

Fast Food & Dine-In Restaurant Apps and Children's Privacy:

Exploring how children's data and privacy are being protected on the mobile applications of top Canadian fast food and dine-in restaurants.



The OUTLIVE Lab

FOOD AND NUTRITION POLICY FOR OBESITY PREVENTION

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Monique Potvin Kent, PhD

Christine Mulligan, PhD

Grace Gillis, BHSc

Lauren Remedios, MSc

Christopher Parsons, PhD

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EXECUTIVE SUMMARY

INTRODUCTION

Globally and in Canada, non-communicable diseases and childhood overweight and obesity remain significant public health concerns and food marketing has been identified as a contributing factor to children's sub-optimal diets. Youth are frequent users of digital media (e.g., social media, mobile apps), and are highly exposed to marketing for unhealthy food and beverage products, in part through targeted marketing on digital platforms. Such marketing is highly effective and relies on the collection of personal data to inform which ads companies will push toward specific consumers based on their online preferences and behaviours. Food company-owned mobile apps can be a potentially powerful tool for food companies to collect data on consumers – many of whom are children – and bombard them with promotional content.

Questions have been raised around children's right to privacy while participating in the digital world, as well as their protection from food marketing on this evolving platform. The World Health Organization has recommended the implementation of comprehensive policies that restrict unhealthy food marketing on all media and settings to which children are exposed. For digital media specifically, they recommend that countries consider taking a child rights-based approach to protecting children's privacy online. However, none of Canada's current or proposed policies related to privacy or food marketing explicitly or intentionally address the protection of children's data and privacy while using mobile apps or protect them from specifically from behaviourally-targeted marketing for unhealthy food and beverage products.

RESEARCH QUESTIONS

This exploratory study was designed to address two research questions to gain insight into the privacy policies of top food company mobile apps and the types of data that are being collected while children are using these apps:

- 1. What policies do Canadian food and beverage companies have in place to protect children's data and privacy while they are using mobile applications?**
- 2. What data are Canadian food and beverage companies collecting on children who use their mobile applications?**

METHODOLOGY

Research Question 1 was addressed by downloading and analyzing the privacy policies and terms of service agreements for the mobile apps of 26 top Canadian fast food and dine-in restaurants. The policy scan was guided by a series of questions pertaining to several topics, such as the availability and features of the privacy policy, the types of data or personal information that are collected, how companies distinguish between children and adults, the processes to access one's data and the security of such data.

An exploratory study was conducted to answer Research Question 2, whereby a convenience sample of 11 children (aged 9-12 years) were recruited and asked to use and place food orders using one of five mobile apps from top fast companies in Canada that they already had on their devices prior to beginning the study. Then, parents of participants sent Access to Information (ATI) requests to the corresponding food companies in order to obtain the data that had been collected on their children, as per the Personal Protection and Electronic Documents Act (PIPEDA). We then descriptively analyzed the process and results of the ATI requests (e.g., proportion of fulfilled requests, proportion fulfilled in the PIPEDA-mandated 30-day period) and used a content analysis to describe the types of personally identifiable and other data that was collected on children while using the mobile apps, according to the successfully fulfilled ATI requests.

RESULTS

In total, the privacy policies of 26 companies (21 fast food and five dine-in restaurants) were analyzed:

1. **The age of intended users was only indicated by 46% of food companies, of which 10 (39%) specified that their app was not intended for children under 13 years of age.**
 - However, none of the food companies have a compulsory age verification process.
2. **92% of companies disclosed which types of data they collect on app users (e.g., name, contact information, order history).**
 - However, 23 companies (89%) did not make any distinction between information pertaining to children or adults, and 19% did not describe a protocol for action if they inadvertently collected data on children.

A sample of n=11 Canadian children used the mobile apps of five fast food restaurants and parents sent 24 total ATI requests to the respective companies:

1. **Only 11 (45.8%) of the ATI requests were fulfilled by their respective food company and only 7 (29.2%) were fulfilled within the 30-day period required by PIPEDA.**
 - Children's data were received from four (16.7%) ATI requests.
2. **Sociodemographic information on the child participants, such as first name, last name, email, country, etc. was collected by all companies.**
 - Some collected further information: order details (e.g., date and time, and total purchase amount) and any promotional offers that the participant had access to (e.g., promotion name, start and expiration date, description, etc.).
 - One company tracked communication with the participant, such as push notifications.
 - Another collected detailed information regarding participants' subscription in their rewards program, gift card use, registration with in-store WiFi, and analytics on app usage (e.g., visit date and time, operating system and version, app version, total clicks, etc.).

CONCLUSIONS & POLICY RECOMMENDATIONS

This study illustrated that current fast food and dine-in restaurant privacy policies are insufficient and do not limit children's use of mobile apps intended for older audiences. Moreover, we found that children's data is being inadvertently collected via fast food mobile apps, however, the full extent of children's data collected is unclear due to inconsistent responses and outcomes of the ATI requests.

Based on the results of this study, we propose the following policy recommendations:

- 1. Federal policies need to be strengthened to explicitly consider the protection of children's data and privacy in digital media.**
- 2. Food marketing restrictions need to be adequately broad to include all digital media to which children are exposed and incorporate child's rights considerations.**

INTRODUCTION

THE PROBLEM: FOOD MARKETING AND CHILDHOOD OBESITY

Non-communicable diseases (NCDs), and childhood overweight and obesity remain a significant public health concern.¹⁻⁶ The diets of Canadian children have repeatedly been found to be poor, which is concerning given the well-evidenced link between diet and nutrition-related chronic diseases such as obesity.⁷⁻¹⁰

Globally, unhealthy food and beverage marketing has been identified as a contributing factor to children's sub-optimal diets¹¹⁻¹⁵. A growing body of systematic reviews has indicated that children are vulnerable to food marketing and that it impacts their food preferences, intake, and requests.^{11,13-15} This problem is intensified by the evidence indicating that almost all marketing children are exposed to promotes food and beverage products that are high in sodium, sugars and/or saturated fat.^{13,16,17}

Research on food marketing in Canada has found that children are highly exposed to food marketing, across all media (e.g., television, digital media including social media) and in settings where they learn and play (e.g., at school, and in recreational centre).¹⁸⁻²³ For instance, a study published in 2019 estimated that Canadian children, aged 7-11 years, are exposed to more than 1,500 food and beverage ads per year on social media, while another study published in 2023 showed that, across 36 television stations, children, aged 2-11 years, were exposed to more than 2,000 food and beverage ads.²⁴

FOOD MARKETING ON DIGITAL MEDIA

Children and teens are increasingly targeted by food advertising on digital media. Such marketing occurs through many platforms, such as on social media, on company/brand websites, and on mobile apps that integrate potentially child-targeted advertising into the user experience, including sending text and e-mail messages or mobile notifications with promotional content.²⁵ Evidence from Canada has revealed that children, aged 7 to 16 years, observe an average of 2.1 food ads per 10 minutes of social media use.²¹ The impact of digital food marketing on children is driven in part by children's screen time, with Canadian studies indicating that >25% of children spend one to two hours a day on weekdays and more than three hours/day on weekends on digital devices.^{26,27} Another contributing factor to children's exposure to food marketing on digital media is the estimated \$628 million in food and beverage advertising expenditures that occurred in Canada in 2019, at least 12% of which were spent on digital media.²⁸ While this percentage may appear small, it is important to consider that digital marketing practices are much more cost-efficient than traditional marketing practices, requiring food companies to spend less than half the price to reach an equal audience.²⁹ Moreover, with the rise of behavioural or targeted-marketing practices, companies can directly reach users with the ads that they are most-likely to respond to and be impacted by.³⁰ However, targeted marketing requires the extensive collection of data on consumers to inform the types of ads that food companies will push toward each individual user of their platform³¹.

The World Health Organization (WHO) has highlighted that targeted marketing is intrinsically linked with personal privacy, and that this presents ethical issues related to children's rights online and their vulnerability to marketing for unhealthy foods and beverages.³¹ There has been some research related to children's data and privacy on mobile apps. One study found that two-thirds of tested child-specific mobile apps were consistently transmitting data to up to 30 unique third-party domains while children were using them.³² Another study identified more than 60,000 'kids apps' and found that most presented potential privacy issues, such as displaying targeted marketing, linking directly to social media or offering in-app purchasing.³³ A scoping review of commercial app evaluation studies identified lax security measures and acknowledged that research related to data handling has not kept pace with the rapid expansion of mobile app development.³⁴

Food company mobile apps present a potentially powerful platform by which food and beverage companies can target youth through the collection of personal information and data on their food preference and purchase behaviours. While many of these food company mobile apps are geared toward a general audience, recent data from the United States suggests many major sugary beverage and fast-food companies offer mobile apps, which may also be child-targeted in nature.^{35,36} While no research in Canada or elsewhere has examined the types of data collected on child users of food company mobile apps, most youth (i.e., >70%) in Canada have their own tablet

or smartphone and adolescents make up the greatest share of followers of highly advertised food and beverage brands on social media, suggesting that data is potentially being collected on youth by food companies.^{21,25} Moreover, a recent survey of more than 1,300 Canadian children aged 9-12 found that 65% of children reported having at least one food company app downloaded to their mobile device, indicating that mobile food apps are in fact incredibly popular among Canadian children (Potvin Kent et al (2023); in preparation).

