Public Health Ontario | Santé publique Ontario

ENHANCED EPIDEMIOLOGICAL SUMMARY

Food Insecurity among Children using Data from the Canadian Health Survey of Children and Youth

4th Edition: February 2024

Highlights

- Based on the Canadian Health Survey of Children and Youth (CHSCY), 15.3% of Ontarian children 1 to 17 years old lived in food-insecure households in 2019. Of those, 5.1%, 7.3% and 2.9% were marginally, moderately, and severely food insecure, respectively. The prevalence of children living in food-insecure households was not significantly different by sex or age group (1-4 years, 5-11 years or 12-17 years).

- Higher prevalence of household food insecurity was found among children living in households with lower income, lower parent educational attainment, who identified as one of several racialized groups or as Indigenous, and who were born outside of Canada. As confirmed by these CHSCY findings, food insecurity is known to be a sensitive measure of material deprivation and tightly linked to other indicators of social and economic disadvantage.[1] Historical and ongoing systemic racism and colonialism are key drivers that impact higher rates of household food insecurity for racialized and Indigenous children and their families.

- There were statistically significant differences in the prevalence of children living in food insecure households by Statistics Canada Peer Group, which groups public health units by geographic (e.g., population density) and socio-demographic characteristics (e.g., proportion of population that reported themselves to be racialized). The highest prevalence of marginal and moderate household food insecurity was in large urban areas (Peer Groups G & H). The highest prevalence of severe household food insecurity was in rural or rural-urban mixed communities (Peer Group C).

Introduction

This report is one in a series of summaries on CHSCY-derived child health indicators. The purpose of this series is to provide clearly defining categories for socio-demographic variable use in analyses of CHSCY data to ensure consistent language and interpretation of results between public health units. Basic estimates are provided by several levels of geography for public health units with limited epidemiological support to access estimates for their region. For more information about the series please see the Technical Report.

This report provides an overview of household food insecurity among children in Ontario as measured by the 2019 CHSCY. The prevalence of children living in food insecure households is described, as well as its relationship with socio-demographic characteristics. Prevalence estimates are presented by Public

Health Unit, geographic region, and Statistics Canada Peer Group. For further information about the CHSCY data and population characteristics please see the Technical Report.

Food insecurity is defined as the inability to obtain a sufficient and nutritious diet due to income-related food access.[2] In 2021, one in five Canadian children under the age of 18 lived in households affected by some level of food insecurity.[1] This is considered an important social determinant of health as food insecurity may result in detrimental outcomes for early childhood growth and development, and long-term physical and mental health outcomes.[1]

In CHSCY, food insecurity is measured using the Household Food Security Survey Module (HFSSM), which is an 18-item questionnaire: 10 of the questions are specific to adult household members, and eight are specific to children in the household. **Household food insecurity is the preferred indicator when examining food insecurity in children.[3]** Studies have shown differences in nutritional indicators among children in food-insecure households compared to food-secure households,[5,6] regardless of responses to the child-focused portion of the HFSSM (or the "Food security – child status" variable derived from child-focused questions alone). This suggests recall and reporting biases in responses of parents or older siblings to the eight child-referenced items on the HFSSM. Furthermore, parents of children in households experiencing food insecurity often try to mitigate the impact of the scarcity of food on their children.[7] However, despite these efforts, children are often aware of the stressors at home, and the shame or guilt associated with these difficulties may prolong periods of toxic stress, impacting future health conditions.[8,9]

CHSCY, along with other Statistics Canada surveys that include the HFSSM, provides three derived variables related to food insecurity: "Food security – adult status", "Food security – child status", and "Household food security status." As mentioned above, household food insecurity status provides the most accurate measure of food insecurity among children. As such, this report uses the "Household food security status" variable to estimate the prevalence of food insecurity among children.

Note that CHSCY uses the population of children aged 1 to 17 as its sampling frame, therefore, estimates from CHSCY refer to the **proportion of children** (e.g., the proportion of children living in food insecure households). CHSCY cannot be used for estimates of other populations, such as households, meaning it cannot be used to estimate the overall prevalence of food insecure households in Ontario (with children or otherwise). For more information about data source, indicator definitions and categorization please see the Technical Notes at the end of this report.

Race-based and Indigenous Identity Data

The CHSCY utilizes the following socio-demographic terms to describe its variables: "Population Group", "Visible Minority", and "Aboriginal Identity". To stay current with health equity language preferred by impacted communities and to reduce unintentional harms when discussing and utilizing findings of the CHSCY, we have replaced the CHSCY terminology with the following terms in this report, where possible: "race and ethnic origin," "racialized groups," and "Indigenous".

'Race' is a social construct without a biological basis and created to categorize people into different groups based on visual traits in ways that create and maintain power differentials within society.[10] 'Ethnic origin' refers to communities' learned or adopted characteristics such as language, practices, and beliefs.[11,12] Note that the categorization of people as Indigenous, Black, and other racial categories has been historically and currently used to mark certain groups for exclusion, discrimination, and oppression. Racism, racial categorization, and racial discrimination; therefore, continue to shape the lives and opportunities of those who are categorized as "racialized people".[12] For more information on socio-demographic terminology, please refer to the Technical Notes and Technical Report.

Race-based and Indigenous identity data are vital for the identification and monitoring of health inequities that stem from racism, bias, and discrimination[13] and to inform the design of programs and services to promote the health and well-being of racialized populations and Indigenous peoples.

Public Health Ontario (PHO) includes data and analyses on Indigenous peoples to advance understanding and support action to enhance Indigenous people's health. PHO recognizes the importance of Indigenous data sovereignty and the First Nations principles of Ownership, Control, Access and Possession (OCAP) and Métis Principles of Ownership, Control, Access and Stewardship (OCAS). We continue to strive to build processes and relationships to respectfully and meaningfully analyze and report on Indigenous data.

Results

- Overall, based on CHSCY, 15.3% of children in Ontario ages 1 to 17 were experiencing household food insecurity in 2019 (Figure 1).
    - This overall prevalence from CHSCY is likely an underestimate. The 2020 Canadian Income Survey (CIS) estimated that 20.6% of children ages 1 to 17 in Ontario live in food-insecure households.[1] The difference may be due to the higher response rate for the CIS compared to CHSCY, which suggests that CIS may be more representative of the population, and a better data source to measure food insecurity in Canada. While CHSCY may underestimate food insecurity, its focus on the child population and health measures means that it remains an important survey for understanding the relationship between food insecurity, socio-demographic characteristics, and child health, particularly for younger children.
- 5.1% of children were experiencing marginal household food insecurity, 7.3% were experiencing moderate household food insecurity, and 2.9% were experiencing severe household food insecurity (Figure 2).

Figure 1: Percentage of children living in food secure and food insecure households; Ontario, 2019

