Health Canada Santé Canada

Your health and safety… our priority. *Votre santé et votre sécurité… notre priorité.*

Canadian Community Health Survey Cycle 2.2, Nutrition (2004)

Income-Related Household Food Security in Canada

Office of Nutrition Policy and Promotion
Health Products and Food Branch

Canada

Canadian Community Health Survey Cycle 2.2, Nutrition (2004)

Income-Related Household Food Security in Canada

Office of Nutrition Policy and Promotion
Health Products and Food Branch

Our Mission is to help the people of Canada
maintain and improve their health.
Health Canada

**Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—
Income-Related Household Food Security in Canada**

Disponible en français sous le titre :
*Enquête sur la santé dans les collectivités canadiennes, cycle 2.2, Nutrition (2004)—
Sécurité alimentaire liée au revenu dans les ménages canadiens*

This publication can be made available in/on computer diskette/large print/audio-cassette/Braille upon request, and can also be found on the Internet at the following address:
www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index_e.html.

For further information or to obtain additional copies, please contact:
Publications
Health Canada
Ottawa, Ontario K1A 0K9
Tel.: (613) 954-5995
Fax: (613) 941-5366
E-Mail: info@hc-sc.gc.ca

Published by the authority of the Minister of Health
Office of Nutrition Policy and Promotion
Health Products and Food Branch
Health Canada

Cat. H164-42 / 2007E
ISBN 978-0-662-45454-0
HC Pub. No. 4696

Foreword

The Office of Nutrition Policy and Promotion, Health Canada, is pleased to release *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—Income-Related Household Food Security in Canada*. This report provides, for the first time in Canada, national and provincial estimates of income-related food security at the household, adult and child level based on a standard multiple-indicator measure of food security. This report will be of value to policy analysts, public health professionals, researchers, academic faculty and students with an interest in nutrition and healthy eating, social determinants of health and population health.

Income-related food security is an important public health issue in Canada and is a key social determinant of health. Food security is essential for healthy eating—without consistent economic access to sufficient nutritious food, healthy eating cannot be achieved, increasing the risk of poor health. From a population health perspective, understanding the patterns of food security in Canada over time is critical in developing and evaluating policies and programs. This report will serve as an important reference on household food security in Canada in 2004. Employing new methods for interpreting the food security data, this report offers guidance to others who undertake their own research using these data or data from subsequent cycles of the Canadian Community Health Survey (CCHS).

This report was developed by the Office of Nutrition Policy and Promotion, with guidance from some of Canada's leading experts on food security—Dr. Valerie Tarasuk (University of Toronto) and Dr. Anne-Marie Hamelin (Université Laval)—and Dr. Mark Nord of the United States Department of Agriculture (USDA). We are also grateful to Dr. Nord for offering technical expertise in the preliminary analysis of the data, on which Appendix B in this report is based. We gratefully acknowledge the contribution of other food security experts who reviewed draft versions of this report, including Dr. Lynn McIntyre (University of Calgary) and Dr. David H. Holben (Ohio University, Athens). We appreciate the contribution of staff of Health Canada, the Public Health Agency of Canada and Statistics Canada, as well as our provincial partners, who offered their expertise throughout the project.

This is the second report in a series related to the Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—the first national nutrition survey since the Nutrition Canada survey of 1970–72. For more information about this report and other reports in the series, please visit our Web site (www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index_e.html).

We trust that the findings on the pattern of household food security in Canada in 2004 presented in this report will be informative in guiding policy, program and research decisions.

Mary Bush, M.H.Sc., RD
Director General
Office of Nutrition Policy and Promotion
Health Canada

Table of Contents

List of Tables

List of Figures

List of Appendices

List of Abbreviations

Abbreviation	*Meaning*
CCHS	Canadian Community Health Survey
CCHS 2.2	Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)
CI	Confidence Interval
CPS	Current Population Survey (U.S.)
CV	Coefficient of Variation
HFSSM	Household Food Security Survey Module
NPHS	National Population Health Survey
NLSCY	National Longitudinal Survey of Children and Youth
USDA	United States Department of Agriculture

Executive Summary

The report *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—Income-Related Household Food Security in Canada* provides national and provincial estimates of the income-related food security status of Canadian households, including among the adult and child members of those households, based on data from the CCHS 2.2. The report contributes to a wider understanding of the prevalence of food insecurity in Canada by identifying population sub-groups in which food insecurity is more prevalent and by highlighting socio-demographic factors associated with food insecurity. It will serve as an important reference on household food security in Canada in 2004.

Focus of the Report

It is recognized that "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (Food and Agriculture Organization 1996). This report reflects the characteristics of food security captured in the CCHS 2.2—specifically, the financial ability of households to access adequate food, which is strongly related to household income.

The CCHS 2.2 provides, for the first time in Canada, national and provincial data from a standard multiple-indicator measure of household food security used internationally, particularly in the United States. The food security questionnaire included in the survey was adapted from the 18-item United States Food Security Survey Module.[1] This report describes a new approach to interpreting the food security data, including the application of household survey weights. Until now, monitoring changes in income-related food insecurity in Canada has been a challenge due to differences in questions and/or methodology used in the various surveys. The food security module included in the CCHS 2.2 will be repeated in subsequent cycles of the CCHS, presenting opportunities to study the same dimensions of food security over time.

Descriptive analyses were undertaken to determine the prevalence of income-related food insecurity among households, adults and children in Canada. Additional analyses were undertaken by selected socio-demographic variables to identify sub-groups of the population in which household food insecurity is more prevalent.

[1] Bickel G, Nord M, Price C et al. *Guide to Measuring Household Food Security, Revised 2000*. Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 2000. Available at: www.fns.usda.gov/fsec/files/fsguide.pdf (accessed May 2, 2006).