CANADIAN POLICY CONTEXT

With regard to protecting children from the impact of food marketing in general, the WHO has recommended that countries develop comprehensive policies to restrict marketing of unhealthy food.^{17,37} Based on the latest evidence, they recommend restricting the marketing of unhealthy food to which children are exposed in all media and settings, including digital media.³⁸ The WHO has also made suggestions for addressing food marketing in the digital space specifically. Namely, they highlight the importance of maintaining children's right to engage in online activity without their rights to privacy and health being compromised for economic reasons (i.e., marketing). Thus, they suggest using a rights-based approach, combined with other best-practice guidance when developing policies to protect children from marketing for unhealthy food products³¹.

The policy environment governing digital marketing to children is unique in Canada. All commercial products that are exclusively designed for children or that particularly appeal to children under the age of 13 (e.g., toys, candy) are prohibited from being promoted to children within the province of Quebec, while in the rest of Canada, unhealthy food marketing to children is self-regulated by 16 large food and beverage companies that voluntarily participate in the Children's Food and Beverage Advertising Initiative.^{39,40} In digital media, these companies have pledged to only advertise self-defined "better-for-you" products on company-owned websites that are directed to children, on mobile devices, and in branded interactive games.⁴⁰ Social media is excluded given that children are supposed to be >13 years before having accounts on these platforms. Research has, however, shown this initiative has not been effective at reducing child exposure to unhealthy food advertising on television and in digital media.⁴¹⁻⁴⁴

To date, targeted marketing through the collection of personal information on digital media, such as mobile food-branded apps, are not specifically addressed through current Canadian food marketing policies. Health Canada has recently proposed an updated federal policy to restrict marketing primarily directed at children on television and on digital media, including websites, mobile apps, online games and more.⁴⁵ There is also a new self-regulatory industry food marketing policy that was implemented in July 2023.⁴⁶ However, it is unclear how or if targeted marketing on digital platforms will be addressed by either of these policies, and neither mention of the protection of children's data, privacy, or rights.

Information collected online in Canada is governed by the Personal Protection and Electronic Documents Act (PIPEDA), first established in 2000 and most recently updated in 2015.⁴⁷ According to PIPEDA, companies must obtain consent to collect personal information, and such information can only be used for the purpose described when obtaining consent. This information is often described within the company's privacy policy or terms of service agreement. However, there is evidence to suggest that such documents are confusing to understand even for experts, let alone children, and that they can be deceptive.³¹ When considering children's use of food company mobile apps, it is thus important to understand exactly what policies companies have in place and if these are sufficient to protect youth who use their platforms.

Individuals are also allowed to access their data, challenge its accuracy, and ask for it to be deleted. Under PIPEDA, should an individual request access to their personal data, companies must comply within 30 days, at little to no cost.⁴⁷ Should a company refuse to provide the requested data, it must provide written reasons to the requesting party. Children and youth are not specifically addressed as part of this Act; people of all ages are considered similarly. However, PIPEDA does suggest that companies that engage with children should take extra care and limit the personal data they collect (if any). Parents or guardians of children are also allowed to request data on behalf of their child. Some research has leveraged PIPEDA to access information on the data being collected from users of online services in other industries, such as fitness tracking services, online dating services and telecommunication service providers.⁴⁸ To our knowledge, this data access process has not been used to explore the food industry's data collection practices in Canada, or with children.

RESEARCH QUESTIONS

With the rise of digital media usage and children's exposure to food marketing on digital platforms, it is important to consider how children's privacy and data are being protected. This exploratory study was designed to gain insight into the privacy policies of top food company mobile apps and the types of data that are being collected while children are using these apps. Two primary research questions were addressed:

RESEARCH QUESTION 1 (RQ1):

What policies do Canadian food and beverage companies have in place to protect children's data and privacy while they are using mobile applications?

RESEARCH QUESTION 2 (RQ2):

What data are Canadian food and beverage companies collecting on children who use their mobile applications?

RESEARCH METHODOLOGY

STUDY OVERVIEW

This was an exploratory study consisting of a policy scan and content analysis of food company privacy policies (RQ1), as well as a cross-sectional study to determine the nature of the data that is being collected on children while using food company mobile applications (RQ2). The cross-sectional study was approved by the University of Ottawa Research Ethics Board (Approval number H-01-23-8515).

RQ1 – METHODOLOGY

DATA COLLECTION

To determine what types of policies Canadian food and beverage companies have in place to protect children's data and privacy while using their mobile applications, a scan of food company privacy policies was conducted. Most Canadian food and beverage companies with mobile applications are quick service, fast-food or dine-in chain restaurant companies with apps to facilitate mobile ordering and the promotion of their products to app users. Therefore, for the purposes of this study, the top 30 chained food service restaurants by market share in Canada were determined (as of 2021). Chained food service restaurants include fast food restaurants (i.e., where customers order and pick up food at a counter) and dine-in restaurant chains (i.e., where customers receive food service while sitting at a table). Of these 30 restaurants, those with company-owned mobile apps available for download in the Canadian iOS App Store were selected. The mobile apps of n=27 companies were downloaded in November 2022 and checked for the availability of public privacy policies and/or terms of service agreements. All companies except one had privacy policies and/or terms of service agreements available online for download. In total, the documents of 26 companies were included in this analysis, n=21 of which were fast food restaurants and n=5 were dine-in.

ANALYSIS & OUTCOMES

All downloaded privacy policies and terms of service agreements were reviewed and data were extracted from the documents following a series of questions adapted from previous research.⁴⁹ Questions fell under a series of topics, such as information pertaining to the availability and features of the privacy policy, the types of data or personal information that are collected, how

companies distinguish between children and adults, the processes to access one's data and the security of such data. The full list of questions can be found in Appendix A. Data were analyzed using a flexible deductive content analysis approach, with the data collection questions used as primary codes, but with the flexibility to include any other pertinent information within the analysis. Data collection was reviewed by a second researcher to ensure completeness and accuracy. All collected data was tabulated and summarized quantitatively (i.e., proportion of yes/no answers to data collection questions) and where necessary, with qualitative summaries of the document content related to each question.

RQ2 - METHODOLOGY

PARTICIPANTS & RECRUITMENT

Given the exploratory nature of this study, this study focused on the mobile apps of the top five chained food service companies by Canadian market share, all of which were fast-food companies. We recruited a convenience sample of 11 English-speaking children, aged 9-12 years old, living in Canada. Children were eligible to participate if they already had one of the five mobile apps downloaded to their mobile device with an account already created in their name. Parents/guardians of participants provided informed consent to participate in the study and were made aware that their assistance would be necessary. Informed assent was obtained from children.

STUDY PROTOCOL

Children were instructed to use whichever of the five included mobile apps they had on their device for approximately five to 10 minutes, including placing a mobile food order from their account. Once participants had used the app and received their order, parents of participants were asked to submit an Access to Information (ATI) request on behalf of their child to the company's privacy officer (identified via the document scan from RQ1), using a pre-drafted email template. Parents were asked to notify the research team when the request had been sent and share any response(s) received. As per PIPEDA, companies have 30 days to respond to individual's requests for information, unless the requesting individual is notified otherwise⁴⁷. Therefore, if no data had been received 30 days after the initial ATI request was sent, parents were instructed to make a follow-up request to the company. Participation was considered complete if a) the ATI request was fulfilled, and data was received; or b) no data was received by the study termination date (June 1, 2023) or 30-days post follow-up email. The study protocol and ATI request timeline is summarized in **Figure 1**.

This study aimed to have approximately four participants complete ATI requests for each of the five mobile apps. Participants were able to participate using more than one app, if they already had them downloaded on their device before they were recruited to participate in the study. The research team was available to facilitate all communications between parents and the food companies, and all formal requests were made using pre-drafted email templates. Parents and participants were compensated with a \$30 gift card of their choice and reimbursed for up to \$20 of their mobile food order. Participants were compensated for each mobile app they completed the study protocol for (e.g., 2x compensation if ATI requests were completed for two mobile apps).

