents, to consider approaching the conversations you have with your child(ren) openly and without judgment; such conversations might also be viewed as an opportunity to reflect on and communicate about specific aspects of your child's day with support and positivity.

8. Possible Benefits

By participating in this study, parents may become more aware of the types, frequency, and sources/settings associated with the provision of foods and beverages to their child(ren) from non-parental sources. Parents will also become aware of the child(ren)'s consumption of such foods and beverages, and will have an opportunity to consider their own awareness of such events. Lastly, the findings of the current study could increase awareness of and provide a basis for proposed regulations or guidelines around the provision of foods and beverages to children in various settings, which in turn could

ultimately lead to a healthier environment for children at home, school, and in the community.

9. Compensation

There is no compensation associated with participation in this study.

10. Voluntary Participation

Participation in the study is completely voluntary. You may withdraw from the study at any time without providing a reason. You have the right to request the withdrawal of your information if you choose to withdraw from the study. Please see the Confidentiality Section of this Letter of Information, which speaks to the data collected after withdrawal from the study. You do not have to take part in the study if you do not want to. You have the right to choose not to answer any question. You should only agree to take part in this study if you are satisfied with the information provided to you about your voluntary participation.

11. Confidentiality

Each respondent will be provided with a unique study ID number immediately after children provide assent. **You will need to retain this number for your records, should you choose to withdraw your data. You will not be able to withdraw your data without this number.**

Your research results will be stored in the following manner:

- All electronic data will be stored on a secure network behind institutional firewalls at Western University. All electronic files will be password protected. Only the research team directly involved in this study will have access to these data.

The following identifiable information will be collected:

- **Partial date of birth** [for adults] and **full date of birth** [for children] (to be used to calculate BMI and BMI-z)
- **Partial address** [city/town only] (to be used for potential location-related data analysis)
- **Email address** (this is **optional**, and will only be collected if you wish to receive further communications from this research team)

Your/your child's personal health information (PHI) will be collected using a secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect all data collected. In addition, Western's

Qualtrics server is in Ireland, where privacy standards are maintained under the European Union safe harbour framework.

The study data will be kept for a minimum of 7 years. Depending on the possibility and length of a follow-up study, it may be used for a longer period. Withdrawal of your participation does not necessarily include withdrawal of any data compiled up to that point, however there will be no personal identifiers attached to the compiled data. Once the study or follow-up study is completed, hard copies of data or personal identification will be shredded. All other data will be deleted from hard drives and flash drives. Representatives from University of Western Ontario Non-Medical Research Ethics Board may require access to study records for quality assurance purposes.

12. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact the Program Coordinator or the Principal Investigator. Contact information is listed below.

There is a place at the end of the survey to provide your email if you would like to receive further information about the study results.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact:

The Office of Research Ethics at Western University

If you are calling from outside London, Ontario, you can call:

Office of Human Research Ethics

13. Publication

The results of this study will likely be published in peer-reviewed journals as well as in a graduate student thesis. Any identifying information will not be used in any publications.

14. Participation in Concurrent or Future Studies

If you are participating in another study at this time, please inform the research team to determine if it is appropriate for you to participate in this study. At the end of the online survey, there will be a space to indicate whether you wish to participate in future studies conducted in this research area. This is **completely optional**.

We encourage you, whether you decide to participate or not, to share this study information with other families who may be interested in and able to participate.

Thank you for your time and consideration!

Appendix E: Child Assent Script

Please ensure that the self-identified ‘primary parent’ for the purpose of this study reads this script to all children who may participate. It is essential that your children understand what the purpose of this study is, and what their rights as participants are.

Our family has been invited to participate in a research study about the foods and drinks that other people give you—that means anyone else, NOT including your parents. If we decide to participate, we will fill out a survey together on the internet, and it would take about 20 minutes. Is this something you’d be interested in helping me with?

(If yes, continue)

If you agree to help me fill this survey out, you would be a participant in this study. As a participant, the researchers have to protect your confidentiality, which means they can’t share any of your personal information with anyone else. To be a participant, you will need to provide assent, which means that you check a box that says you agree to let the researchers use the information you give them. You can change your mind at any time. If you don’t want to keep filling out the survey, if you don’t want to answer any of the questions, or if you don’t want the researchers to use your information anymore, you can tell me and we can stop doing the study.

The survey has some questions about you, like where you live, your height, your weight, and your gender, for example. It also has questions about the foods and drinks that people **other than your parents** give you. The researchers want to know what kinds of foods and drinks other people give you, how often people give them to you, if you actually eat or drink them, who gives them to you, and where you get them. They will also ask some questions for just the parents to answer. They also want to know how the COVID-19 outbreak might be affecting what we eat and drink while we are at home. The researchers will use your answers to learn more about how the foods and drinks that other people give you, and how being home right now, affects kids’ nutrition and health. They will

collect this information from lots of families like us and will also write some papers about it so that others can learn from this information too.

Do you understand? Do you have any questions?

*****Please note that if your child(ren) have any questions that you cannot answer about the study, you can direct any questions to Emilia Klassen at eklasse9@uwo.ca*****

You don't have to do this study. You should only fill this survey out with me if you want to. Do you want to help me fill it out?

If at least one of your eligible children would like to participate with you, there is space for up to three of your child(ren) to provide assent below. Thank you for your interest and support.

Curriculum Vitae

Name: Emilia Klassen

Post-secondary Education and Degrees: M.Sc., Health Promotion University of Waterloo
Health and Rehabilitation Sciences Program
The University of Western Ontario
London, Ontario, Canada
2018-2020

B.Sc., Kinesiology
University of Waterloo
Waterloo, Ontario, Canada
2013 – 2018

Honours and Awards: Canadian Institutes of Health Research (CIHR) Scholarship
2019 – 2020

Faculty of Health Sciences Graduate Tri-Council Scholarship
Western University
2018

Related Work Experience Teaching Assistant
The University of Western Ontario
2019 – 2020

Project Associate
University of Waterloo
2017

Publications:

Hall, P. A., Lowe, C. J., Safati, A. B., Li, H., **Klassen, E. B.**, & Burhan, A. M. (2018).
Effects of left dlPFC modulation on social cognitive processes following food sampling.
Appetite, 126, 73-79.