Key Findings

Key findings of these analyses include the following:

- Although most Canadian households had consistent access to food in 2004, more than 1.1 million households (9.2%) were food insecure at some point in the previous year as a result of financial challenges they faced in accessing adequate food. In these households, at least one adult or child member experienced multiple conditions characteristic of food insecurity.
- Overall, 2.7 million Canadians, or 8.8% of the population, lived in food insecure households in 2004.
- Across the country, rates of household food insecurity ranged from 8.1% in Saskatchewan to 14.6% in Nova Scotia.
- Among households with children, 5.2% experienced food insecurity at the child level—that is, at least one child in each of these households experienced food insecurity in the previous year. More than 700,000 children lived in households in which either adults or children experienced food insecurity at some time in 2004, including 366,200 who lived in households in which one or more of the children were food insecure.
- Food insecurity was generally more prevalent among adults (9.0%) than among children (5.2%) in the household—especially when the experience of food insecurity was severe (adults 2.9%, children 0.4%).
- The prevalence of food insecurity was higher among households with certain characteristics, including:
  - those with incomes in the lowest (48.3%) and lower middle (29.1%) categories of household income adequacy, compared with those in the middle (13.6%), upper middle (5.2%) and highest (1.3%) categories of household income adequacy,
  - those relying on social assistance (59.7%) or worker's compensation/employment insurance (29.0%) as their main source of household income, compared with those with salary/wages (7.3%) and those with pensions/seniors' benefits (4.9%) as their main source of income,
  - off-reserve Aboriginal households (33.3%), compared with non-Aboriginal households (8.8%),
  - those who do not own their dwelling (20.5%), compared with those who do own their dwelling (3.9%), and
  - those with children (10.4%), compared with those without children (8.6%).
- Among households with children, the prevalence of food insecurity was higher among:
  - those led by a lone parent (22.5%), especially a female lone parent (24.9%), compared with households led by a couple (7.6%),
  - those with three or more children (15.0%), compared with those with one or two children (9.6%), and
  - those with at least one child under the age of 6 years (13.0%), compared with those without a child under 6 years of age (8.8%).
- Among households without children, the prevalence of food insecurity was higher among unattached individuals (13.7%), compared with couple households (3.5%).

Implications

For the first time in Canada, data are available from a sophisticated multiple-indicator survey tool that enables a more confident estimate of the prevalence of household food insecurity. Although most Canadian households had consistent access to food in 2004, the findings of this analysis confirm what other studies have reported—that food insecurity is a reality for many socio-economically vulnerable Canadian households.

The report provides a descriptive overview of income-related household food security in Canada, highlighting population sub-groups for whom food insecurity is more prevalent. Employing new methods for interpreting the food security data, it offers guidance to others who undertake their own research using these data or data from subsequent cycles of the CCHS. For researchers, the CCHS 2.2 dataset provides important opportunities for more in-depth analyses to better understand the factors associated with food security status, to cross-reference the food and nutrient consumption data to identify population sub-groups whose nutritional health is potentially compromised because of financial resource constraints, and to explore the food security situation of the particularly vulnerable Aboriginal populations living off-reserve. Such research can also inform policy and program decisions.

Households considered to be food insecure are not homogenous. The specific factors associated with their vulnerability may vary and, therefore, so will the required actions to prevent food insecurity at the household level. However, from a population health perspective, it is clear that tackling income-related food insecurity in a sustainable way will require addressing factors associated with income. Macro-level approaches—such as national, provincial or local level policies and programs aimed at improving access to adequate and affordable housing, education, secure employment and financial support when required—have the potential to profoundly influence the key determinants of income-related food security and to alleviate the burden on those Canadians who are most vulnerable. Collaboration between various government portfolios at all levels and other sectors responsible for health, social and economic policy development will be required for long-term and sustainable solutions that address the complexity of issues that determine income-related food security. The food security data garnered from the CCHS 2.2, and summarized in this report, provide important information to help inform some of these solutions.

Notes

1. Introduction

The Canadian Community Health Survey (CCHS), Cycle 2.2, Nutrition (2004) provides information about the food and nutrient intakes of Canadians and a wide range of related factors, including income-related household food security.[2] This report presents information on the income-related food security status of Canadian households in 2004, including among the adult and child members of those households. Additional tables from the analysis of the food security data, including specific information provided for each province, are available on the Health Canada website.[3]

The objectives of this report are (i) to describe income-related food insecurity in Canadian households in 2004; (ii) to describe a new approach to interpreting the food security data from a standard multiple-indicator measure of household food security; and (iii) to discuss methodological issues for consideration before attempting to compare estimates from the current study with those of other studies.

Food security is recognized as an important public health issue in Canada (Power 2005; Rideout, Seed, and Ostry 2006; Tarasuk 2004) and an important social determinant of health (McIntyre 2004). A number of studies have demonstrated poorer dietary intakes among individuals in households characterized by food insecurity compared with those in food secure settings (Rose and Oliveira 1997a, 1997b; Tarasuk and Beaton 1999).

[2] More information on the CCHS and in particular Cycle 2.2, including survey methodology, is available in *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—A Guide to Accessing and Interpreting the Data* (available at: www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/cchs_focus-volet_escc_e.html) as well as from Statistics Canada (www.statcan.ca/english/concepts/hs/index.htm).

[3] For additional tables from the analysis of the food security data, including by province, see *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—Income-Related Household Food Security in Canada: Supplementary Data Tables* (available at: www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index_e.html).

What Is Food Security?

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

–Food and Agriculture Organization 1996

This widely accepted definition of food security, which encompasses a range of issues from safety of the food supply to consistent access to adequate and culturally acceptable food at the individual or household level, underpins *Canada's Action Plan for Food Security* (Agriculture and Agri-Food Canada 1998).[4] The food security survey module included in the CCHS 2.2, adapted from the U.S. Food Security Survey Module (Bickel, Nord, Price et al. 2000), focuses on characteristics of food security related to the financial ability of households to access adequate food. This element of food security recognizes "income"—one of the most important and widely recognized determinants of health (Federal, Provincial and Territorial Advisory Committee on Population Health 1994; Wilkinson and Marmot 2003)—as an important determinant of food security. In this report, the term "food security" is used to refer to the aspect of the broader definition that relates to a household's financial ability to access adequate food.

Numerous studies in Canada have demonstrated that the ability to consistently access safe and nutritious food is a challenge for a number of Canadians (Canadian Association of Food Banks 2005; Cancer Care Ontario 2005; Che and Chen 2001; Hamelin, Beaudry, and Habicht 1998; Ledrou and Gervais 2005; McIntyre, Connor, and Warren 1998, 2000; McIntyre, Walsh, and Connor 2001; Rainville and Brink 2001; Tarasuk 2001b; Vozoris and Tarasuk 2003). Although population-based prevalence estimates for various food insecurity indicators have become available over the past decade, many questions remain about the extent and depth of food insecurity in Canada, and whether its prevalence is changing over time.