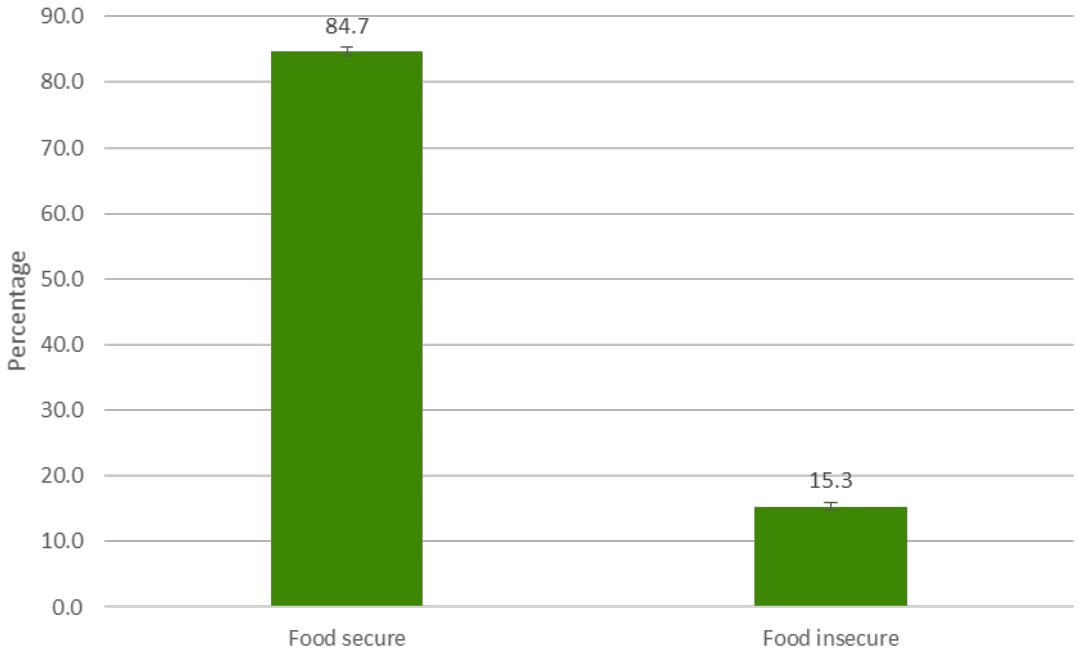
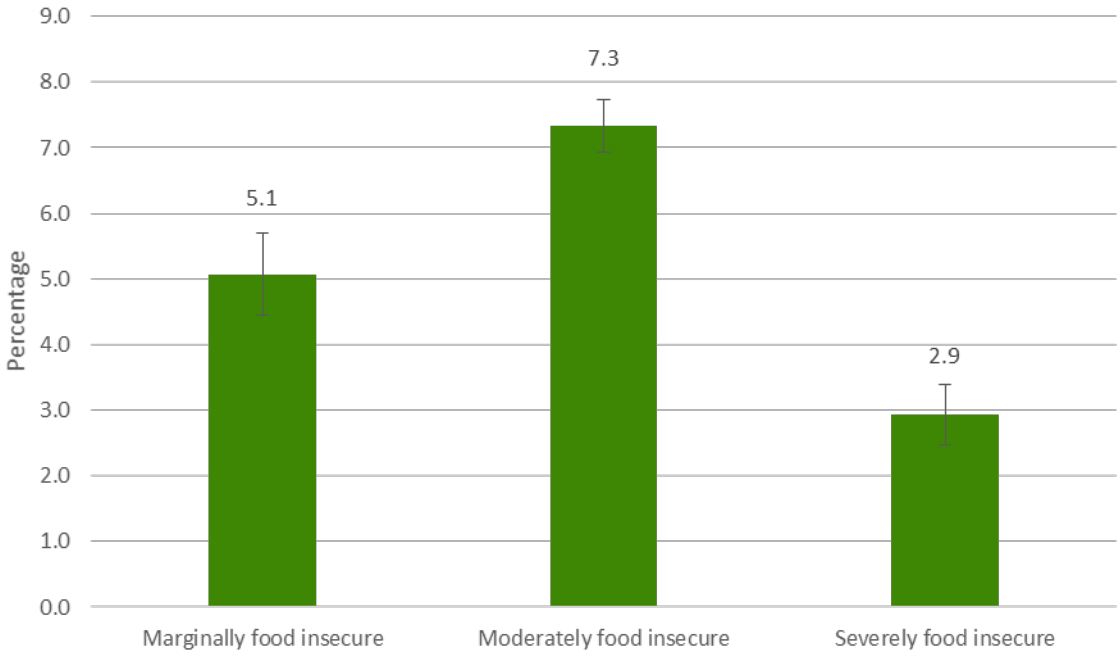


Figure 2: Percentage of children living in food insecure households by level of food insecurity; Ontario, 2019



Socio-demographic Variables

AGE AND SEX AT BIRTH

The prevalence of child food insecurity did not significantly differ by sex at birth or age group (Table 1).

Table 1: Percentage of children living in food secure and food insecure households by age group and sex at birth; Ontario, 2019

	Food secure % (95% CI)	Total food Insecure % (95% CI)	Marginally food insecure % (95% CI)	Moderately food insecure % (95% CI)	Severely food insecure % (95% CI)
Age					
1 to 4	86.0 (84.8 - 87.1)	14.0 (12.9 - 15.2)	5.0 (4.2 - 5.7)	6.7 (5.9 - 7.6)	2.4 (1.9 - 2.9)
5 to 11	84.1 (83.1 - 85.0)	15.9 (15.0 - 16.9)	5.3 (4.6 - 5.9)	7.4 (6.7 - 8.1)	3.3 (2.8 - 3.8)
12 to 17	84.5 (83.4 - 85.6)	15.5 (14.4 - 16.6)	4.9 (4.2 - 5.6)	7.7 (6.7 - 8.1)	2.9 (2.8 - 3.8)
Sex at birth					
Male	84.6 (83.7 - 85.5)	15.4 (14.5 - 16.3)	5.2 (4.7 - 5.7)	7.3 (6.7 - 7.9)	2.9 (2.5 - 3.3)
Female	84.7 (83.8 - 85.6)	15.3 (14.4 - 16.2)	4.9 (4.4 - 5.5)	7.4 (6.7 - 8.0)	3.0 (2.5 - 3.4)

HIGHEST PARENTAL EDUCATIONAL ATTAINMENT

The prevalence of child food insecurity was inversely associated with the level of educational attainment of either the person most knowledgeable (PMK) or their spouse. Food insecurity was experienced by 8.6% (95% CI 7.8-9.3%) of children who's PMK or PMK Spouse reported having a university degree, compared to 28.3% (95% CI 26.1-30.5%) of children who's PMK or PMK Spouse reported having a high school degree or less (Figure 3, Table 2).

Figure 3: Percentage of children living in food secure and food insecure households by highest level of educational attainment of PMK or Spouse; Ontario, 2019

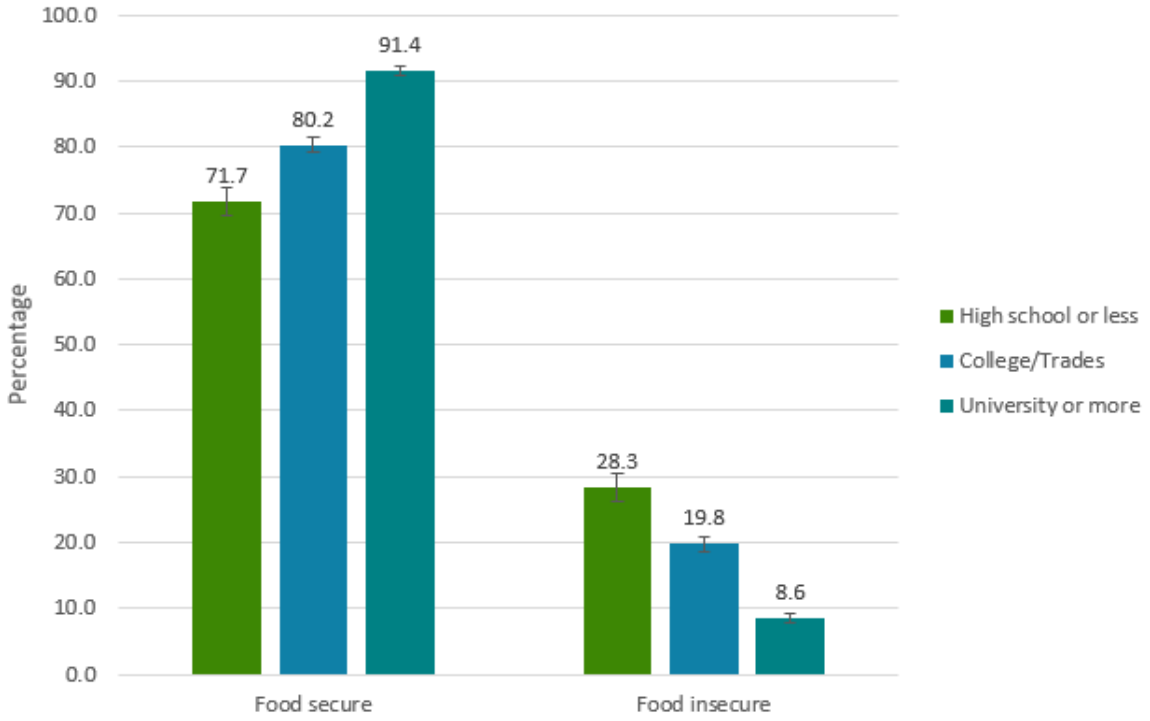


Figure 4: Percentage of children living in food insecure households by level of food insecurity and by highest educational attainment of PMK or Spouse; Ontario, 2019