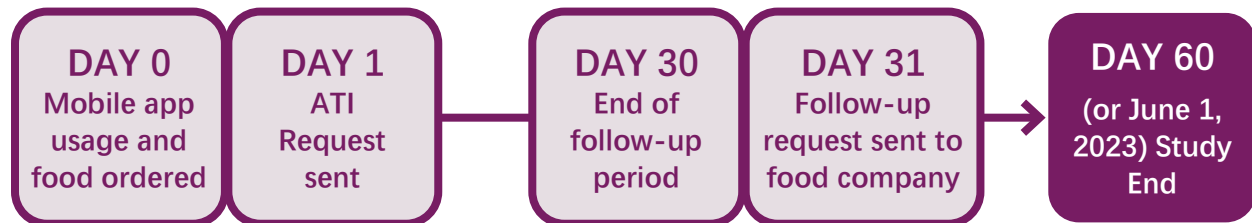


Figure 1. Summary of study protocol and ATI request timeline

ANALYSIS & OUTCOMES

All data collected from the ATI request process and the results of the ATI requests were analyzed descriptively and via content analysis, using a flexible deductive approach. Descriptive analyses included calculating the number and proportion of ATI requests that were fulfilled, those that were fulfilled within the 30-day period, those that required additional steps, and those that resulted in the receipt of children's data. ATI requests were considered to be "fulfilled" if the food company responded to the request and some sort of outcome was achieved (e.g., data received, data deleted, account closed). ATI requests were considered to have not been fulfilled if no response was received from the food company or if there was no outcome achieved. The content analysis followed a series of questions outlined in **Appendix B**, adapted from previous research.⁴⁹ Data collection questions were used as codes, with the flexibility to include any other information deemed to be pertinent. Data collection was reviewed by a second researcher for completeness and accuracy. All collected data were tabulated and summarized descriptively, overall and by food company, and elaborated with qualitative summaries. Food company names were anonymized in this analysis and any personally identifiable information on participants was not presented in the results.

RESULTS

RQ1 – ANALYSIS OF FOOD COMPANY PRIVACY POLICIES

This study analyzed the privacy policies and/or terms of service agreements for the mobile apps of n=26 fast food and dine-in restaurant companies. Key results pertaining to children's data and privacy are summarised in **Table 1**, and a fully detailed summary of the analysis can be found in **Appendix C**. Within their policies, 12 (46.2%) food companies indicated the age of intended users of their mobile application, of which 10 (38.5%) food companies specified that their app was not intended for children under 13 years of age. While some food companies allowed for optional disclosure of age (i.e., by entering your birthdate), others stated that by creating a profile with that food company, participants are confirming that they are 'at least of a certain age'. None of the food companies analyzed were found to have a compulsory age verification process.

Most food companies (n=24; 92.3%) specified which types of personally identifiable information (PII) they collect (e.g., name, contact information, order history), however, 23 companies (88.5%) did not make any distinction between information pertaining to children or adults. All companies (n=26, 100%) indicated that the provision of some personal information was required in order to make an account and access their mobile services. Twenty-one (80.8%) food companies described what would happen if data was inadvertently collected on children – 11 (42.3%) food companies committed to deleting information collected from children under 13 years of age in the event they become aware of it, and nine (34.6%) food companies allowed parents whose child had provided personal information to ask for it to be deleted. Fifteen (57.7%) food companies specified a process for deleting one's information, and 22 (84.6%) of the food companies specified procedures for accessing and correcting data. None of the food companies stated a monetary cost associated with gaining access to a participant's data. Almost all the food companies (n=25, 96.2%) described who a user could complain to if they are unsatisfied with the processes laid out in their policies, and all of the food companies' privacy policies included contact information for a privacy officer. Typically, companies invited questions, comments, and requests regarding their privacy policy or terms of service agreement.

Table 1. Summary of mobile app privacy policies and/or terms of service agreements from top fast food & dine-in restaurants in Canada (n=26)¹

Features of mobile app privacy policies and/or terms of service agreements		n (%)
Link to privacy policy on the app login, 'make an account' page, or homepage	Yes	26 (100)
	No	0 (0)
Indication of age of the intended app user	Yes	12 (46.2)
	No	14 (53.8)
Statement regarding what happens if data was inadvertently collected on children	Yes	21 (80.8)
	No	5 (19.2)
Details of the specific kinds of PII collected	Yes	24 (92.3)
	No	2 (7.7)
Distinction between information pertaining to children or adults	Yes	3 (11.5)
	No	23 (88.5)
Age verification process (e.g., entering date of birth)	Yes	0 (0)
	No	26 (100)
Requirement that certain information is provided as a precursor to signing up for the service or acquiring products from the company	Yes	26 (100)
	No	0 (0)
Procedures for access to, and collection of, information	Yes	22 (84.6)
	No	4 (15.4)

¹ Data collected in November 2022

RQ2 – ANALYSIS OF ATI REQUEST PROCESS AND RESULTS

This study had n=11 unique participants who, in total, completed n=24 ATI requests for the five included apps. The number of ATI requests completed per app ranged from three (Company 2) to six (Companies 1 and 5). The ATI request process and the results overall and by food company are summarized in **Figure 2 and Table 2**. In total, 11 (45.8%) of the ATI requests were fulfilled by their respective food company between the study commencement and June 1, 2023. Company 5 had the highest proportion of fulfilled ATI requests at 83.3%, while no ATI requests were fulfilled for Companies 2 and 4. Outside of the required 30-day period, four (16.7%) ATI requests were fulfilled, all of which were sent by Company 1. Three of those requests (75.0%, 12.5% of total requests) required additional steps to be fulfilled, but all resulted in the receipt of children's data. As of June 2, 2023 (i.e., post-study end date), 13 (54.2%) of the ATI requests remain unfulfilled. Of these, eight (61.2%, 33.3% of total) ATI requests have received some sort of response from the company, and one (7.7%, 4.2% of total) ATI request received a reason for not being fulfilled. Only seven (29.2%) of the ATI requests were fulfilled within the required 30-day period. Of these, three (42.3%, 12.5% of total) ATI requests required additional steps to be fulfilled, and four (57.1%, 16.7% of total) resulted in the receipt of children's data. No ATI requests sent to Company 1 were fulfilled within the required 30-day period.