[4] *Canada's Action Plan for Food Security* is Canada's response to the 1996 World Food Summit where the international community committed to achieving food security for all and to an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing by half the number of undernourished people no later than 2015.

This report serves as a reference on the prevalence of household, adult and child food insecurity in Canada in 2004. This report will be of value to anyone with an interest in income-related household food security, including policy analysts, public health professionals, researchers, academic faculty and students. The report has particular relevance to those working in health and related social science fields.

The CCHS 2.2 provides national[5] and provincial data from a standard multiple-indicator measure of food security. Using these data, Statistics Canada has previously published estimates on the number of Canadians living in food insecure households in 2004 (Statistics Canada 2005). This report introduces new methodology for interpreting the data, including the application of household survey weights, resulting in different estimates of food security status when compared with those previously released by Statistics Canada. By describing a new approach to interpreting the food security data, this report offers guidance to others as they undertake their own research using data from the CCHS 2.2 or comparable data from existing and future surveys.

Section 2 of this report describes the methodology used in interpreting the food security data from a standard multiple-indicator measure of household food security. **Section 3** outlines the key findings from the descriptive analyses undertaken to determine the prevalence of adult, child and household food security and insecurity in Canada, including among the sub-population of Aboriginal people living off-reserve, at the provincial level, and by selected socio-demographic characteristics. **Section 4** presents a discussion of the findings in this report, outlines issues that should be considered in attempting to make comparisons with other surveys, and presents limitations of the methodology employed. **Section 5** presents conclusions from this study along with implications for research and public policy.

[5] The survey included the 10 Canadian provinces and did not include the three territories. While the terms "national" and "Canadian" are used in this document to describe the situation of the full survey sample, it should be noted that information from the territories and some remote regions in some provinces has not been captured.

Notes

2. Methods

Data used for this report were obtained from the Canadian Community Health Survey (CCHS), Cycle 2.2, Nutrition, a joint initiative of Statistics Canada and Health Canada conducted in 2004.[6] The main purpose of the CCHS 2.2 was to provide reliable information about Canadians' dietary intake and related factors. One of the objectives of the CCHS 2.2 was to measure the prevalence of household food insecurity among various population groups in Canada.

2.1 Survey Sample

The target population for the CCHS 2.2 included individuals of all ages in private dwellings in the 10 Canadian provinces. The target population did not include individuals who were full-time members of the Canadian Forces or who lived in the territories, on First Nations reserves or Crown Lands, in prisons or care facilities, or in some remote areas. Overall, the target population represents about 98% of the Canadian population.

The provincial governments of Ontario, Manitoba, and Prince Edward Island supported data collection on larger samples within their provinces. Within all provinces, the sample was proportionally allocated to rural and urban strata based on the number of dwellings in each stratum. The population of Aboriginal people living off-reserve was over-sampled in this survey, resulting in the participation of more than 1500 Aboriginal people living off-reserve: 3% Inuit, 38% Métis, and 59% First Nations (referred to as North American Indian in the survey instrument). According to the 2001 Census, almost seven in ten Aboriginal people in Canada live off-reserve (Statistics Canada 2003).

Overall, 35,107 Canadians participated in the survey, reflecting a national response rate of 76.5%. Of these, 33,469 respondents, including 1,456

[6] More information on the CCHS and in particular Cycle 2.2, including survey methodology, is available in *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—A Guide to Accessing and Interpreting the Data* (available at: www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/cchs_focus-volet_escc_e.html) as well as from Statistics Canada (www.statcan.ca/english/concepts/hs/index.htm).

Aboriginal respondents, agreed to share their responses with the survey Share Partners, including Health Canada, the provincial Ministries of Health and the "Institut de la Statistique du Québec" for Quebec respondents. The resultant Share File thus includes data from 95.3% of the respondents included in the Master File. Almost all (99.6%) of these respondents (33,346 Canadians) provided complete responses to the set of food security questions.[7]

2.2 Data Collection

Data were collected from January 2004 to January 2005. In most cases (93%), primary interviews were conducted in person by Statistics Canada interviewers, and were completed in participants' homes. The food security questions were asked of adult respondents. If the selected respondent was under the age of 18 years, a knowledgeable adult member of the household was asked the food security questions. The food security questions included in the survey are described in Section 2.4 and can be found in Appendix A (page 45).

2.3 Statistical Analysis

The CCHS 2.2 Share File, as described in Section 2.1, was the source of data analysed for this report. All analyses were undertaken using Statistical Analysis Software, Version 8 (SAS Institute Inc., Cary, NC, USA). SUDAAN Release 9.0.1 (Research Triangle Institute, Research Triangle Park, NC, USA) was used to calculate 95% confidence intervals and coefficients of variation, using a bootstrap variance estimation method, with weights supplied by Statistics Canada. Differences described in this report were determined by non-overlapping confidence intervals and are considered statistically significant with 95% confidence, unless otherwise noted. In this report, comparisons between non-independent groups (e.g. a particular province and "Canada") are direct

[7] Of the 123 for whom data were missing, 49 provided no data so were excluded from all analyses. The remainder provided either (i) complete adult-referenced data, but missing child-referenced data, or (ii) complete child data, but missing adult data. These households were not included in the estimates of the household food security situation, but were included in estimates of the adult or child food security situation, respectively.

comparisons, and do not take into account the underlying relationship between the groups. In such cases, more sophisticated analyses would be required to determine true differences; however, that was beyond the scope of this report.

2.3.1 Survey Weights

Application of survey weights in the analysis of the data provides prevalence estimates representative of the Canadian population. Two types of survey weights were provided with the CCHS 2.2 Share File: household weights and person weights. As the food security questions included in the CCHS 2.2 pertain to the situation in the household, the household weights were used in generating most of the findings presented in this report (i.e. to estimate the *number of households* experiencing food insecurity). To estimate the *number of people living in households* experiencing food insecurity (see Section 3.4), the person weights were applied.

2.3.2 Determining Comparability of Response Patterns in Selected Groups

Prior to undertaking descriptive analyses of household food security status, statistical analyses of the response patterns to the food security questions by selected sub-populations were undertaken. These analyses assessed whether the survey module performed similarly among English-speaking, French-speaking and Aboriginal respondents. These analyses demonstrated that the questions functioned similarly among the groups, indicating that any bias due to different understanding of the questions, or differences in how households experience and describe food insecurity across these three groups, would be small or negligible. See Appendix B (page 51) for more details about these analyses.

