

Commentary

Moment of reckoning for household food insecurity monitoring in Canada

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Household food insecurity, inadequate or insecure access to food due to financial constraints, is a serious population health problem in Canada, linked to poorer mental health,^{1,4} higher rates of infectious⁵ and non-communicable diseases^{6, 7} and injuries,⁸ increased health care utilization,⁹⁻¹² and premature mortality.¹³ Monitored since 2005 with the well-validated Household Food Security Survey Module (HFSSM) on the Canadian Community Health Survey (CCHS),¹⁴ this problem was widespread and growing before the pandemic.^{15,16} It affected 12.7% of households, about 4 370 000 people, in 2017 to 2018.¹⁵ Recognition of the need for more effective responses was evident in two major federal policy initiatives. The Poverty Reduction Strategy, released in 2018, identified the prevalence of household food insecurity as a valuable indicator of Canadians' ability to meet basic needs,¹⁷ prompting the addition of the HFSSM to the Canadian Income Survey (CIS) to facilitate annual reporting on the Poverty Dashboard, a website introduced to track the Strategy's key poverty indicators.¹⁸ In 2019, household food insecurity was identified as a priority in the Food Policy for Canada.¹⁹

Concerns about food insecurity became heightened in the spring of 2020 as pandemic-related business closures forced thousands out of work.²⁰ In addition to rapidly implementing new income support and wage subsidy programs, federal and provincial governments introduced massive new funding programs for food banks and other charitable food assistance programs.²¹⁻²⁴ Population surveys were temporarily suspended, but in May 2020, an abbreviated measure of food insecurity was included on the Canadian Perspectives

Survey Series 2 (CPSS-2). In the prior 30 days, 14.6% of respondents to this online survey reported experiencing food insecurity.²⁵ When compared to CCHS 2017–2018, taking into account differences in the samples and measures of food insecurity, the estimates suggest a 39% increase in the prevalence of household food insecurity since the onset of the pandemic.²⁵ Against this backdrop, the unprecedented investment of public funds in food charities continued through 2021.^{26,27}

Statistics Canada's recent releases of results from CIS 2018, 2019¹⁸ and 2020²⁸ and CCHS 2019 and 2020,²⁹ summarized in Figure 1, challenge the widespread perception that food insecurity has escalated through the pandemic. Yet, these surveys provide very different prevalence estimates, raising questions about which benchmark to use to track progress in addressing household food insecurity. What follows is an examination of differences and similarities among the recent data releases and a discussion of food insecurity monitoring moving forward.

Household food insecurity through the lens of the Canadian Income Survey

January 2022 marked the first public release of food insecurity data from the CIS with results for 2018 and 2019,¹⁸ followed in March by updated estimates for CIS 2018 and 2019, plus results for 2020.²⁸ Based on CIS 2018, 6 099 000 people (16.8% of the population) in the 10 provinces were living in food-insecure households.²⁸ This number fell to 5 845 000 (15.9%) in CIS 2019, and remained relatively stable at 5 839 000 (15.8%) in CIS 2020.²⁸ The original

report of prevalence estimates from CIS 2018 and 2019 suggests a significant decline in moderate/severe food insecurity at the 90% confidence level between the two years.¹⁸

Household food insecurity through the lens of the Canadian Community Health Survey

In February 2022, prevalence estimates from CCHS 2019 and 2020 were published.²⁹ Data are not available for all 10 provinces in CCHS 2019 because British Columbia declined to measure food insecurity during this cycle. CCHS 2020 results were based on online interviews conducted in September to December 2020 in the 10 provinces. In a departure from the prior practice of reporting CCHS prevalence estimates for households,¹⁵ the recently published estimates represent the prevalence of household food insecurity among Canadians 12 years of age and older (the target population in CCHS).²⁹ This prevalence was 9.6% in 2020, a statistically significant drop from the 12.6% prevalence charted in CCHS 2017–2018 for the 10 provinces ($p < 0.001$).²⁹

Comparing the results of the two surveys

To summarize, the analyses of CIS and CCHS both indicate that the prevalence of household food insecurity in Canada was lower in 2020 than it had been before the pandemic. This finding contradicts earlier reports of escalating food insecurity triggered by the pandemic,^{25,30} but the decline is plausible given federal income supports, wage subsidies and various interventions