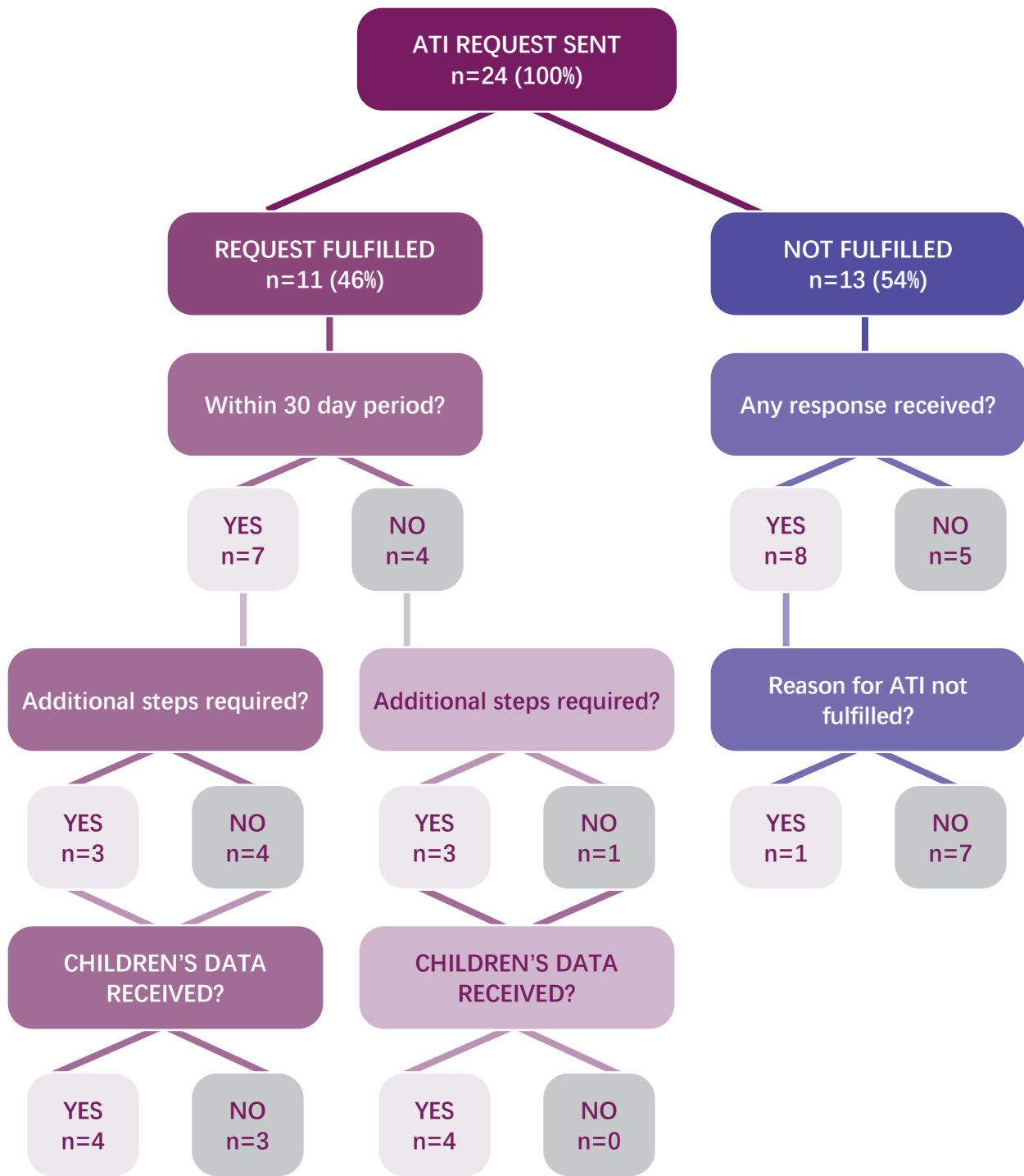


Figure 2. Summary of overall ATI request process and results from food companies

¹ Alternative outcomes to receiving children's data were: receiving the parent's account data instead (n=1), or the company closing the child's account without providing data (n=2)

Table 2. Summary of the ATI request process and results overall, and by food company

COMPANY		1 (n=6) ¹	2 (n=3)	3 (n=5)	4 (n=4)	5 (n=6)	TOTAL (n=24)
ATI request fulfilled	Yes	4 (66.7) ²	0 (0.0)	2 (40.0)	0 (0.0)	5 (83.3)	11 (45.8)
	No	2 (33.3)	3 (100.0)	3 (60.0)	4 (100.0)	1 (16.7)	13 (54.2)
FULFILLED ATI REQUESTS (n=11 Total; n=4 Company 1; n=0 Company 2 and 4; n=2 Company 3; n=5 Company 5)							
ATI request fulfilled within the required 30-day period	Yes	0 (0.0)	N/A	2 (40.0)	N/A	5 (83.3)	7 (29.2)
	No	4 (66.7)	N/A	0 (0.0)	N/A	0 (0.0)	4 (16.7)
ATI REQUESTS FULFILLED <u>WITHIN</u> THE REQUIRED 30-day PERIOD³ (n=7 Total; n=0 Company 1, 2 and 4; n=2 Company 3; n=5 Company 5)							
Additional steps required to fulfill ATI request	Yes	N/A	N/A	2 (40.0)	N/A	1 (16.7)	3 (12.5)
	No	N/A	N/A	0 (0.0)	N/A	4 (66.7)	4 (16.7)
ATI request results in the receipt of children's data	Yes	N/A	N/A	1 (20.0)	N/A	3 (50.0)	4 (16.7)
	No	N/A	N/A	1 (20.0)	N/A	2 (33.3)	3 (12.5)
ATI REQUESTS FULFILLED <u>OUTSIDE</u> OF THE REQUIRED 30-day PERIOD³ (n=4 Total; n=4 Company 1; n=0 Company 2, 3, 4 and 5)							
Additional steps required to fulfill ATI request	Yes	3 (50.0)	N/A	N/A	N/A	N/A	3 (12.5)
	No	1 (16.7)	N/A	N/A	N/A	N/A	1 (4.2)

COMPANY		1 (n=6) ¹	2 (n=3)	3 (n=5)	4 (n=4)	5 (n=6)	TOTAL (n=24)
ATI request results in the receipt of children's data	Yes	4 (66.7)	N/A	N/A	N/A	N/A	4 (16.7)
	No	0 (0.0)	N/A	N/A	N/A	N/A	0 (0.0)
UNFULFILLED ATI REQUESTS							
(n=13 Total; n=2 Company 1; n=3 Company 2 and 3; n=4 Company 4; n=1 Company 5)							
Response received from the company	Yes	0 (0.0)	3 (100.0)	3 (60.0)	2 (50.0)	0 (0.0)	8 (33.3)
	No	2 (33.3)	0 (0.0)	0 (0.0)	2 (50.0)	1 (16.6)	5 (20.8)
Reason for the ATI request not being fulfilled (For the n=8 requests that received any response)	Yes	N/A	1 (33.3)	0 (0.0)	0 (0.0)	N/A	1 (4.2)
	No	N/A	2 (66.7)	3 (60.0)	2 (50.0)	N/A	7 (29.2)

¹ Number of ATI requests sent; ² n (%); ³ Required as per PIPEDA⁴⁷

The additional steps required by the food companies to fulfill the ATI requests and reasons why the ATI requests were not fulfilled are summarized in Table 3. In at least some cases, all food companies were found to respond to ATI requests with additional steps for participants to complete in order to fulfill their request. In cases where additional steps were required, all 5 food companies sought evidence to establish the relationship between the parent and child to ensure only authorized individuals would receive the child's data. Companies 2, 3, 4, and 5 also requested information to verify the child's age (e.g., provision of a birth certificate). It was also found that the response to an ATI request varied within an individual company. For example, Company 5 communicated three different responses to participants after receiving their ATI request. While most ATI requests overall were not fulfilled, only one ATI request, sent to Company 2, received a reason as to why it had not been fulfilled. In this case, the company indicated that the proper formatting of the information requested may take longer than initially anticipated.

Table 3. Summary of observed additional steps required to fulfill ATI request and reasons why requests were not fulfilled

	Additional steps required to fulfill ATI request	Reasons for ATI not being fulfilled
COMPANY 1	<p>The company sought to establish a legitimate connection between the parent’s email address and the child’s email address before disclosing information about the child. The child was asked to send another email to the privacy officer, copying the parent’s email address in the message, and indicating that the parent was authorized to access their child’s personal information. This email had to be sent within 30 days.</p>	<p>No explanation provided by the food company.</p>
COMPANY 2	<p>Participants were asked to provide documentation or evidence that verified the child’s age and the relationship between parent and child (i.e., birth certificate). This was to ensure that the company was only providing personal information to authorized individuals.</p> <p>One participant found that a short form birth certificate was insufficient to meet this requirement and was asked to provide further documentation that establishes a parent child relationship.</p> <p>No ATI requests were ultimately fulfilled.</p>	<p>The company indicated that the proper formatting of the information requested may take longer than initially anticipated.</p>
COMPANY 3	<p>Some participants were asked to complete an online form in order to verify their identity.</p> <p>Participants were then asked to provide identification for the parent, documents showing relationship status with child, and documentation showing that the child is a minor (e.g., birth certificate).</p>	<p>No explanation provided by the food company.</p>

COMPANY 4	<p>The company asked participants to provide the child’s birth date. Participants were also informed that additional information would be required to verify the parent and child’s identity and relationship.</p> <p>No ATI requests were ultimately fulfilled.</p>	<p>No explanation provided by the food company.</p>
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COMPANY 5	<p>Some participants received replies suggesting that while their request was sent to the Data Privacy inbox, Customer Care may be better at assisting with requests. It was noted that the Data Privacy Team does not have any capabilities to manage/delete any data related to account management.</p>	<p>No explanation provided by the food company.</p>
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One participant who contacted Customer Care was provided a phone number and received their case information over the phone. The participant was told that no other information would be provided over email.

Other participants received a message that cited the Privacy Notice and Terms of Use to reiterate that the company’s services are not intended for individuals under the age of 13. Participants were advised to confirm their child’s age so that their account could be closed. In these cases, no data was provided.

Table 4 presents the type of personally identifiable and other information that was collected on children by the food companies, based on the children’s data that was received. Companies 1, 3, and 5 were found to have collected sociodemographic information on the child participants, such as first name, last name, email, country, etc. Companies 1 and 5 collected further information, including details about the mobile order placed (e.g., date and time and total purchase amount.) and any promotional offers that the participant had access to (e.g., promotion name, start and expiration date, description, etc.). Individually, Company 1 also tracked communication with the participant, such as push notifications. Company 5 provided detailed information regarding participants’ subscription in their rewards program, gift card use, registration with in-store WiFi, and analytics on app usage (e.g., visit date and time, operating system and version, app version, total clicks, etc.).