2.4 The Household Food Security Survey Module (HFSSM)

The food security questions included in the CCHS 2.2, and the methods used to determine adult and child food security status and to derive household status, were adapted from food security measurement methods developed in the United States (Bickel, Nord, Price et al. 2000; Hamilton, Cook, Thompson et al. 1997a, 1997b; Nord and Bickel 2002).

These measurement methods have been used to monitor household food security in the U.S. annually since 1995 through the Current Population Survey (CPS)[8] and for a wide range of monitoring and research on food insecurity in the United States, Canada and internationally.[9]

The Household Food Security Survey Module (HFSSM) included in the CCHS 2.2 focuses on self-reports of uncertain, insufficient or inadequate food access, availability and utilization due to limited financial resources, and the compromised eating patterns and food consumption that may result. The module is not designed to capture other possible reasons for compromised food consumption, for example, voluntary dieting or fasting. The HFSSM is a household measure; it assesses the food security situation of adults as a group and children as a group within a household, but does not determine the food security status of each individual member residing in the household. It cannot be assumed that all members of a household share the same food security status.

The HFSSM contains 18 questions about the food security situation in the household over the previous 12 months, ranging in severity from worrying about running out of food, to children not eating for a whole day. Ten of the 18 items are specific to the experiences of adults in the household or the household in general, while eight are specific to the experiences of children under the age of 18 years in the household. Each question specifies a lack of money or the ability to afford food as the reason for the condition or behaviour.

The HFSSM includes internal "screens" to reduce respondent burden. Respondents are not asked items of increasing severity if their responses to items at earlier stages in the module indicate they would likely not affirm the more severe items. Most respondents, therefore, are not asked all of the adult- and/or child-referenced items in the module. The internal screens are those used in the standard U.S. model and are described within the HFSSM (see Appendix A, page 45).

---

8 See Nord, Andrews, and Carlson (2006) for the most recent report in this series.

9 See, for example, Broughton, Janssen, Hertzman et al. (2006); Cancer Care Ontario (2005); Connell, Nord, Lofton, and Yadrick (2004); Lawn and Harvey (2003, 2004a, 2004b); Melgar-Quinonez, Zubieta, MkNelly et al. (2006); Stuff, Casey, and Szeto (2004); Tarasuk (2001b); Tarasuk and Beaton (1999); and Whitaker and Orzol (2006).

Before being asked the items in the HFSSM, respondents were asked a question about the food situation in their household in the previous year. This question, also known as the "food sufficiency question" (Bickel, Nord, Price et al. 2000), asks respondents whether their household, in the past 12 months, (1) *always had enough of the kinds* of food they wanted to eat, (2) had enough, but *not always the kinds* of food they wanted to eat, (3) *sometimes did not have enough* to eat, or (4) *often did not have enough* to eat (see Question 1 in Appendix A, page 45). The question does not specify a possible reason for the food situation, such as "lack of money". Responses to the question did not contribute directly to the determination of food security status; however, those who agreed with statements (3) or (4) were "screened in" at the first-level screen and were asked the second stage of questions in the HFSSM.

2.5 Determining Food Security Status

The methods used in this report to determine food security status differ in important ways from the U.S. standard method, which has been used in most previous studies. The approach used to determine household food security status in Canada is described in this section.

2.5.1 Categories of Food Security Status

Three categories were used to describe the food security situation experienced by adults, children, and households overall: (i) food secure; (ii) food insecure, moderate; and (iii) food insecure, severe. These category labels generally correspond with but differ from those traditionally used by the United States Department of Agriculture (USDA) in its monitoring reports (i.e. "food secure", "food insecure without hunger", "food insecure with hunger"). The terminology "with hunger" / "without hunger" was not used in the category labels for this report as there is question as to whether the measurement tool adequately assesses the experience of "hunger" (National Research Council 2006). The USDA has recently introduced new language to describe ranges of severity of food insecurity in response to the National Research Council's recommendation (Nord, Andrews, and Carlson 2006). In USDA reporting, the labels "low food security" and "very low food security" have replaced "food insecure without hunger" and "food insecure with hunger", respectively.

2.5.2 Adult, Child and Household Food Security Status

Data from the HFSSM were analysed to determine food security status among adults in the household and among children in the household; food security status of the household was then derived from the food security status of adults and of children (if present) in the household. The 10 adult-referenced items (Adult Food Security Scale) were used to determine the food security situation *among adults*. The eight child-referenced items (Child Food Security Scale) were used to determine the food security situation *among children*. Among households without children, adult food security status was also *household* food security status. Among households with children, the results of the analysis of both the adult and child scales were considered in determining the food security status of the household. If both adults and children in the household were food secure, the household was considered food secure. If *either* adults or children, or *both* adults and children, in the household were moderately food insecure, and *neither* was severely food insecure, the household was considered moderately food insecure. If *either* adults or children in the household were severely food insecure, the household was considered severely food insecure.

In the U.S. standard method, the food security status of households with children is determined by considering all 18 items combined, not the two scales separately (see, for example, Nord, Andrews, and Carlson 2006). Research has shown that the single scale can be problematic because the relationship between the food security of adults and of children in the same household depends critically on the ages of the children (Nord and Bickel 2002). The approach of considering the food security situation of adults and of children in the household separately is similar to that employed in the analysis of the 18-item food security module in the baseline surveys for the Canadian Food Mail Program Pilot Projects, undertaken in three isolated northern communities[10] (Lawn and Harvey 2003, 2004a, 2004b). This approach was useful as it allowed these surveys to determine that the prevalence and severity of food insecurity among children was similar to that among adults. This important finding would not have been apparent if only a single household-level scale had been used.

[10] The Canadian Food Mail Program aims to promote healthy eating and improve food security in remote and isolated communities in Canada's north by reducing the postage rate for shipping priority perishable nutritious foods. The pilot projects also included nutrition education, retail training in proper food handling and storage, store labels to identify "Priority Perishables" and periodic food price and quality surveys.