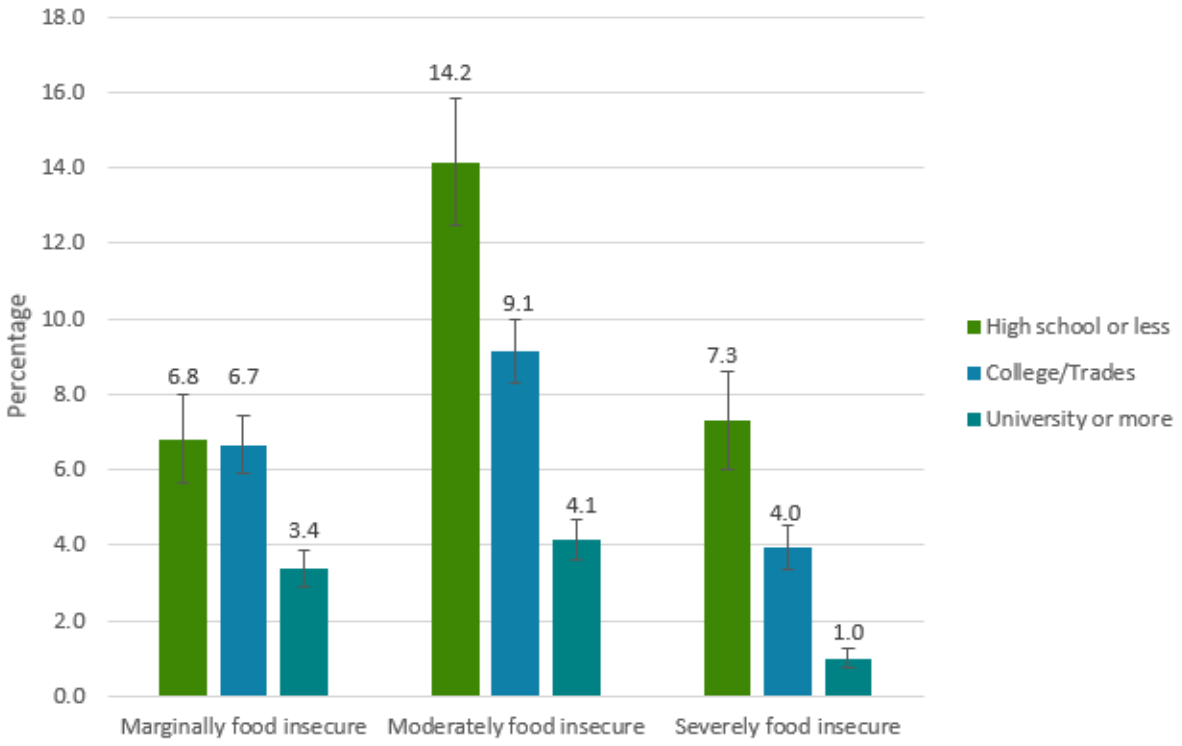


Table 2: Percentage of children living in food secure and food insecure households by level of educational attainment of PMK and PMK spouse; Ontario, 2019

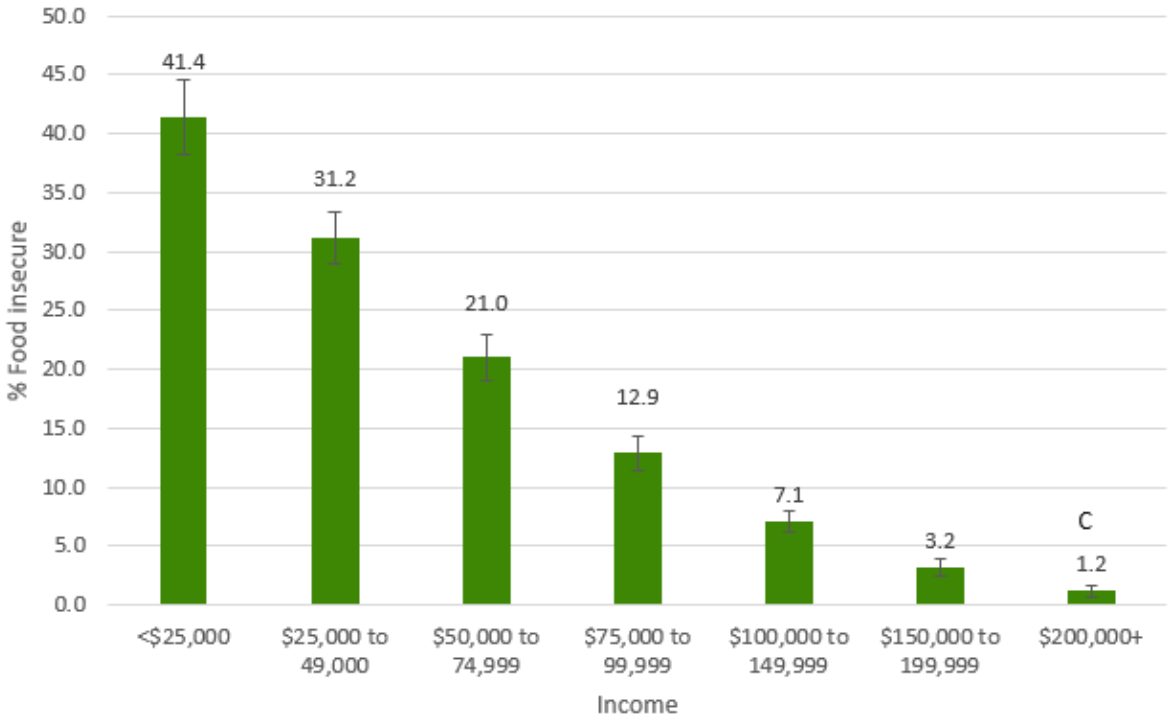
Highest Parental Education	Food secure % (95% CI)	Total food insecure* % (95% CI)	Marginally food insecure* % (95% CI)	Moderately food insecure* % (95% CI)	Severely food insecure* % (95% CI)
High School or less	71.7 (69.5-73.9)	28.3 (26.1-30.5)	6.8 (5.6-8.0)	14.2 (12.5-15.9)	7.3 (6.0-8.6)
College/ Trades	80.2 (79.1-81.4)	19.8 (18.6-20.9)	6.7 (5.9-7.4)	9.1 (8.3-10.0)	4.0 (3.4-4.6)
University or more	91.4 (90.7-92.2)	8.6 (7.8-9.3)	3.4 (2.9-3.9)	4.1 (3.6-4.7)	1.0 (0.8-1.3)

*indicates a significant difference across education level (Rao-Scott Chi-Square p<0.05)

HOUSEHOLD INCOME AND LOW INCOME MEASURE

There was a significant difference in household food insecurity across income levels. As household income increased, the prevalence of household food insecurity among children decreased (Figure 5). Approximately 41.4% of children living in households with a total income of less than $25,000 were food insecure. There was also a significant difference in household food insecurity and low income, measured using low income cut-off measure, adjusted for household size and community size (Table 3).

Figure 5: Percentage of children living in food insecure households, by household income; Ontario, 2019



C – This estimate should be interpreted with caution due to high sampling variability

Table 3: Percentage of children living in food secure and food insecure households by household income and a Low Income Cut-Off (LICO); Ontario, 2019

Household income	Food secure* % (95% CI)	Food insecure* % (95% CI)
<$25,000	58.6 (55.5 - 61.6)	41.4 (38.4 - 44.5)
$25,000 to 49,999	68.8 (66.6 - 70.9)	31.2 (29.1 - 33.4)
$50,000 to 74,999	79.0 (77.1 - 81.0)	21.0 (19.0 - 22.9)
$75,000 to 99,999	87.1 (85.5 - 88.6)	12.9 (11.4 - 14.5)
$100,000 to 149,999	92.9 (92.0 - 93.8)	7.1 (6.2 - 8.0)
$150,000 to 199,999	96.8 (95.9 - 97.6)	3.2 (2.4 - 4.1)
$200,000 and higher	98.8 (98.3 - 99.3)	1.2[C] (0.7 - 1.7)
Low Income Cut-Off (LICO)		
High income	90.0 (89.5 - 90.6)	10.0 (9.4 - 10.5)
Low income	65.5 (63.6 - 67.3)	34.5 (32.7 - 36.4)