Table 4. Personal identifiable and other information collected by the five food companies analyzed based on receipt of children’s data¹

Personally identifiable or other information collected²	
COMPANY 1	<p>Profile information:</p> <ul style="list-style-type: none"> • Date and time of account creation • Country code • First name • Last name • Language • Postal code • Activity status • Email <p>Communications with participant:</p> <ul style="list-style-type: none"> • Channel • Whether it was sent or opened • Date and time sent • Device operating system <p>Orders:</p> <ul style="list-style-type: none"> • Date and time order placed • How many offers were applied • Total net cost • Total gross cost • Tax amount • Payment method • Channel (front counter, drive-through) <p>Offer details:</p> <ul style="list-style-type: none"> • Date and time • Description of offer
COMPANY 3	<ul style="list-style-type: none"> • First name • Last name • Country • Entity ID • Email • Phone number • Language

Personally identifiable or other information collected²

COMPANY 5

Profile information:

- Email
- First name
- Last name
- Birth day
- Birth month
- Address
- City
- Province
- Zip code
- Country
- Phone number

Rewards, subscription, Wi-Fi__33 registration information

- Rewards member status
- Rewards creation date
- Registered Wi-Fi__33
- Email opt-in
- Email opt-in source

Gift cards

- Gift card number

Business gift cards

- Transaction date
- Quantity
- Amount

Purchase transactions

- Date and time order placed
- Store name
- Order total charged
- Item name

Rewards transactions

- Date earned
- Points earned
- Point types (points)

Personally identifiable or other information collected²

COMPANY 5 (continued)

Promotions

- Promotion name
- Start date
- Expiration date
- Redemption date
- Status

Favourites

- Product name

Wi-Fi__33 device registration³

- First name
- Last name
- Customer email address

Google Analytics⁴

- Visit date and time
- Visit number
- Country visited from
- Operating system
- Operating system version
- App version
- Total clicks
- Internet service provider

¹Companies 2 and 4 not included in table as no ATI requests were fulfilled;

²Information categories and names reported as provided by the food company;

³Information entered when signing up to use in-store Wi-Fi__33;

⁴Information collected within the app to enhance functionality for app users

DISCUSSION

The objectives of this study were two-fold: 1) to conduct a scan of the privacy policies and terms of service agreement documents for the mobile applications of the top Canadian fast food and dine-in restaurants and 2) determine the nature of the data being collected from children while they use these mobile apps.

Current food company privacy policies are insufficient and do not limit children's use of mobile apps intended for older audiences

The first research question focused on determining the aspects of food companies' mobile app privacy policies that facilitate the protection of children's data and privacy. The results of the analysis showed that while the policies of some companies indicated that their mobile apps were not intended for children under 13, more than 50% of companies did not mention the intended age of users and no app had a compulsory age verification process through which to monitor compliance with the stated age limit. Previous research has indicated that Canadian children are likely to use food company mobile apps (e.g., two-thirds reporting having at least one food app on their phone), demonstrating that the current privacy policies and practices of these companies are not in fact limiting children's use of these apps that are intended for older audiences.

These findings are concerning given that we saw that most companies (92.3%) reported in their privacy policies that they collect personally identifiable data from their users (e.g., name, address, contact info, payment info, etc.), and most companies (89%) do not indicate that they make any distinction between collecting information pertaining to children vs. adults. Together, the lack of age verification processes and the knowledge that children use these mobile food apps highlights that children are in fact vulnerable to the collection of personal data that may potentially be used for targeted food marketing practices. However, the majority of companies (81%) did indicate that if they became aware that data had inadvertently been collected on children, they would delete it or that parents could request to have such data deleted. There were still five companies that did not make any mention of their policies surrounding the collection of children's data, which is troubling, regardless of whether or not this clause was left out given the apps stated target users were older demographics.

On a positive note, most (but not all) fast food and dine-in company policies outlined procedures for accessing one's personal information that were in line with PIPEDA, such as providing contact information for a Privacy Officer, having the right to request data access, as well as the right to amend or delete such data.

The full extent of data collected on children from food apps is unclear due to inconsistent responses to ATI requests

This research question leveraged the processes outlined by PIPEDA and by individual food companies in their privacy policies to determine what data is being inadvertently collected on child users of food-company mobile apps. The results of this exploratory study showed that personal data such as email, address (and other contact information), were collected from children while they use these digital platforms. For instance, we saw that personal data such as participants name, birth date, country of residence, language, email, address (and other contact information) were collected. Some companies also collected data that sheds light on children's food preference and purchasing, such as their favorite food items, their order and transaction history and locations, or the food promotions they responded to. In some cases, further analytic information, such as the mobile operating system and internet provider used to access the app, the number of app visits and clicks, or the frequency and type of notifications that were opened, were also collected. While the data collected on children via the successful ATI requests appears to be in line with what was outlined in the company privacy policies, there was variability in the types of data that were collected by different food companies.

It is furthermore likely that this study underestimated the nature and volume of data being inadvertently collected on children through the use of food company apps, given that almost half the ATI requests were not fulfilled, including all requests made to Company 2 and 4. Moreover, this study was not able to test how the collected information was being used by food companies for advertising purposes or otherwise. Many privacy policies indicated that the personally identifiable data could be anonymized, aggregated, and then shared with third parties, but it is unclear from the ATI responses to what degree this may have occurred. Evidence has shown that children's apps regularly transmit data to third parties³² and further research should investigate this phenomenon on apps created by the food industry that may or may not be youth specific.

It is, however, important to note that all apps from which ATI requests were made stated that the app was not intended for children under 13. Therefore, by agreeing to the privacy policy/terms of service, children were essentially stating that they were aged 13 or older and as such, the mobile apps and parent companies are unknowingly collecting data on children. While legally, this may absolve food companies from being accountable for the inadvertent collection of children's data, it is also important to acknowledge reality. Children are users of digital platforms that are not explicitly intended for them, as demonstrated by the fact that in order to be eligible to participate in this study, children 9-12 years old had to have existing food company apps and accounts on their devices. Similarly, children spend a great amount of time on social media apps despite company policies that say that children must be 13 years of age before accounts can be created.

It is also worth noting that children aged 13-18 years old are largely excluded from food company privacy policies and their data and online privacy are left completely exposed. Adolescents are

also vulnerable to unhealthy digital food and beverage marketing as a result of their cognitive developmental stage combined with their extensive use of digital media and particularly social media³⁰. The collection of personal data on teens by fast-food apps could lead to them being increasingly targeted by marketing for food products that do not support their health and well-being.

While the primary objective of this research question was to determine the nature of data that is being collected while children use food company mobile apps, this exploratory study yielded interesting findings on the process of obtaining children's data. As seen in RQ1, most company privacy policies outlined processes to access data that were in line with PIPEDA, however, the results of RQ2 showed that these processes were not reflected consistently in practice. Not only were ATI requests dealt with inconsistently between food companies, with two companies failing to fulfill a single request, but there was also variability in responses to ATI requests made to an individual food company.

As noted in the analysis of company policies, there was no monetary cost associated with obtaining participants' data, but in most cases, additional steps and/or information that were not described by the privacy policies were required. For instance, we found that many parents were required to submit additional personal documentation, such as passports or birth certificates to prove their identity, their child's identity, and their relationship to the child. Some participants even indicated that the documentation required to obtain their child's data was more extensive than what is required to enroll their children in school. Other participants were required to complete online forms, visit separate websites or send additional email communications. In some cases, the completion of these extra steps still did not result in access to children's data. These additional steps again varied both within and between food companies, with up to three different procedures required to obtain participant's data observed within a single food company.

While PIPEDA clearly states that if an individual's request for access to their data cannot be completed within 30 days, food companies must inform the individual and provide adequate reasoning.⁴⁷ In the present study, only one of the 13 unfulfilled ATI requests received a reason as to why (i.e., needing additional time to format the data). While seemingly in line with PIPEDA, this response was only received after the 30-day follow up period and can therefore still be considered to be late. Moreover, the participant did not receive their requested data prior to the study end date. Half of the total ATI requests sent in this study (n=12) were left unfulfilled with no reasons or information provided to the participant, practices which are inconsistent with PIPEDA.

Overall, while this study did observe that personal and other data is being inadvertently collected on children, the extent and nature of such data is unclear given the inconsistencies in the reported ATI request process and responses. Given the growing body of literature speaking to children's exposure to marketing for unhealthy food products on digital media,^{25,30,31} much of which is data-driven targeted marketing, additional research should aim to learn more about food companies' data collection practices, as well as how they are using this information to target children with unhealthy food marketing.