2.5.3 Thresholds for Defining Food Security Categories

The food security status of child and adult members of the household was determined by the number of food-insecure conditions reported; that is, by the number of questions in the HFSSM that the respondent answered affirmatively on behalf of the household. Information on responses to the individual items in the module are shown in Appendix C (page 77). Depending on the question, a response was considered affirmative if the respondent indicated (i) "yes"; (ii) "often" or "sometimes"; or (iii) "almost every month" or "some months but not every month". To be considered "food secure", no items, or only one item, in the adult or child scale could be affirmed (see box, "Food Security Status"). This is a departure from the U.S. standard method, in which two affirmative responses are also classified as food secure. As discussed by Tarasuk (2001a, p.36–37), research has suggested that the food insecurity threshold of "three or more" in the U.S. standard method may be overly stringent—two affirmative responses suggest the presence of some degree of food insecurity. The change to a less conservative threshold was made based on advice from leading experts in nutrition and food security, taking into consideration both the cognitive content of the items and research findings on health, nutrition and child development conditions in households in this marginally secure/insecure range. It is recognized that even with this less conservative threshold, the small percentage of households that affirmed one item actually may have marginal food security status at the adult, child or household level.

Food Security Status		
Category Labels	**Category Description**	
	10-Item Adult Food Security Scale	**8-Item Child Food Security Scale**
Food Secure	no, or one, indication of difficulty with income-related food access 0 or 1 affirmed responses	no, or one, indication of difficulty with income-related food access 0 or 1 affirmed responses
Food Insecure, Moderate	indication of compromise in quality and/or quantity of food consumed 2 to 5 affirmed responses	indication of compromise in quality and/or quantity of food consumed 2 to 4 affirmed responses
Food Insecure, Severe	indication of reduced food intake and disrupted eating patterns ≥6 affirmed responses	indication of reduced food intake and disrupted eating patterns ≥5 affirmed responses

In this report, households in the "moderate" category of food insecurity reported multiple indications of problems with food access among adults and/or children, but typically reported few, or no, indications of reduced food intake. Their experiences included, for example, inadequacy in household food supplies, or adjustments to the quality of food consumed. Households in the "severe" food insecurity category reported disrupted eating patterns and reduced food intake among adults and/or children in addition to the conditions reported by moderately food insecure households.

2.6 Descriptive Variables

Percentages of households in each food security category are reported for sub-populations based on a number of household socio-demographic characteristics, including household type, household income adequacy, main source of household income, highest level of household education and ownership of dwelling. Descriptions of the variables for these characteristics can be found in Appendix D (page 83).

3. Key Findings

Descriptive analyses were undertaken to determine the prevalence of adult, child and household food security and insecurity in Canada, including among the sub-population of Aboriginal people living off-reserve,[11] and at the provincial level. Additional analyses were undertaken by selected socio-demographic variables to identify sub-groups of the population in which food insecurity is more prevalent. Key findings of these analyses are presented in this section. Detailed tables can be found in Appendix E (page 87). Additional tables from the analysis of the food security data, including by province, are available on the Health Canada website.[12]

Almost all prevalence estimates refer to the percentage of *households* in each of the food security status categories. The exception is Section 3.4, which provides estimates of the percentage of *Canadians living in households* experiencing conditions of food security or insecurity.

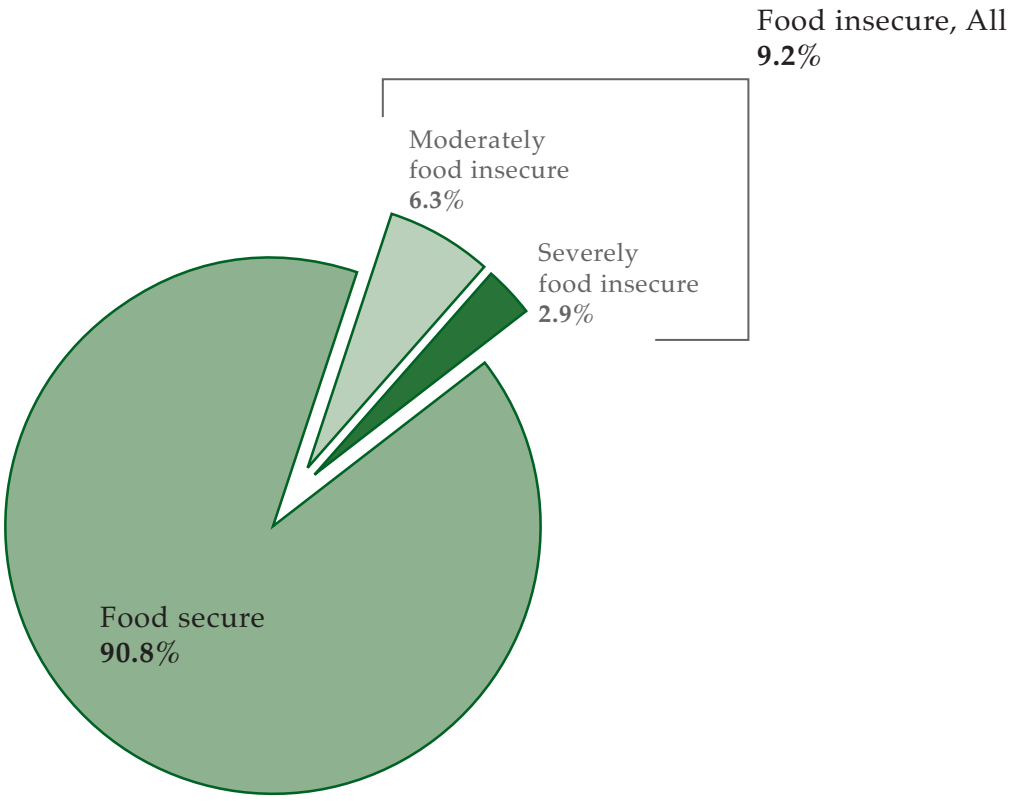
3.1 Household Food Security Status

In 2004, 90.8% of Canadian households were food secure. The remaining 1.1 million Canadian households (9.2%) were moderately or severely food insecure (see Figure 3.1 and Table E.1). In these households, adults, children (if present), or both experienced either moderate or severe food insecurity. By province, the prevalence of household food insecurity ranged from 8.1% in Saskatchewan to 14.6% in Nova Scotia (see Figure 3.2 and Table E.2). With the exception of Nova Scotia, the prevalence of food insecurity in each of the provinces did not differ significantly from the national average (9.2%).

[11] An affirmative response to the question "People living in Canada come from many different cultural and racial backgrounds. Are you: Aboriginal (North American Indian, Métis, Inuit)?" was used to identify Aboriginal respondents and thus, Aboriginal *households*. It is recognized, however, that other members of the household may not necessarily self-identify as being of Aboriginal cultural or racial background.