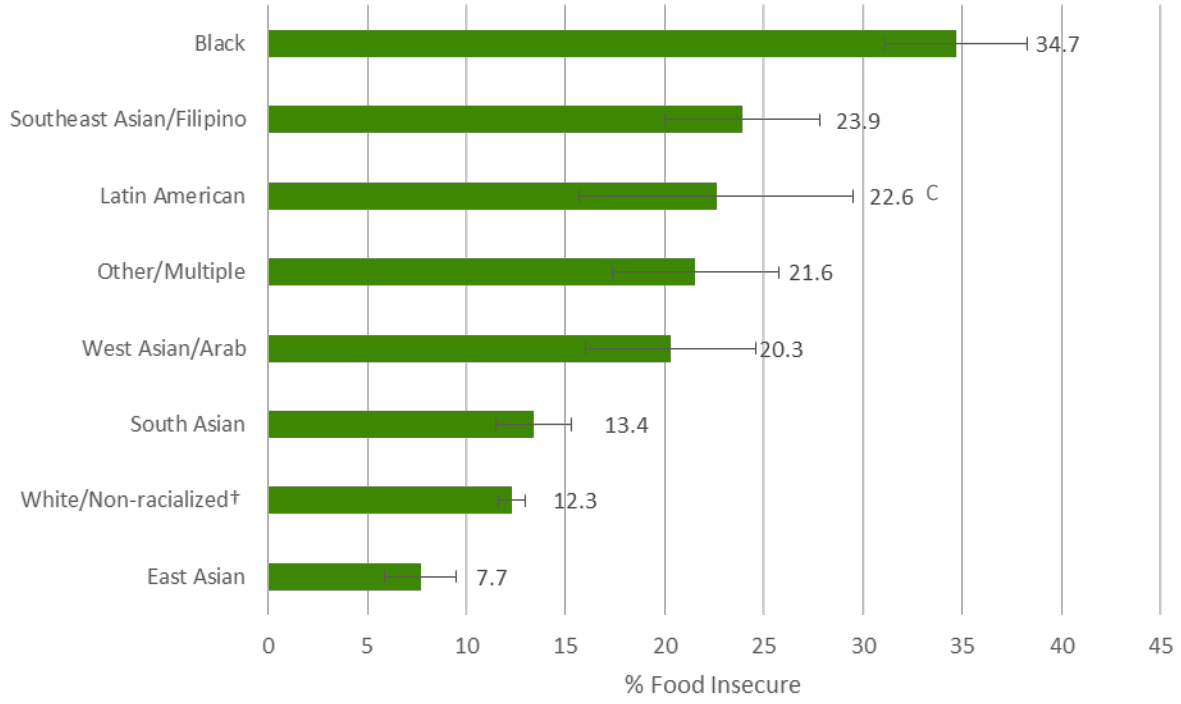
C – This estimate should be interpreted with caution due to high sampling variability
*indicates a significant difference across income level (Rao-Scott Chi-Square Test p<0.05)

RACE AND ETHNIC ORIGIN –CHILD

There was a statistically significant difference in household food insecurity across race and ethnic origin.

The highest prevalence of household food insecurity among children was observed in children who identified as Black (Figure 6, Table 4). The groups with the lowest prevalence of household food insecurity in ascending order identified as East Asian, White/Non-racialized, and South Asian; the prevalence estimates for these three groups were all lower than the provincial prevalence (15.3%).

Figure 6: Percentage of children living in food insecure households by race and ethnic origin; Ontario, 2019



C – This estimate should be interpreted with caution due to high sampling variability.
†Excludes those identifying as Indigenous

Table 4: Percentage of children living in food secure and food insecure households by race and ethnic origin; Ontario, 2019

Race and Ethnic Origin – Child	Food secure* % (95% CI)	Food insecure* %
Black	65.3 (61.7 - 68.9)	34.7 (31.1 - 38.3)
Southeast Asian/Filipino	76.1 (72.2 - 80.0)	23.9 (20.0 - 27.8)
Latin American	77.4 (70.5 - 84.3)	22.6[C] (15.7 - 29.5)
Other/Multiple	78.4 (74.2 - 82.6)	21.6 (17.4 - 25.8)
West Asian/Arab	79.7 (75.4 - 84.0)	20.3 (16.0 - 24.6)
South Asian	86.6 (84.7 - 88.5)	13.4 (11.5 - 15.3)
White/Non-racialized†	87.7 (87.0 - 88.5)	12.3 (11.5 - 13.0)
East Asian	92.3 (90.5 - 94.4)	7.7 (5.9 - 9.5)

C – This estimate should be interpreted with caution due to high sampling variability
†Excludes those identifying as Indigenous
*indicates a significant difference across race and ethnic groups (Rao-Scott Chi-Square Test p<0.05)

INDIGENOUS IDENTITY

There was a statistically significant difference in household food insecurity between children who identify as Indigenous and those who do not (Figure 7). This was consistent across all levels of household food insecurity (Figure 8, Table 5).

Figure 7: Percentage of children living in food secure and food insecure households by Indigenous identity; Ontario, 2019

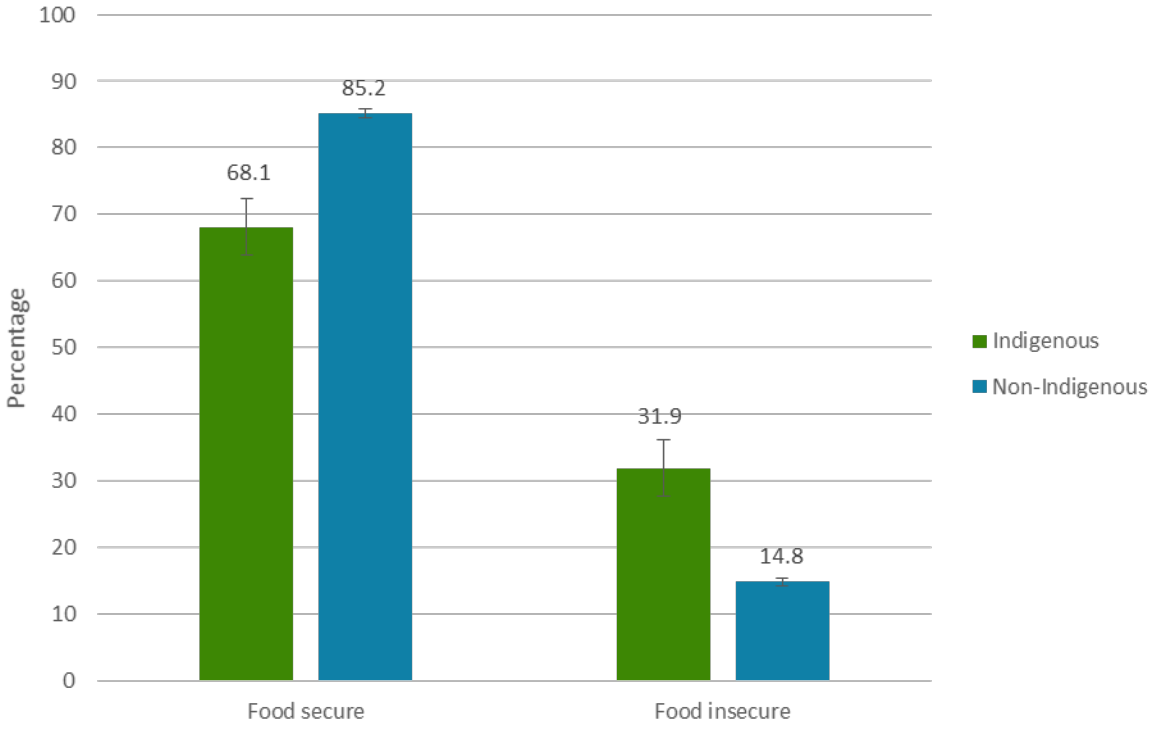


Figure 8: Percentage of children living in food insecure households by level of food insecurity and by Indigenous identity; Ontario, 2019