STRENGTHS & LIMITATIONS

This study presented the first Canadian examination of the privacy policies for the mobile apps of top chained fast food and dine-in restaurants by market share, and an examination of the types of data being inadvertently collected on children while using company apps. RQ1 was strengthened by its analysis of all publicly available privacy/terms of service documentation from fast food and dine-in restaurants with mobile apps and relied on existing research methodologies to inform the data collection processes. RQ2 was able to shed a unique light on the reality of requesting access to one's personal information and the processes required to do so. Such data has never been seen in the context of the food industry in Canada. The limitations of this study are also important to highlight. For instance, researchers were reliant on participants and parents to communicate to food companies in a timely manner and to forward all correspondences with the food companies back to the research team for analysis. As a result, it is possible that delays in participants' replies to the food company contributed to company's inability to comply with the 30-day deadline and or that researchers did not have access to all communication exchanges. However, all communication between participants and food companies was consistent and supported by pre-drafted email templates that were verified by researchers who have completed this process in other industries.^{48,49} In both studies, data collection was reviewed by a second researcher to ensure completeness and accuracy.

Health Canada has recently proposed a policy that would restrict marketing for unhealthy foods that is primarily directed at children in digital spaces. However, there is currently no mention of how behavioural marketing will be addressed, nor how children's right to privacy while participating in online activity will be maintained. Given that the specific marketing restrictions have yet to be finalized, it is critical to consider how these gaps might be addressed. Moreover, given the rapidly evolving digital world and the marketing strategies companies can use to target children in this medium, it is necessary to consider if improvements can be made to the broader laws or structures currently in place to protect children's privacy.

The WHO recommends the implementation of comprehensive policies that restrict unhealthy food marketing on all media and settings to which children are exposed³⁸. For digital media specifically, they recommend that countries consider taking a child rights-based approach to protecting children's privacy online, and suggest that such policies may include aspects like an age verification process or the explicit tagging of marketing campaigns online^{30,31}.

Based on the results of this study, we propose the following:

POLICY RECOMMENDATIONS & CONSIDERATIONS

POLICY RECOMMENDATION 1

Federal policies need to be strengthened to explicitly consider the protection of children's data and privacy in DIGITAL MEDIA

In order to adequately protect children's rights, children need to intentionally be considered as different than adults in federal privacy policy, and children need to be defined, as per the United Nations, as up to 18 years of age. For instance, the Children's Online Privacy Protection Rule (COPPA) in the United States specifically pertains to the protection of children in "child-targeted" digital spaces⁵⁰, however, this presents some limitations as children often use digital platforms or websites that are not explicitly intended for their age group ³¹.

Moreover, the federal government in Canada should consider mandating an age verification processes to better limit the inadvertent collection of children's data and require more accountability and consistency for the processes required to obtain, amend or delete one's personal data. While individual companies should also aim to strengthen their own privacy policies and terms of service agreements, without federal law or regulations, results can be uneven.

POLICY RECOMMENDATION 2

Food marketing restrictions need to be adequately broad to include all digital media to which children are exposed and incorporate child's rights considerations

The current proposed policy on food marketing to children recently released by Health Canada only includes digital marketing that is 'primarily directed at children'. It therefore excludes many other digital platforms through which children are exposed to promotional content, such as through the food company mobile apps that are primarily targeting audiences. It is important that Health Canada's food marketing regulations focus on all digital spaces where children are present, whether they are allowed to be there or not.

CONCLUSIONS

This study illustrated that current fast food and dine-in restaurant privacy policies are insufficient and do not limit children's use of mobile apps intended for older audiences. Moreover, we found that children's data is being inadvertently collected via fast food mobile apps, however, *the full extent of children's data collected is unclear due to inconsistent responses and outcomes of the ATI requests.*

Overall, this study revealed gaps in the current Canadian policy landscape with regards to the protection of children's data and privacy online and highlighted the need to consider the incorporation of a child-rights approach in future food marketing restrictions to mitigate children's exposure to behaviourally targeted marketing for unhealthy food and beverage products.

REFERENCES

1. World Health Organization. Report of the commission on ending childhood obesity. Accessed March 3, 2020. http://apps.who.int/iris/bitstream/10665/204176/1/9789241510066_eng.pdf?ua=1
2. World Health Organization. Obesity and Overweight - Fact Sheets. Accessed March 16, 2022. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
3. World Health Organization. Noncommunicable disease: Childhood overweight and obesity. Accessed March 16, 2022. <https://www.who.int/news-room/questions-and-answers/item/noncommunicable-diseases-childhood-overweight-and-obesity>
4. Government of Canada. Childhood Obesity. Accessed March 16, 2022. <https://www.canada.ca/en/public-health/services/childhood-obesity/childhood-obesity.html>
5. Government of Canada. Chapter 5: Diabetes in Canada: Facts and figure from a public health perspective - Youth and children. <https://www.canada.ca/en/public-health/services/chronic-diseases/reports-publications/diabetes/diabetes-canada-facts-figures-a-public-health-perspective/chapter-5.html#chp50>
6. Statistics Canada. *Table 105-2024 - Measured children and youth body mass index (BMI) (World Health Organization classification), by age group and sex, Canada and provinces, Canadian Community Health Survey - Nutrition, occasional, CANSIM (database)*. 2017. Accessed September 13, 2017. <http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1052024&&pattern=&st-ByVal=1&p1=1&p2=31&tabMode=dataTable&csid=>
7. Hack S, Jessri M, L'Abbé MR. Nutritional quality of the food choices of Canadian children. *BMC nutrition*. 2021;7(1):1-10.
8. Jessri M, Nishi SK, L'Abbe MR. Assessing the nutritional quality of diets of Canadian children and adolescents using the 2014 Health Canada Surveillance Tool Tier System. *BMC public health*. May 10 2016;16(1):381. doi:10.1186/s12889-016-3038-5
9. Statistics Canada. Nutrition: Findings from the Canadian Community Health Survey. Overview of Canadians' Eating Habits, 2004 (Catalogue 82-620). 2006.
10. Ng AP, Ahmed M, L'Abbe M. Nutrient Intakes of Canadian Children and Adolescents: Results from the Canadian Community Health Survey (CCHS) 2015–Nutrition Public Use Microdata Files. 2021;
11. Boyland E, McGale L, Maden M, et al. Association of Food and Nonalcoholic Beverage Marketing With Children and Adolescents' Eating Behaviors and Health: A Systematic Review and Meta-analysis. *JAMA pediatrics*. 2022:e221037-e221037.
12. Boyland E, Tatlow-Golden M. Exposure, power and impact of food marketing on children: evidence supports strong restrictions. *European Journal of Risk Regulation*. 2017;8(2):224-236.
13. World Health Organization. Food marketing exposure and power and their associations with food-related attitudes, beliefs, and behaviours: a narrative review. Accessed March 17, 2022. <https://www.who.int/publications/item/9789240041783>
14. Boyland EJ, Nolan S, Kelly B, et al. Advertising as a cue to consume: a systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. *Am J Clin Nutr*. Feb 2016;103(2):519-33. doi:10.3945/ajcn.115.120022
15. Sadeghirad B, Duhaney T, Motaghipisheh S, Campbell NR, Johnston BC. Influence of unhealthy food and beverage marketing on children's dietary intake and preference: a systematic review and meta-analysis of randomized trials. *Obes Rev*. Oct 2016;17(10):945-59. doi:10.1111/obr.12445
16. Kelly B, Vandevijvere S, Ng S, et al. Global benchmarking of children's exposure to television advertising of unhealthy foods and beverages across 22 countries. *Obesity Reviews*. 2019;11:11.
17. World Health Organization. Protecting children from the harmful impact of food marketing: policy brief. Accessed June 14, 2022. <https://www.who.int/publications/item/9789240051348>
18. Kent MP, Guimaraes JS, Bagnato M, et al. Broadcast Television Is Not Dead: Exposure of Children to Unhealthy Food and Beverage Advertising on Television in Two Policy Environments (Ontario and Quebec). An Observational Study. *The Journal of Nutrition*. 2023;153(1):268-278.
19. Potvin Kent M, Soares Guimaraes J, Remedios L, et al. *Child and Youth Exposure to Unhealthy Food and Beverage Marketing on Television in Canada in 2019: A Report to Health Canada*. 2021.
20. Pauzé E, Remedios L, Kent MP. Children's measured exposure to food and beverage advertising on television in a regulated environment, May 2011–2019. *Public Health Nutrition*. 2021;24(17):5914-5926.
21. Potvin Kent M, Pauze E, Roy EA, de Billy N, Czoli C. Children and adolescents' exposure to food and beverage marketing in social media apps. Research Support, Non-U.S. Gov't. *Pediatric Obesity*. 2019;14(6):e12508.