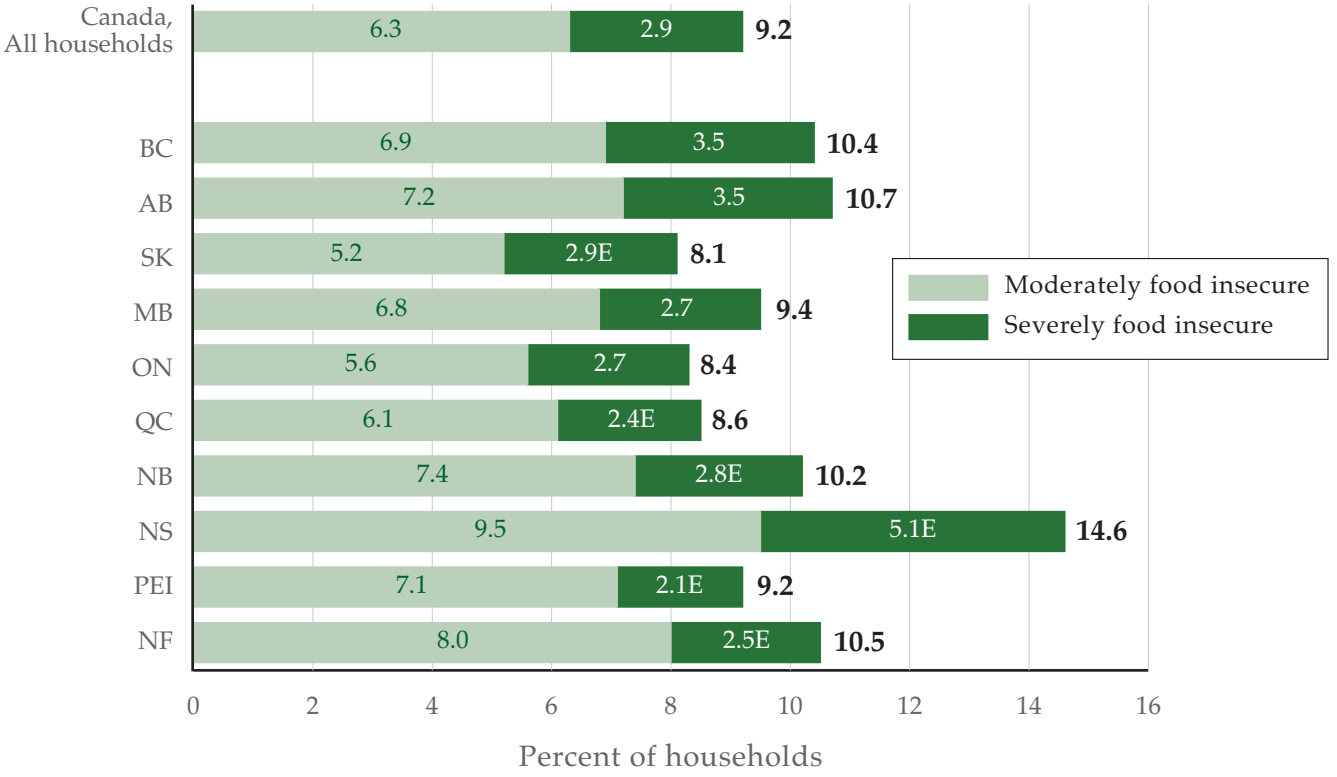
[12] For additional tables from the analysis of the food security data, including by province, see *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—Income-Related Household Food Security in Canada: Supplementary Data Tables* (available at: www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index_e.html).

Figure 3.1 **Income-related household food security status in Canada, 2004**



Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Figure 3.2 Income-related household food insecurity by province, 2004

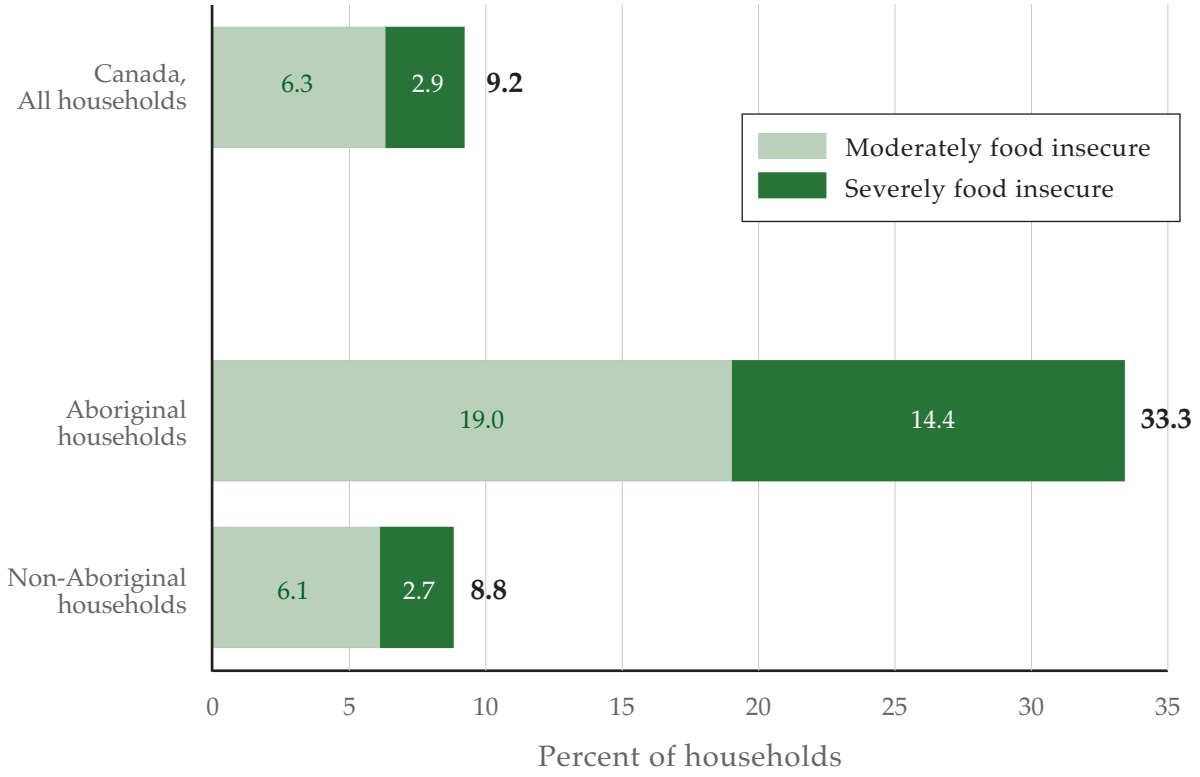


Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

Off-reserve Aboriginal households experienced a higher prevalence and depth of food insecurity than non-Aboriginal households (see Figure 3.3 and Table E.3). One out of three (33.3%) Aboriginal households was food insecure, including 14.4% with severe food insecurity—thus 43% of all food insecure Aboriginal households were severely food insecure. In comparison, 8.8% of non-Aboriginal households were food insecure, including 2.7% with severe food insecurity, representing 31% of the food insecure households.