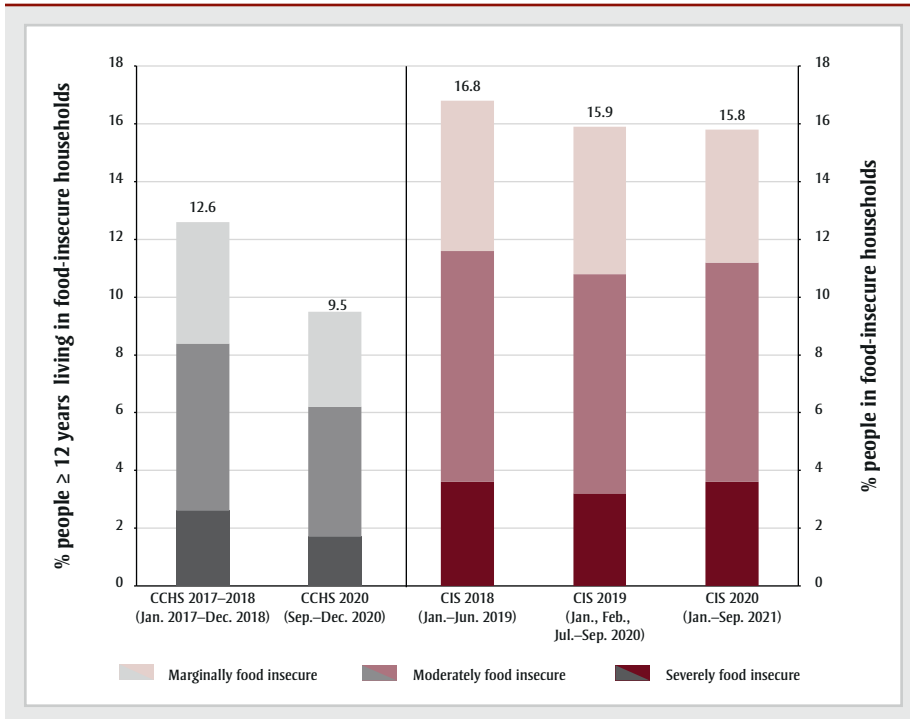
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FIGURE 1

Percentage of people living in food-insecure households in Canada, excluding the territories



Sources: CCHS data are from Polsky and Garriguet (2022)²⁹ and CIS data are from Statistics Canada (2022).²⁸ The survey year for CCHS refers to the year of interview, whereas survey year for CIS refers to the year prior to the year of interview. The survey collection periods are indicated in parentheses. Food insecurity is assessed over the prior 12 months.

Abbreviations: CCHS, Canadian Community Health Survey; CIS, Canadian Income Survey.

to cap or reduce living costs during this period.³¹

However, the results from CIS and CCHS provide very different impressions of the size of the problem of household food insecurity in Canada, both before and during the pandemic. The number of Canadians living in food-insecure households based on CCHS 2017-2018 is 1.7 million less than the number based on CIS 2018, and the latter estimate does not include data for the territories. The different units of analysis reported for 2020 complicate comparisons for that year, but, assuming Canadians under 12 years of age have a similar rate of food insecurity to those 12 and older, the CCHS results suggest that fewer than 1 in 10 Canadians were affected by household food insecurity in 2020,²⁹ whereas this ratio is closer to 1 in 6 based on the CIS results.²⁸

What accounts for the difference?

Household food insecurity is similarly correlated with other indicators of social and economic disadvantage in the CCHS and the CIS,^{18,29} suggesting that the surveys are

capturing a similar problem. A detailed examination of household-level prevalence estimates for moderate/severe food insecurity from CIS 2018 and CCHS 2017-2018 revealed that between-survey differences in population weight calibrations and the imputation of missing responses accounted for only a small fraction of the discrepancy.¹⁸ The authors suggested part of the explanation could lie in the higher response rate to CIS 2018 (77.4%, vs. 61.5% in CCHS 2017-2018), a phenomenon attributed to the fact that the CIS is a supplement to the mandatory Labour Force Survey.¹⁸ While both surveys adjust for nonresponse, they do this differently, and the effects of the adjustments are impossible to gauge.¹⁸ Additionally, some survey participants might respond differently to the HFSSM depending on whether these questions are posed in the context of questions about health and health behaviours (i.e. CCHS) or questions about employment and household economics (i.e. CIS), although any such effect is difficult to identify, let alone quantify.

The discrepancy between CCHS 2017-2018 and CIS 2018 estimates pales in comparison to the discrepancy between the

estimates from CCHS 2020 and CIS 2019 and 2020. Assuming children under 12 years of age have a similar prevalence of food insecurity to those 12 and older, there is more than a six-percentage point difference in the estimates from CIS 2019 and CIS 2020 compared to CCHS 2020, even though these surveys cover a similar time period. The much lower prevalence in CCHS 2020 may relate to the very low response rate for this survey (24.6%, vs. 80.3% for CIS 2019 and 76.6% for CIS 2020),²⁹ but more analyses are required to assess this potential bias. The response rate draws into serious question the population representativeness and reliability of results from CCHS 2020.