22. Prowse RJL, Naylor PJ, Olstad DL, et al. Food marketing in recreational sport settings in Canada: a cross-sectional audit in different policy environments using the Food and beverage Marketing Assessment Tool for Settings (FoodMATS). Research Support, Non-U.S. Gov't. *International Journal of Behavioral Nutrition & Physical Activity*. 2018;15(1):39.
23. Prowse R. Food marketing to children in Canada: a settings-based scoping review on exposure, power and impact. *Health Promot Chronic Dis Prev Can*. Sep 2017;37(9):274-292. doi:10.24095/hpcdp.37.9.03
24. Potvin Kent M, Soares Guimaraes J, Pritchard M, et al. Differences in child and adolescent exposure to unhealthy food and beverage advertising on television in a self-regulatory environment. *BMC Public Health*. 2023;23(1):1-11.
25. Boyland E, Thivel D, Mazur A, Ring-Dimitriou S, Frelut M-L, Weghuber D. Digital food marketing to young people: a substantial public health challenge. *Annals of Nutrition and Metabolism*. 2020;76(1):6-9.
26. Radio-television C, Commission T. Communications monitoring report 2018. [Reports] *Canadian Radio-television and Telecommunications Commission (CRTC)*. 2019;
27. Brisson-Boivin K. *The digital well-being of Canadian families*. MediaSmarts; 2018.
28. Potvin Kent M, Pauzé E, Bagnato M, et al. Food and beverage advertising expenditures in Canada in 2016 and 2019 across media. *BMC Public Health*. 2022;22(1):1-14.
29. Top Draw. Online advertising costs in 2021. Accessed June 6, 2023. <https://www.topdraw.com/insights/is-online-advertising-expensive/>
30. World Health Organization Regional Office for Europe. Monitoring and restricting digital marketing of unhealthy products to children and adolescents. Accessed January 17, 2022. https://www.euro.who.int/_data/assets/pdf_file/0008/396764/Online-version_Digital-Mktg_March2019.pdf
31. Tatlow-Golden M, Boyland E, Jewell J, et al. Tackling food marketing to children in a digital world: trans-disciplinary perspectives. 2016;
32. Zhao F, Egelman S, Weeks HM, Kaciroti N, Miller AL, Radesky JS. Data collection practices of mobile applications played by preschool-aged children. *JAMA pediatrics*. 2020;174(12):e203345-e203345.
33. Liu M, Wang H, Guo Y, Hong J. Identifying and analyzing the privacy of apps for kids. 2016:105-110.
34. Jibb L, Amoako E, Heisey M, Ren L, Grundy Q. Data handling practices and commercial features of apps related to children: a scoping review of content analyses. *Archives of Disease in Childhood*. 2022;107(7):665-673.
35. Hazen C. *Sugary drink FACTS 2014: Some progress but much room for improvement in marketing to youth*. Rudd Center for Food Policy and Obesity; 2014.
36. Harris J, Schwartz M, Munsell C. Measuring progress in nutrition and marketing to children and teens. Yale Rudd Center for Food Policy and Obesity. 2013.
37. World Health Organization. Set of recommendations on the marketing of foods and non-alcoholic beverages to children. Accessed January 28, 2020. <https://www.who.int/dietphysicalactivity/publications/recsmarketing/en/>
38. World Health Organization. WHO guideline on policies to protect children from the harmful impact of food marketing: Draft WHO guideline for public consultation. Accessed June 6, 2023. <https://www.who.int/news-room/articles-detail/Online-public-consultation-on-draft-guideline-on-policies-to-protect-children-from-the-harmful-impact-of-food-marketing>
39. Gouvernement du Québec. P-40.1 - Consumer Protection Act. Updated to 1 October 2016. Accessed March 17, 2022. <http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/P-40.1>
40. Advertising Standards Canada. Canadian Children's Food and Beverage Advertising Initiative. Core Principles. Accessed March 17, 2022. <https://adstandards.ca/about/childrens-advertising-initiative/about-the-cai/>
41. Mulligan C, Labonte ME, Vergeer L, L'Abbe MR. Assessment of the Canadian Children's Food and Beverage Advertising Initiative's Uniform Nutrition Criteria for Restricting Children's Food and Beverage Marketing in Canada. *Nutrients*. Jun 22 2018;10(7)doi:10.3390/nu10070803
42. Potvin Kent M, Pauze E. The effectiveness of self-regulation in limiting the advertising of unhealthy foods and beverages on children's preferred websites in Canada. Research Support, Non-U.S. Gov't. *Public Health Nutrition*. 2018;21(9):1608-1617.
43. Potvin Kent M, Smith JR, Pauze E, L'Abbe M. The effectiveness of the food and beverage industry's self-established uniform nutrition criteria at improving the healthfulness of food advertising viewed by Canadian children on television. *Int J Behav Nutr Phys Act*. Jun 22 2018;15(1):57. doi:10.1186/s12966-018-0694-0
44. Potvin Kent M, Dubois L, Wanless A. Self-regulation by industry of food marketing is having little impact during children's preferred television. *Int J Pediatr Obes*. Oct 2011;6(5-6):401-8. doi:10.3109/17477166.2011.606321
45. Health Canada. Policy update on restricting food advertising primarily directed at children: Proposed policy. Accessed May, 2023. <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating-strategy/policy-update-restricting-food-advertising-primarily-directed-children/proposed-policy.html>
46. Association of Canadian Advertisers, Canadian Beverage Association, Restaurants Canada, Food Health and Consumer products of Canada. Code for the Responsible Advertising of Food and Beverage Products to Children ("Food and Beverage Advertising Code"). Accessed March 20, 2022. <https://acaweb.ca/en/wp-content/uploads/sites/2/2021/06/FoodAndBeverageAdvertisingCode-FINAL-20211201-1.pdf>

47. Office of the Privacy Commissioner of Canada. PIPEDA in Brief. Accessed June 6, 2023. https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda/pipeda_brief/
48. Parsons C, Hilts A, Crete-Nishihata M. Approaching Access: A look at consumer personal data requests in Canada. Accessed June 6, 2023. <https://citizenlab.ca/2018/02/approaching-access-look-consumer-personal-data-requests-canada/>
49. Smith M, Parsons C. Short Summaries of Social Networking Service Privacy Policies - The CATSMI Project. Accessed November 10, 2022. <http://catsmi.ca/resources/public-resources>
50. Federal Trade Commission. Children's Online Privacy Protection Rule ("COPPA"). Accessed June 7, 2023. <https://www.ftc.gov/legal-library/browse/rules/childrens-online-privacy-protection-rule-coppa>

APPENDIX A

QUESTIONS USED TO GUIDE THE ANALYSIS OF FOOD COMPANY PRIVACY POLICIES AND TERMS OF SERVICE AGREEMENTS⁴⁹

Questions Concerning Company Privacy Policies/ Terms of Service/ End User Licence Agreements

- a. Is there a link to a privacy policy on the app log in, 'make an account' page or homepage? If not, where was the privacy policy located? (Please provide link in Excel sheet)
- b. Is the privacy policy specific to the mobile application or more broad (e.g., also pertaining to the company website)?
- c. Is there a reference to compliance with: national privacy laws, international guidelines, or self-regulatory instruments from associations?
- d. Is there a statement concerning which nation/court proceedings must go through?
- e. Is there a reference in the privacy policy to the Terms of Service or End User License Agreement, and vice versa?
- f. Does the privacy policy and/or Terms of Service or End User License Agreement indicate the age of the intended user of the mobile application?
- g. Is there information about when the privacy policy was last updated? Is it dated? Can one access previous versions?
- h. Does the company reserve the right to change the privacy policy or other public policy documents that might establish terms around the collection, use, or processing of personal information without notification? If notification is promised, under what conditions are users notified? Is notification promised to all persons whose personal information has been collected? What are the terms of accepting the new policy?