Figure 3.3 **Income-related household food security status of Aboriginal and non-Aboriginal households in Canada, 2004**



Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

3.2 Household Food Security Status by Household Type

3.2.1 Households with Children

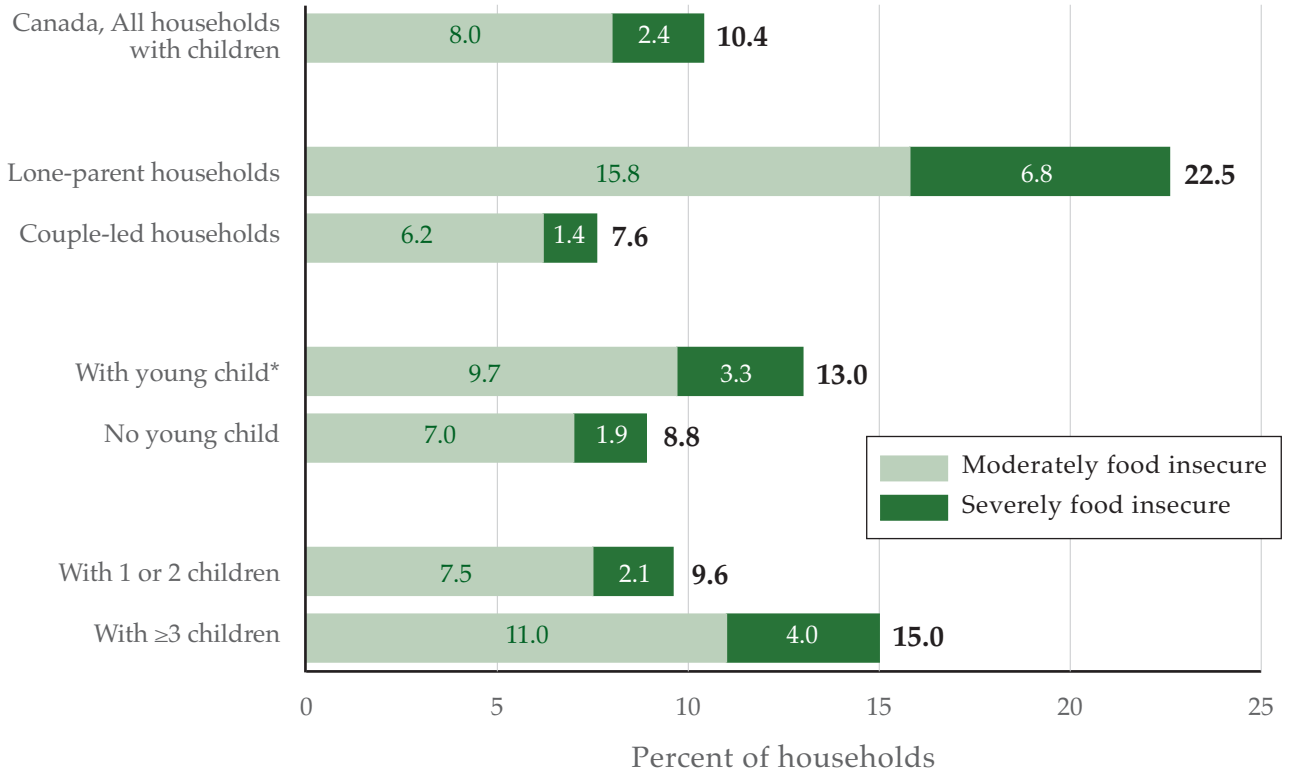
In Canada in 2004, the overall prevalence of food insecurity was higher in households with children (10.4%) than in households without children (8.6%) (see Table E.1). Among households with children, 5.2% experienced food insecurity at the child level—that is, at least one child in each of these households experienced food insecurity in the previous year (see Table E.1). Among Aboriginal households with children, 38.8% experienced food insecurity, in comparison with 27.8% of Aboriginal households without children (see Table E.3).[13] Further, almost one quarter (23.1%) of Aboriginal households with children reported food insecurity among children (see Table E.3), a rate much higher than that experienced in non-Aboriginal households (4.8%) (data not shown).

Overall, food insecurity was more prevalent if the household included at least one child under the age of 6 years (13.0%) compared with no children under the age of 6 (8.8%) (see Figure 3.4 and Table E.1). The difference appears to be related to higher rates of food insecurity among the adults in the households, not among the children. The prevalence of household food insecurity also was higher in households with three or more children (15.0%) compared with one or two children (9.6%). Households with three or more children were more likely to have higher rates of food insecurity among both the adults (13.9%) and the children (8.6%), compared with households with fewer children (adults 9.0%, children 4.6%).

The prevalence of food insecurity in households led by female lone parents (24.9%) was three times that of households led by male lone parents (8.3%, interpret with caution) or couples (7.6%). The prevalence of severe food insecurity in female lone-parent households (7.5%) was five times greater than in couple-led households (1.4%). Among Aboriginal households with children, more than one in two (53.1%) female-led lone-parent households and more than one in four (27.5%) couple-led households experienced food insecurity (see Table E.3).

[13] Note: the confidence intervals around these estimates overlap, indicating that the differences are not statistically significant with 95% confidence.

Figure 3.4 **Income-related food security status of Canadian households with children by selected characteristics, 2004**



Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

* Young children were defined as 6 years of age or younger.