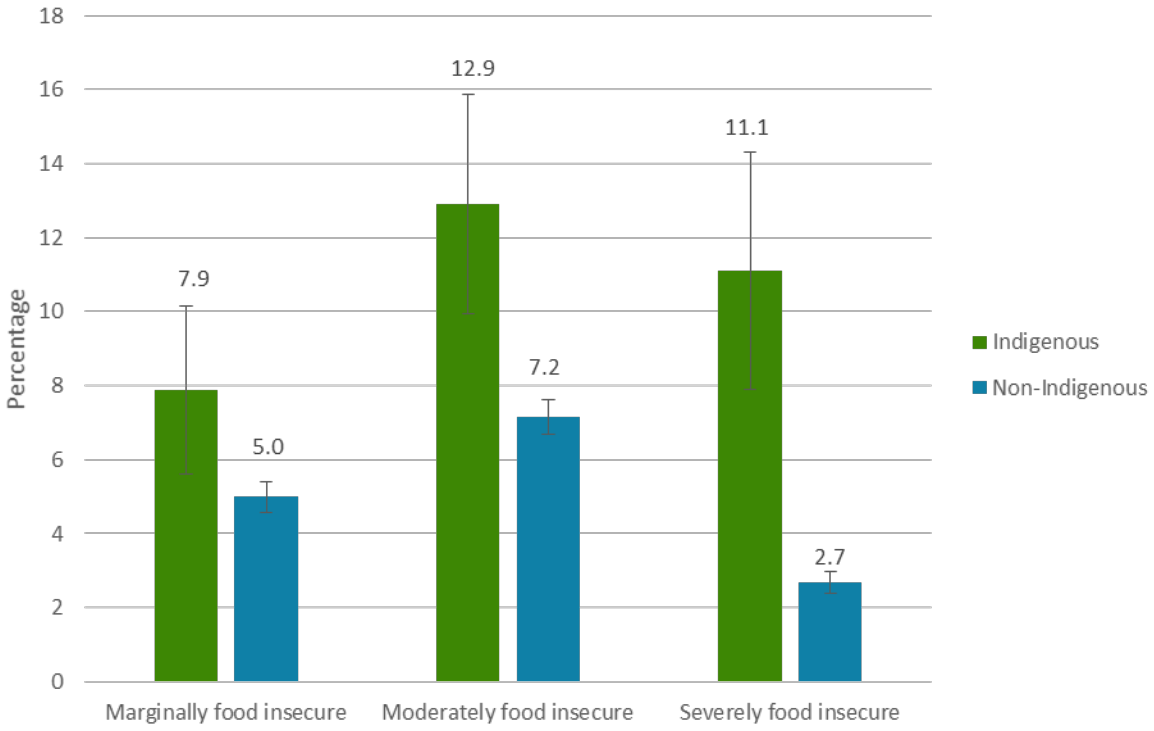


Table 5: Percentage of children living in food insecure households by level of food insecurity and by Indigenous identity; Ontario, 2019

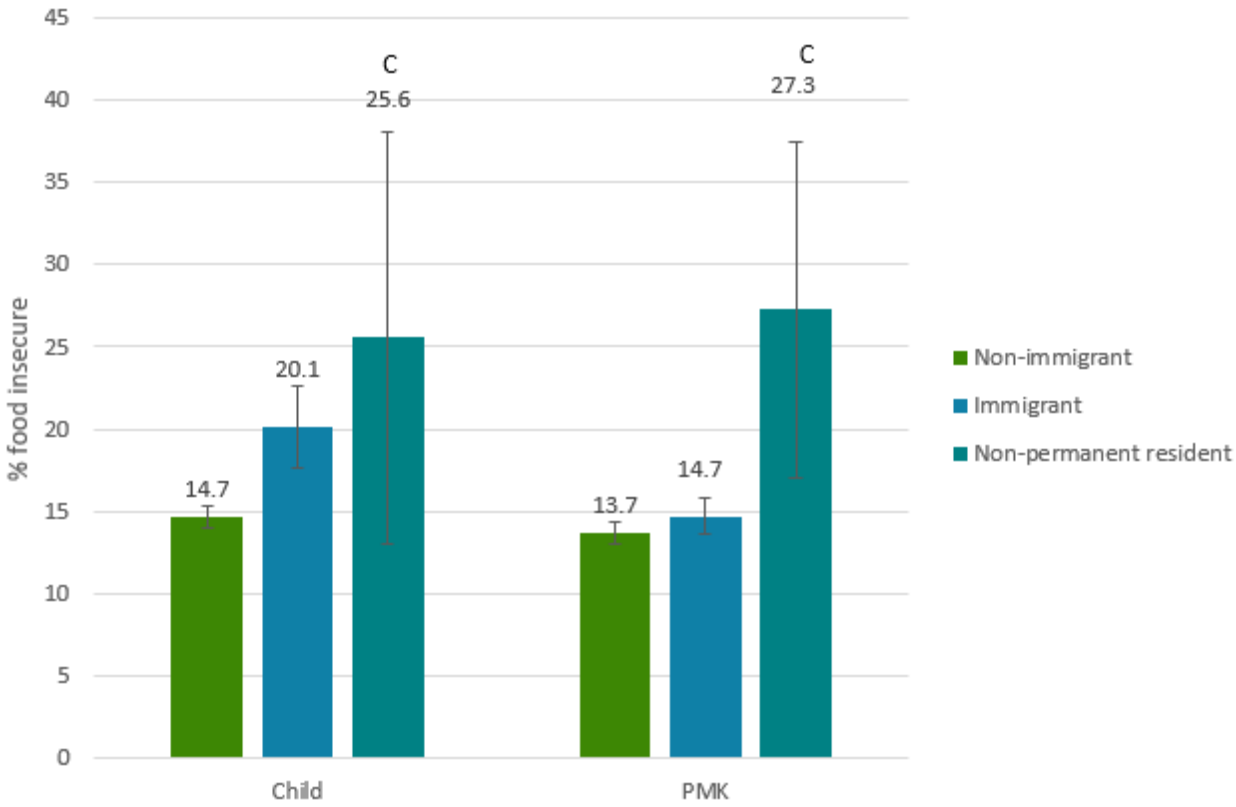
Indigenous Identity	Food secure* % (95% CI)	Total food insecure* % (95% CI)	Marginally food insecure* % (95% CI)	Moderately food insecure* % (95% CI)	Severely food insecure* % (95% CI)
Yes	68.1 (63.8-72.3)	31.9 (27.7-36.2)	7.9 (5.6-10.2)	12.9 (10.0-15.9)	11.1 (7.9-14.3)
No	85.2 (84.5-85.8)	14.8 (14.2-15.5)	5.0 (4.6-5.4)	7.2 (6.7-7.6)	2.7 (2.4-3.0)

*indicates a significant difference across Indigenous Identity (Rao-Scott Chi-Square Test $p<0.05$)

IMMIGRATION STATUS –CHILD AND PMK

A significantly higher prevalence of children who have immigrated to Canada were living in food insecure households (Figure 9, Table 6). However, PMK's identifying as immigrants had similar levels of household food insecurity compared to non-immigrants. Children and their PMK's reported to be non-permanent residents had the highest level of household food insecurity.

Figure 9: Percentage of children living in food insecure households by immigration status; Ontario, 2019



C – This estimate should be interpreted with caution due to high sampling variability.

Table 6: Percentage of children living in food secure and food insecure households by immigration status; Ontario, 2019

Immigration Status	Food secure % (95% CI)	Food insecure* % (95% CI)
Child Immigration Status		
Non-immigrant	85.3 (84.6 - 85.9)	14.7 (14.1 - 15.4)
Immigrant	79.9 (77.4 - 82.4)	20.1 (17.6 - 22.6)
Non-permanent resident	74.4 (61.9 - 86.8)	25.6[C] (13.2 - 38.1)
PMK Immigration Status		
Non-immigrant	86.3 (85.6 - 87.1)	13.7 (12.9 - 14.4)
Immigrant	85.3 (84.2 - 86.4)	14.7 (13.6 - 15.8)
Non-permanent resident	72.7 (62.5 - 82.9)	27.3[C] (17.1 - 37.5)

C – This estimate should be interpreted with caution due to high sampling variability
*indicates a significant difference across immigration status (Rao-Scott Chi-Square Test $p<0.05$)

Geographic Variables

PEER GROUP

There were significant differences in the prevalence of children living in food insecure households by Statistics Canada Peer Group, which groups public health units by geographic (e.g., population density) and socio-demographic characteristics (e.g., proportion of population that are racialized) (Figure 10, Table 7). The highest prevalence of marginal and moderate household food insecurity was in large urban areas, with high proportions of immigrant and racialized populations. The highest prevalence of severe household food insecurity was in mainly rural or urban-rural mixed communities, with low population growth and high unemployment rates.