Accessing Information About a Company's Policies

- a. Is there a contact to a privacy officer listed? (For top 5 apps, please list)
- b. Is there a description/discussion of who a person can complain to if they're unsatisfied with the information/processes laid out in an organization's public facing documents?
- c. Is there a process for deleting one's information (i.e., a "Right to forget")?
- d. Is there any statement regarding what happens if data was inadvertently collected on children?
- e. Do you have to be a customer or active user of a company's products to make use of any stated procedures (e.g., right to access or delete information)

Questions About a Company's Collection of Personal (or Personally Identifying) Information

- a. Are there details of the specific kinds of Personally Identifiable Information (PII) which are collected? If so, what types of categories are listed?
- b. Is there any distinction made between sensitive and non-sensitive PII?
- c. Is any distinction made between information pertaining to children or adults?
- d. Is there any age verification process (e.g., entering date of birth)?
- e. Does the company require that certain information is provided, as a precursor to signing up for the service or acquiring products from the company? If so, what is asked for or collected? (e.g., during the account registration process)

Questions Concerning Data Security

- a. Are commitments made to the security of PII?
- b. Are commitments made to the encryption or deidentification of data?
- c. Is there a note that users or government bodies are alerted if a data breach occurs? Are all persons who have their information disclosed notified, or only those contracting with the company?

Questions Concerning Access and Correction Rights

- a. Is there a distinction between "users" and "targeted persons" when it comes to access and correction rights?
- b. Are commitments made to allow the access of either PII or non-PII?
- c. Are commitments made to all correction of either PII or non-PII?
- d. Are procedures for access and correction specified? For persons contracting with the company? For persons targeted by the company's products or services?
- e. Is there a stated monetary cost associated with gaining access to one's PII or non-PII?

APPENDIX B

QUESTIONS USED TO GUIDE THE ANALYSIS OF THE ATI REQUEST PROCESS AND THE RESULTS OF THE ATI REQUESTS⁴⁹

1. General Questions

- a. Was the ATI request fulfilled?
 - i. **IF YES:**
 - 1. Was the ATI request fulfilled within the required 30-day period?
 - 2. Were there any other steps required to receive personal data (e.g., financial payment, provision of additional information?)
 - 3. Was there any other information provided related to the data received?
 - ii. **IF NO:**
 - 1. Was there any response received from the company?
 - 2. Were there any reasons/barriers to the data request not being fulfilled?

2. Questions About a Company's Collection of Personal (or Personally Identifying) Information

- a. Was Personally Identifiable Information (PII) which are collected? If so, what types of categories are listed?
- b. Were there any other types of data collected? If so, please list.

APPENDIX C

DETAILED SUMMARY OF MOBILE APP PRIVACY POLICIES AND/OR TERMS OF SERVICE AGREEMENTS FROM THE TOP FOOD COMPANIES IN CANADA (N=26)¹

Questions concerning company privacy policies and/or terms use agreements		n (%)	Notes
1) Is there a link to a privacy policy on the app login, 'make an account' page or homepage?	Yes	26 (100)	26 food companies have a link to the privacy policy on their website homepage. 21 food companies have a link to the privacy policy on their app login, 'make an account', or homepage.
	No	0 (0)	
2) Is the privacy policy specific to the mobile application or apply more broadly ²	Mobile application	21 (80.7)	
	Website	25 (96.1)	
3) Is there a reference to compliance with: national privacy laws, international guidelines, or self-regulatory instruments from associations?	Yes	12 (46.2)	Personal information may be stored outside of the province of residence and/or outside of Canada and be subject to the laws of those jurisdictions.
	No	14 (53.8)	13 food companies only refer to "applicable law", but do not specify which laws.

4) Is there a statement concerning which nation/court proceedings must go through?	Yes	4 (15.4)	For example, parties consent to the jurisdiction of the courts of Montreal, Québec. Or disputes will be resolved by arbitration in Toronto, Ontario.
	No	22 (84.6)	
5) Is there a reference in the privacy policy to the Terms of Service or End User License Agreement, and vice versa?	Yes	25 (96.2)	6 food companies only refer to the privacy policy from the terms of service. 1 food company only refers to the terms of service from the privacy policy
	No	1 (3.8)	
6) Does the privacy policy indicate the age of the intended user of the mobile application?	Yes	12 (46.2)	10 food companies specify that their app is not intended for children under age 13.
	No	14 (53.8)	
7) Is there information about when the privacy policy was last updated?	Yes	24 (92.3)	
	No	2 (7.6)	
8) Does the company reserve the right to change the privacy policy or other public policy documents that might establish terms around the collection, use, or processing of personal information without notification?	Yes	3 (11.5)	Food companies typically indicate changes to their policy by updating the 'last modified date'. These changes to the Privacy Policy become effective when the updated policy is posted.
	No	23 (88.5)	

Questions about accessing information about a company's policies		n (%)	Notes
1) Is there a contact to a privacy officer listed?	Yes	26 (100)	Food companies typically provide a mailing address, email, and/or phone number for questions about their privacy policy.
	No	0 (0)	
2) Is there a description/discussion of who a person can complain to if they're unsatisfied with the information/processes laid out in an organization's public facing documents?	Yes	25 (96.2)	Food companies typically welcome questions, comments, and requests regarding their privacy policy.
	No	1 (3.8)	
3) Is there a process for deleting one's information?	Yes	15 (57.7)	Food companies may retain certain information if required by law.
	No	11 (42.3)	
4) Is there any statement regarding what happens if data was inadvertently collected on children?	Yes	21 (80.8)	<p>11 food companies commit to deleting information collected from children under age 13 in the event they become aware of it.</p> <p>9 food companies allow parents whose child has provided personal information to ask for it to be deleted.</p>
	No	5 (19.2)	
5) Do you have to be a customer or active user of a company's products to make use of any stated procedures?	Yes	0 (0)	
	No	26 (100)	

Questions about company's collection of personal information		n (%)	Notes
1) Are there details of the specific kinds of PII which are collected?	Yes	24 (92.3)	For example, PII may include name, email address, location, birthday, gender, street address, mobile phone number, payment information, etc.
	No	2 (7.7)	
2) Is there any distinction made between sensitive and non-sensitive PII?	Yes	0 (0)	
	No	26 (100)	
3) Is any distinction made between information pertaining to children or adults?	Yes	3 (11.5)	<p>1 food company states that it will not collect more detailed information from a child age 12 and younger without the consent of a parent.</p> <p>1 food company identifies portions of its service that are appropriate for a child under age 13 where personal information will not be collected without compliance with COPPA (i.e., American children's privacy law).</p>
	No	23 (88.5)	
4) Is there any age verification process (e.g., entering date of birth)?	Yes	0 (0)	
	No	26 (100)	Some food companies allow for optional disclosure of age, while others state that by creating a profile you confirm that you are at least a certain age.

5) Does the company require that certain information is provided, as a precursor to signing up for the service or acquiring products from the company?	Yes	26 (100)	This information includes a combination of name, email, postal code, phone number, etc.
	No	0 (0)	

Questions around the security of collected information	n (%)	Notes
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1) Are commitments made to the security of PII?	Yes	21 (80.8)	Food companies describe physical, electronic, and managerial procedures to protect PII against loss, theft, and unauthorized access, use, modification, and disclosure.
	No	5 (19.2)	

2) Are commitments made to the encryption or deidentification of data?	Yes	10 (38.5)	PII may be anonymized and/or aggregated and stored to analyze trends.
	No	16 (61.5)	

3) Is there a note that users or government bodies are alerted if a data breach occurs?	Yes	3 (11.5)	In the event of a breach of data security, 3 food companies will take reasonable steps to investigate the situation and, where appropriate, notify individuals whose information may have been compromised and take additional steps, in accordance with any applicable laws and regulations.
	No	23 (88.5)	

Questions about company's collection of personal information		n (%)	Notes
1) Is there a distinction between "users" and "targeted persons" when it comes to access and correction rights?	Yes	0 (0)	
	No	26 (100)	
2) Are commitments made to allow access to either PII or non-PII?	Yes	21 (80.8)	21 food companies specify the right to access personal information.
	No	5 (19.2)	1 food company specifies this only for California and EU residents.
3) Are commitments made to allow correction of either PII or non-PII?	Yes	21 (80.8)	21 food companies allow users to request their personal information to ensure its accuracy.
	No	5 (19.2)	1 food company specifies this only for California and EU residents. 1 food company specifies that if personal information is directly supplied by the user it is assumed to be correct.
4) Are procedures for access and correction specified?	Yes	22 (84.6)	Users are to contact the privacy officer.
	No	4 (15.4)	
5) Is there a stated monetary cost associated with gaining access to one's PII or non-PII?	Yes	0 (0)	
	No	26 (100)	

¹Data collected in November 2022;

²Percentages add up to greater than 100% as companies could have presented more than one option.



The OUTLIVE Lab

FOOD AND NUTRITION POLICY FOR OBESITY PREVENTION