Other comparators

Since its adoption by Health Canada, the HFSSM has been included in one other cross-sectional population survey conducted in the 10 provinces: the 2010 Survey of Household Spending (SHS 2010). This survey also yielded a higher prevalence of food insecurity than the CCHS. Because of an error in the administration of the 8 child-referenced items of the HFSSM on SHS 2010, household food insecurity status was determined using only the adult scale, but this yielded a weighted prevalence of 16.6% (95% CI: 15.6-18.5; estimated by the authors using the master datafile). The decision of the governments of New Brunswick and Prince Edward Island not to measure food insecurity on CCHS 2010 precludes estimation of a prevalence for all 10 provinces that year, but the national prevalence estimate from CCHS 2011 (including the territories) was 12.3%.³²

The prevalence estimates from SHS 2010 and CCHS 2011 are not perfectly comparable, but their differences are unlikely to explain the large discrepancy. The omission of child-referenced items from SHS 2010 would only bias that estimate downward, and the inclusion of the territories in CCHS 2011 would, if anything, lead to a slightly higher prevalence than for the provinces alone. A comparison of prevalence estimates from CCHS 2010 and 2011 for provinces with data for both years indicates only one statistically significant difference: an increase in Quebec from 2010 to 2011.³² This suggests that if we had data for all 10 provinces from CCHS 2010, the prevalence would probably be lower than the estimate from CCHS 2011. The magnitude and direction of the discrepancy

between CCHS 2011 and SHS 2010 is consistent with the observed difference between pre-pandemic estimates from CCHS and CIS, adding credence to the idea that the prevalence of household food insecurity may be underestimated on CCHS.

In retrospect, had it been possible to compare the results of the CPSS-2 to pre-pandemic data from the CIS rather than the CCHS, the apparent change in food insecurity would have been more modest. Applying similar methods to the comparison undertaken with CCHS 2017–2018 that suggested a 39% increase in prevalence,²⁵ we estimated an 11% increase in food insecurity between CIS 2018 and CPSS-2 (authors' calculations using the master datafile). Faced with this result, the federal and provincial governments may still have chosen to allocate funds for charitable food assistance programs, but these decisions would not have then been supported by an estimate of sharply escalating food insecurity prevalence.

Where do we go from here?

As Canada begins to emerge from the pandemic and the income supports and wage subsidies implemented to deal with this crisis begin to be dismantled, it is more important than ever that we monitor the prevalence and severity of household food insecurity. Only through reliable, annual, national measurement of this problem can we begin to understand the impact of current federal and provincial/territorial government responses to it, set targets for food insecurity reduction and develop effective, evidence-based intervention strategies. With the HFSSM now included on both the CIS and CCHS, we have an important choice to make. The recent data releases indicate clearly that these two surveys are not interchangeable.

The finding that different population surveys yield different prevalence estimates is not unique to Canada. Similar discrepancies are common in the US, inarguably the world leader in food insecurity measurement. The HFSSM and its derivatives appear on several surveys there, but population prevalence estimates are derived from the Current Population Survey, selected for its large sample size, state-level representativeness and timeliness for annual reporting.³³

We recommend that the CIS be used as the survey vehicle for all food insecurity monitoring in the future, because the consistently higher response rate of CIS suggests that this survey yields a more population-representative estimate of food insecurity than the CCHS. Given the serious health implications of household food insecurity, it is imperative that the population prevalence not be systematically underestimated.

The CIS has three other important advantages over the CCHS. First, it is designed to furnish prevalence estimates annually, enabling monitoring that can never be achieved with the CCHS, given the practice of only including the HFSSM as mandatory content on alternate cycles of that survey. Second, the timely release of data tables from the CIS²⁸ and regular updating of prevalence rates for moderate/severe food insecurity on the Poverty Dashboard mean that stakeholders and policy makers can use the results of this survey to inform decisions in real time.³⁴ We maintain that marginal food insecurity should be included in the Dashboard estimates,¹⁶ but knowledge users can obtain this prevalence from the data tables.²⁸ Third, the monitoring of food insecurity via a population-based survey specifically designed to gather information on income, labour market activities and other financial circumstances facilitates policy analyses and program evaluations to inform the development of effective interventions to address food insecurity.

Our recommendation to base future food insecurity monitoring on the CIS comes with one important caveat: the CIS must include representative samples of the territories. Although the small populations in the territories mean their inclusion has little effect on national estimates,¹⁸ Nunavut in particular has a much higher prevalence of food insecurity than any other part of Canada.^{15,18} Food insecurity had continued to rise there before the pandemic despite federal investments in Nutrition North Canada, a food retail subsidy program intended to improve food access and affordability in the North.³⁵ Reducing food insecurity in the territories must be a national priority, and continued monitoring is critical to this mission.

Acknowledgements

This research is supported by the Canadian Institutes of Health Research (FRN 178380).

The research was conducted at the Toronto RDC, a part of the Canadian Research Data Centre Network. This service is provided through the support of the University of Toronto, the Canadian Foundation for Innovation, the Canadian Institutes of Health Research, the Social Science and Humanity Research Council and Statistics Canada.

Conflicts of interest

The authors have no conflicts of interest.

Authors' contributions and statement

All authors contributed to the conceptualization, drafting and revising of this commentary. VT was responsible for acquisition of data used for the calculations reported here; AAFSG conducted the data analyses.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

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