Figure 10: Percentage of children living in food insecure households by Statistics Canada Peer Group; Ontario, 2019

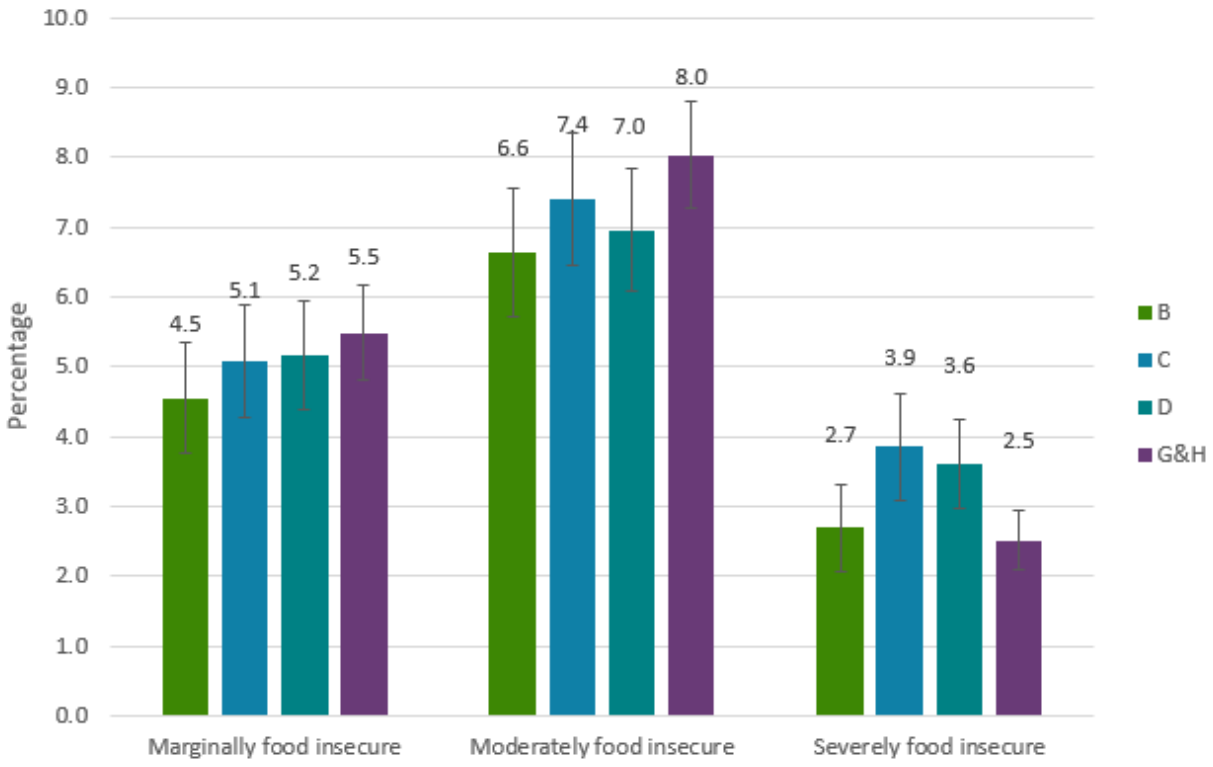


Table 7: Percentage of children living in food secure and food insecure households by Statistics Canada Peer Group; Ontario, 2019

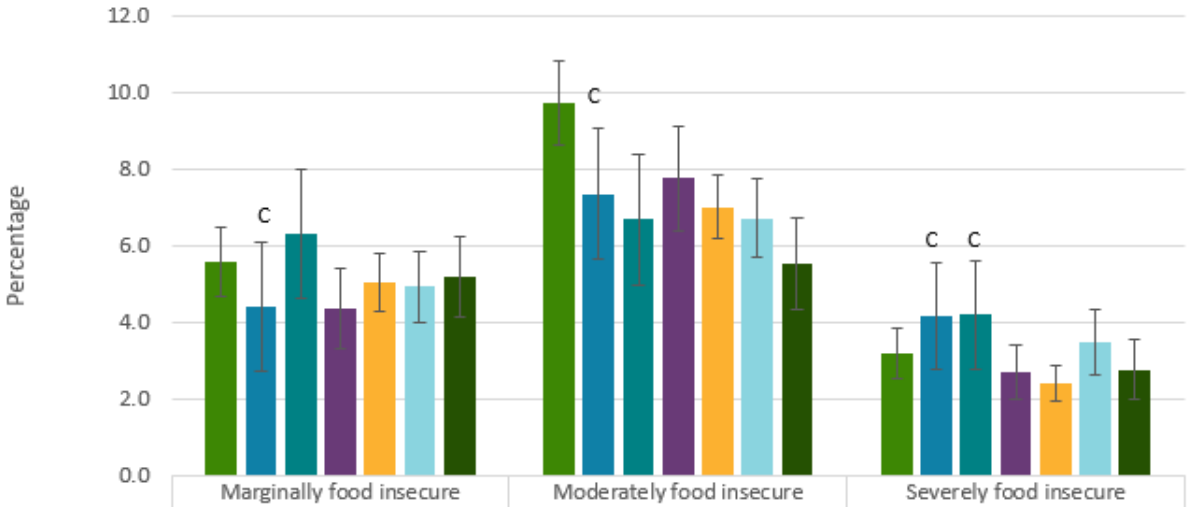
Peer Group	Food secure* % (95% CI)	Total Food Insecure* % (95% CI)	Marginally food insecure* % (95% CI)	Moderately food insecure* % (95% CI)	Severely food insecure* % (95% CI)
B	86.1 (84.8 - 87.4)	13.9 (12.6 - 15.2)	4.5 (3.7 - 5.3)	6.6 (5.7 - 7.6)	2.7 (2.1 - 3.3)
C	83.7 (82.3 - 85.1)	16.3 (14.9 - 17.7)	5.1 (4.3 - 5.9)	7.4 (6.5 - 8.4)	3.9 (3.1 - 4.6)
D	84.3 (83.0 - 85.6)	15.7 (14.4 - 17.0)	5.2 (4.4 - 6.0)	7.0 (6.1 - 7.8)	3.6 (3.0 - 4.3)
G&H	84.0 (82.9 - 85.0)	16.0 (15.0 - 17.1)	5.5 (4.8 - 6.2)	8.0 (7.3 - 8.8)	2.5 (2.1 - 2.9)

*indicates a significant difference across Peer Groups (Rao-Scott Chi-Square Test $p<0.05$)

GEOGRAPHIC REGION

There were significant differences in household food insecurity levels across geographic regions. Particularly, those children living in Toronto had higher moderate food insecurity, while children living in the Northern regions had higher severe food insecurity (Figure 11, Table 8). The percentage of children living in food insecure households by public health unit and age group (all children, less than 12 years and 12 years and older) are reported in Table 9.

Figure 11: Percentage of children living food insecure households by geographic region; Ontario, 2019



	Marginally food insecure	Moderately food insecure	Severely food insecure
Toronto	5.6	9.7	3.2
North West	4.4	7.4	4.2
North East	6.3	6.7	4.2
East	4.4	7.8	2.7
Central East	5.0	7.0	2.4
Central West	4.9	6.7	3.5
South West	5.2	5.5	2.7

C – This estimate should be interpreted with caution due to high sampling variability.

Table 8: Percentage of children living in food secure and food insecure households by geographic region; Ontario, 2019

Geographic Region	Food secure* % (95% CI)	Total Food Insecure* % (95% CI)	Marginally food insecure* % (95% CI)	Moderately food insecure* % (95% CI)	Severely food insecure* % (95% CI)
Toronto	81.5 (80.1 - 83.0)	18.5 (17.0-19.9)	5.6 (4.7 - 6.5)	9.7 (8.6 - 10.8)	3.2 (2.5 - 3.9)
North West	84.1 (80.9 - 87.3)	15.9 (12.7-19.1)	4.4[C] (2.7-6.1)	7.4[C] (5.1 - 9.6)	4.2[C] (2.3 - 6.0)
North East	82.8 (80.2 - 85.5)	17.2 (14.5-19.8)	6.3 (4.6 - 8.0)	6.7 (5.0 - 8.4)	4.2[C] (2.8 - 5.6)
East	85.2 (83.4 - 87.0)	14.8 (13.0-16.6)	4.4 (3.3 - 5.4)	7.8 (6.4 - 9.1)	2.7 (2.0 - 3.4)
Central East	85.6 (84.4 - 86.7)	14.4 (13.3-15.6)	5.0 (4.3 - 5.8)	7.0 (6.2 - 7.8)	2.4 (1.9 - 2.9)
Central West	84.9 (83.3 - 86.5)	15.1 (13.5-16.7)	4.9 (4.0 - 5.8)	6.7 (5.7 - 7.7)	3.5 (2.6 - 4.3)
South West	86.5 (84.8 - 88.2)	13.5 (11.8-15.2)	5.2 (4.1 - 6.2)	5.5 (4.3 - 6.7)	2.7 (2.0 - 3.5)

C – This estimate should be interpreted with caution due to high sampling variability.
*indicates a significant difference across income level (Rao-Scott Chi-Square Test $p<0.05$)

PUBLIC HEALTH UNIT

Table 9: Percentage of children living in food insecure households by public health unit and age group; Ontario, 2019

PHU Name	All children % food insecure (95% CI)	<12 years % food insecure (95% CI)	12+ years % food insecure (95% CI)
The District of Algoma Health Unit	18.3 (12.9-23.7)	13.1[C] (8.5-17.6)	5.2[D] (2.3-8.1)
Brant County Health Unit	15.1[C] (10.6-19.6)	10.0[C] (6.5-13.6)	5.1[D] (2.4-7.7)
Durham Regional Health Unit	14.9 (11.6-18.2)	11.2 (8.3-14.0)	3.7[C] (1.9-5.5)
Grey Bruce Health Unit	16.7 (12.1-21.3)	11.4[C] (7.7-15.1)	5.3[D] (2.6-7.9)
Haldimand-Norfolk Health Unit	17.8[C] (12.4-23.2)	10.4[C] (6.5-14.3)	7.4[D] (3.5-11.2)
Haliburton, Kawartha, Pine Ridge District Health Unit	17.6 (14.1-21.1)	10.6 (7.9-13.3)	7.0[C] (4.7-9.2)
Halton Regional Health Unit	10.4 (8.3-12.5)	6.0 (4.5-7.5)	4.4[C] (2.9-5.9)
City of Hamilton Health Unit	14.0[C] (9.6-18.5)	8.5[C] (5.2-11.8)	5.6[D] (2.5-8.7)
Hastings and Prince Edward Counties Health Unit	17.9 (13.7-22.1)	10.6[C] (7.4-13.7)	7.3[C] (4.5-10.1)
Huron County Health Unit	10.8† (4.9-16.8)	NR	NR
Chatham-Kent Health Unit	16.1 (12.3-19.8)	9.6 (6.7-12.5)	6.5[C] (3.9-9.0)
Kingston, Frontenac and Lennox and Addington Health Unit	13.2 (9.7-16.7)	9.1[C] (6.3-11.9)	4.1[C] (2.1-6.1)
Lambton Health Unit	13.2[C] (8.9-17.6)	7.9[C] (4.6-11.2)	5.3[D] (2.3-8.2)
Leeds, Grenville and Lanark District Health Unit	18.9 (14.3-23.5)	10.4[C] (7.1-13.7)	8.5[C] (5.4-11.6)
Middlesex–London Health Unit	14.2[C] (9.6-18.8)	10.8[C] (6.7-14.9)	3.3[D] (1.2-5.4)
Niagara Regional Area Health Unit	18.3 (13.6-23.0)	13.6 (9.7-17.5)	4.7 (2.1-7.2)
North Bay Parry Sound District Health Unit	15.3[C] (10.5-20.2)	12.0[C] (7.8-16.3)	NR
Northwestern Health Unit	17.8 (14.1-21.4)	15.1 (12.0-18.3)	2.6[D] (1.0-4.3)
City of Ottawa Health Unit	13.5 (10.7-16.3)	8.5 (6.4-10.6)	5.0[C] (3.3-6.7)
Peel Regional Health Unit	16.3 (14.4-18.2)	9.5 (8.1-10.9)	6.8 (5.6-8.0)

PHU Name	All children % food insecure (95% CI)	<12 years % food insecure (95% CI)	12+ years % food insecure (95% CI)
Perth District Health Unit	12.7[C] (7.3-18.2)	7.8[D] (3.6-12.0)	NR
Peterborough County–City Health Unit	13.6[C] (9.0-18.1)	9.3[C] (5.5-13.0)	4.3[D] (1.7-6.9)
Porcupine Health Unit	16.5[C] (11.5-21.4)	10.1[C] (6.4-13.9)	6.3[D] (3.0-9.7)
Renfrew County and District Health Unit	17.1[C] (10.9-23.3)	13.3[C] (8.0-18.7)	NR
The Eastern Ontario Health Unit	16.1 (11.4-20.7)	9.1[C] (5.5-12.8)	6.9[D] (3.8-10.0)
Simcoe Muskoka District Health Unit	15.9 (13.4-18.4)	10.6 (8.5-12.6)	5.4 (3.8-7.0)
Sudbury and District Health Unit	17.9 (12.8-23.1)	13.4[C] (9.1-17.7)	4.6[D] (1.5-7.6)
Thunder Bay District Health Unit	15.1 (10.7-19.4)	11.3[C] (7.5-15.0)	3.8[D] (1.6-6.0)
Timiskaming Health Unit	17.7[D] (7.8-27.6	NR	NR
Waterloo Health Unit	17.4 (13.5-21.2)	11.2 (7.9-14.4)	6.2[C] (4.1-8.3)
Wellington–Dufferin-Guelph Health Unit	17.3 (14.3-20.4)	11.4 (9.1-13.8)	5.9[C] (3.9-7.8)
Windsor–Essex County Health Unit	12.9 (10.0-15.9)	8.4 (6.0-10.8)	4.5[C] (2.8-6.3)
York Regional Health Unit	10.7 (8.3-13.1)	6.8 (4.9-8.6)	3.9[C] (2.5-5.4)
Oxford Elgin St. Thomas Health Unit (Southwestern)	10.9 (8.1-13.7)	6.8[C] (4.6-9.0)	4.1[C] (2.4-5.9)
City of Toronto Health Unit	18.5 (17.0-19.9)	11.2 (10.3-12.1)	7.3 (6.2-8.4)
Ontario Total	15.3 (14.7-16.0)	9.8 (9.3-10.3)	5.5 (5.1-5.9)

C and D – These estimates should be interpreted with caution due to high sampling variability
NR – This estimate could not be released as per Statistics Canada guidelines on unacceptable estimate quality (E)

Discussion

CHSCY is a valuable data source to better understand the relationship between food insecurity and child health. No other provincially-representative survey captures Ontarians 1-17 years of age, contains the gold-standard measurement tool for food insecurity (i.e., HFSSM), and collects data on a wide range of child health behaviours and outcomes. This discussion will briefly contextualize household food insecurity among children as measured by CHSCY, for consideration when interpreting and undertaking food insecurity analyses using CHSCY data. While this report provides a snapshot of food insecurity by socio-demographic indicators, interpretation of this data requires appropriate contextualization.

The CHSCY survey estimates 15.3% of children in Ontario ages 1 to 17 experienced household food insecurity in 2019. This overall prevalence from CHSCY is likely an underestimate. The 2020 Canadian Income Survey (CIS) estimated that 20.6% of children ages 1 to 17 in Ontario live in food-insecure households.[1] The difference may be due to the higher response rate for the CIS compared to CHSCY, which suggests that CIS may be more representative of the population, and a better data source for estimating food insecurity rates in Canada.

The relationships between socio-demographic characteristics and household food insecurity in CHSCY are consistent with findings from other Canadian population surveys that have included the HFSSM, specifically the CIS[1] and the Canadian Community Health Survey (CCHS).[14] Bearing in mind that households with children are significantly more likely to experience food insecurity compared to households with no children,[1] there was no significant relationship between child age or child sex at birth and food insecurity. However, children ages 1 to 4 years trended towards lower household food insecurity rates compared to older children. This trend is comparable to estimates from CIS,[1] and may be explained by the protective effects of higher Canadian Child Tax Benefit (CCB) supports for families with children under the age of 6 years.[15]

Lower educational attainment in the household, and relatedly, lower household income were both associated with higher rates of food insecurity among children. In addition to being consistent with results from other Canadian population surveys, these findings are consistent with the fact that food insecurity is most prevalent among households with inadequate and insecure income.[16]

Higher rates of household food insecurity were seen among children who are racialized and Indigenous, consistent with findings from CIS[1] and CCHS.[14] The highest rates of household food insecurity, twice that of the provincial average, were seen among Black children (34.7% living in food insecure households) and children identifying as Indigenous (31.9% living in food insecure households). These higher rates are a result of historical and ongoing systemic racism and colonialism, which create socioeconomic inequities that impact racialized and Indigenous children and their families.[16]

Higher rates of household food insecurity were also seen among children who are immigrants, but not among children whose PMK was an immigrant. This is consistent with previous findings that rates of food insecurity are higher for household with recent immigrants, but not for households with immigrants that have been in Canada for 10 or more years.[17] Immigration status has a complex association with food insecurity rates in Canada; with studies finding that the association is accounted for by other correlated socioeconomic characteristics such as income,[1,14] and also that immigration is protective against severe food insecurity.[17]

Overall, while CHSCY may underestimate food insecurity rates among children, its focus on the child population and health measures means that it remains an important survey for understanding the relationship between food insecurity, socio-demographic characteristics, and child health, particularly for younger children.

Technical Notes

Data Source

This report examined the Ontario portion of the 2019 Canadian Health Survey on Children and Youth (CHSCY),[18] which used the CCB as the sampling frame to select children and youth between the ages of 1 to 17 years old as of January 31, 2019.

- Children living in private dwellings across 10 provinces and 3 territories were eligible.
- Children living on First Nation reserves, other Indigenous settlements, foster homes, or children and youth who were institutionalized were excluded.

Indicators

HOUSEHOLD FOOD INSECURITY

Household food insecurity was derived based on 18 questions, and was summarized using four categories:

- **Food secure** indicates no difficulty with income-related food access.
- **Marginally food insecure** is defined as exactly one indication of difficulty with income-related food access.
- **Moderately food insecure** indicates compromise in the quality and/or the quantity of food consumed.
- **Severely food insecure** indicates reduced food intake and disrupted eating patterns.

A dichotomous variable was used in situations where sample sizes were too small to assess bivariate associations. In these instances, the variable was coded as food secure (respondents reported food security) versus food insecure (respondents reported either marginal, moderate, or severe food insecurity).

SOCIO-DEMOGRAPHIC VARIABLES

The socio-demographic variables used in this analysis include age, sex, household income, education of person most knowledgeable (PMK) of the child and their spouse, race and ethnic origin (including Indigenous identity), and immigration status. For more information on these socio-demographic variables and how they were recoded please see the full Technical Report.

- Age was categorized as 1-4, 5-11, and 12-17 years.
- Sex was categorized as male or female.
- Household income was categorized into 7 levels (<$24,999, $25,000-$49,999, $50,000-$74,999, $75,000-$99,999, $100,000-$149,999, $150,000-$199,999, and $200,000+).
- Low income cut-off (LICO) measure is a dichotomous variable describing low or high income. It was calculated using Canadian 2019 before-tax income adjusted for community and household size.[19]

- Highest Household Educational Attainment of the PMK or PMK Spouse was categorized into three groups (high-school or less, college/vocational/university certificate or diploma, and university or more).

- Race and ethnic origin groups were categorized as South Asian, Black, East Asian, Southeast Asian/Filipino, West Asian/Arab, White/Non-racialized, Latin American, and other (or multiple). Those who answered 'yes' to Indigenous identity are automatically included in the White/Non-racialized category. Because there is a significant difference in food insecurity status between those who identify as Indigenous and those who do not, we have excluded those identifying as Indigenous from the White/Non-racialized race and ethnic origin group and included it as a separate variable.

- Indigenous identity (First Nations, Inuit or Métis) was defined as 'Yes' or 'No'.

- Immigration status was categorized as non-immigrant, immigrant, and non-permanent residents.

Note: As race is socially constructed and historically, politically, and socially informed, data collected on race should not be used to report biological differences in health outcomes.[20]

GEOGRAPHIC ANALYSIS

The proportion of children experiencing household food insecurity was categorized by Public Health Unit (PHU), by Statistics Canada Peer Groups, and by major geographic regions.

Statistics Canada Peer Groups are based on the following list:

- Group B – Mainly urban centres with moderate population density
    - Durham Region Health Department, Halton Region Public Health, City of Hamilton Public Health Services, Middlesex-London Health Unit, Ottawa Public Health, Region of Waterloo Public Health and Emergency Services, Windsor-Essex County Health Unit
- Group C – Sparsely populated urban-rural mix
    - Algoma Public Health, Brant County Health Unit, Chatham-Kent Public Health, Eastern Ontario Health Unit, Haliburton, Kawartha, Pine Ridge District Health Unit, Hastings Prince Edward Public Health, Kingston, Frontenac and Lennox & Addington Public Health, Lambton Public Health, Niagara Region Public Health, North Bay Parry Sound District Health Unit, Porcupine Health Unit, Peterborough Public Health, Public Health Sudbury & Districts, Thunder Bay District Health Unit, Timiskaming Health Unit
- Group D – Mainly rural
    - Grey Bruce Health Unit, Haldimand-Norfolk Health Unit, Huron Perth Public Health, Leeds, Grenville & Lanark District Health Unit, Northwestern Health Unit, Renfrew County and District Health Unit, Simcoe Muskoka District Health Unit, Southwestern Public Health, Wellington-Dufferin-Guelph Public Health
- Group G&H – Largest population centres with high population density
    - City of Toronto, Peel Public Health, York Region Public Health

The major **geographic regions** are the following:

- North West – Northwestern Health Unit, Thunder Bay District Health Unit
- North East – Porcupine Health Unit, Timiskaming Health Unit, Public Health Sudbury & Districts, Algoma Public Health, North Bay and Parry Sound District Health Unit
- South West – Windsor-Essex County Health Unit, Chatham-Kent Public Health, Southwestern Public Health, Lambton Public Health, Middlesex-London Health Unit, Huron Perth Public Health, Grey Bruce Health Unit
- Central West – Wellington-Dufferin-Guelph Public Health, Halton Region Public Health, City of Hamilton Public Health Services, Niagara Region Public Health, Region of Waterloo Public Health and Emergency Services, Haldimand-Norfolk Health Units, Brant County Health Unit
- Toronto Public Health
- Central East – Peel Public Health, York Region Public Health, Durham Region Health Department, Haliburton, Kawartha, Pine Ridge District Health Unit, Peterborough Public Health, Simcoe-Muskoka District Health Unit
- East – Renfrew County and District Health Unit, Hastings Prince Edward Public Health, Kingston, Frontenac and Lennox & Addington Public Health, Leeds, Grenville & Lanark District Health Unit, Ottawa Public Health, Eastern Ontario Health Unit

Data Analysis

SAS Enterprise Guide was used to conduct all statistical analysis. Bivariate analyses was conducted between the covariates and household food insecurity as well as household food insecurity and health outcomes. Significant differences were determined using chi-squared tests.

- PROC SURVEY commands were used with bootstrap replications (n=1,000) and bootstrap weights provided by Statistics Canada. Using these, point estimates and 95% confidence intervals were calculated.
- Statistics Canada approved guidelines were used to report outcomes, where estimates with coefficients of variation (CV) with less than 0.15% were reported without warnings (Appendix A; Figure 13).
- When CVs larger than 0.35 appeared from the frequency analysis, the 4 levels of food insecurity were collapsed into a binary variable of food secure vs food insecure (marginal, moderate, and severe).

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Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Food insecurity among children using data from the Canadian Health Survey of Children and Youth. 4th ed. Toronto, ON: King's Printer for Ontario; 2024.

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Publication History

Published: 2023

2nd edition: June 2023

3rd edition: November 2023

Public Health Ontario

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