3.2.1.1 Food Security Status of Adults and Children within the Household

In 2004, an estimated 412,300 Canadian households with children were food insecure: 317,100 were moderately food insecure and 95,200 were severely food insecure (see Table E.1). Food insecurity was experienced by adult *and* child members in 44.4% of food insecure households, whereas in one half of the households (49.8%), only the adult members of the household experienced food insecurity (see Table 3.1). In few of these households (just under 6%) food insecurity was experienced only by the child or children in the household while adult members of the household were food secure. Of the estimated 95,200 households with severe food insecurity, most (85.0%) had severe food insecurity only among adult members, while 11.3% had severe food insecurity among both adult and child members.

Table 3.1 **Child and adult food security status, households with children, Canada, 2004**[1,2]

	All food insecure households[3]		Severely food insecure households[4]	
	Food insecure		Severely food insecure	
	n	%	n	%
Both adults and children	182,900	44.4	10,800	11.3
Adults only	205,300	49.8	81,000	85.0[5]
Children only	24,100	5.8	F	F

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Legend:

n Weighted sample size, rounded to the nearest 100

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

Footnotes:

1. Territories and First Nations reserves are not included.
2. Children are defined as individuals younger than 18 years of age.
3. This category represents 412,300 households, or 10.4% of all households with children; households are either moderately food insecure or severely food insecure.
4. This category represents 95,200 households, or 2.4% of all households with children.
5. Child status was either food secure (22.1%) or moderately food insecure (63.0%).

3.2.2 Households without Children

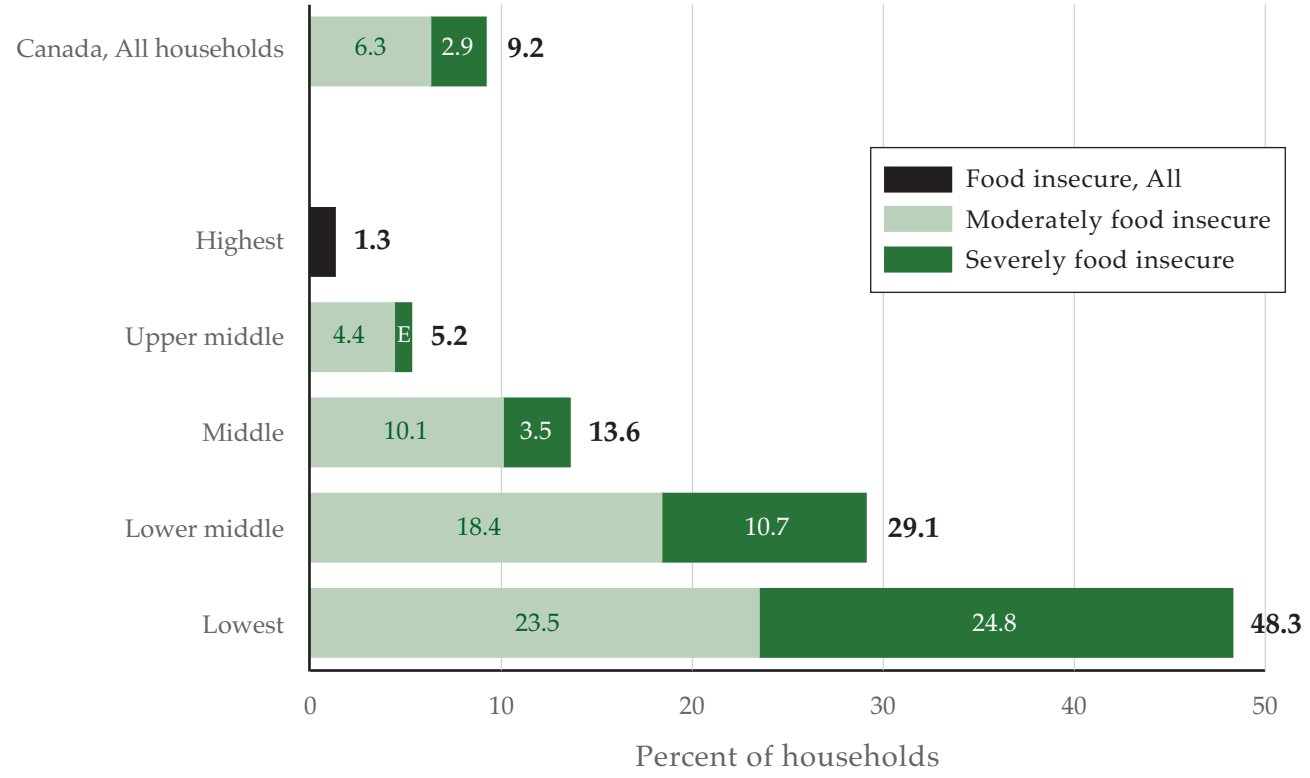
Among Canadian households without children, the prevalence of food insecurity was higher among households of "unattached individuals" (13.7%) than among "couple" households (3.5%) (see Table E.1). This pattern appeared consistently across the 10 provinces (data not shown). Among Aboriginal households without children, 27.8% experienced food insecurity; more than half (58%) of those food insecure households were considered severely food insecure (16.2%, interpret with caution).

3.3 Food Security Status by Selected Socio-Demographic Characteristics

Food security status was compared across selected socio-demographic groups (see Figures 3.5, 3.6, 3.7 and 3.8 and Table E.1). The results show a clear relationship between household income adequacy[14] and household food insecurity. At the national level, the prevalence of food insecurity increased as income adequacy declined (see Figure 3.5). In the lowest income adequacy category, households were as likely to be severely as moderately food insecure (24.8% and 23.5%, respectively), unlike in other income categories where moderate food insecurity predominated. This reflects the larger proportion of households in the lowest income adequacy category with severe food insecurity among adults (24.9%). As for food insecurity among children, prevalence rates in households with the "lowest" and "lower middle" income adequacy (22.7% and 27.7%, respectively) were higher than in the "middle" and "upper middle" income adequacy categories (8.3% and 2.6%, respectively). Among Aboriginal households in the lowest income adequacy category, the prevalence of severe food insecurity at the household (45.9%) and adult (45.9%) levels was roughly double that of moderate food insecurity at the household (23.3%, interpret with caution) and adult (22.0%, interpret with caution) levels (see Table E.3).

[14] Household income was classified in terms of a five-level categorical variable describing income adequacy; this variable, constructed by Statistics Canada, was based on information about gross total household income in the past 12 months and household size (see Appendix D, page 83).

Figure 3.5 **Income-related household food security status in Canada by income adequacy category, 2004**



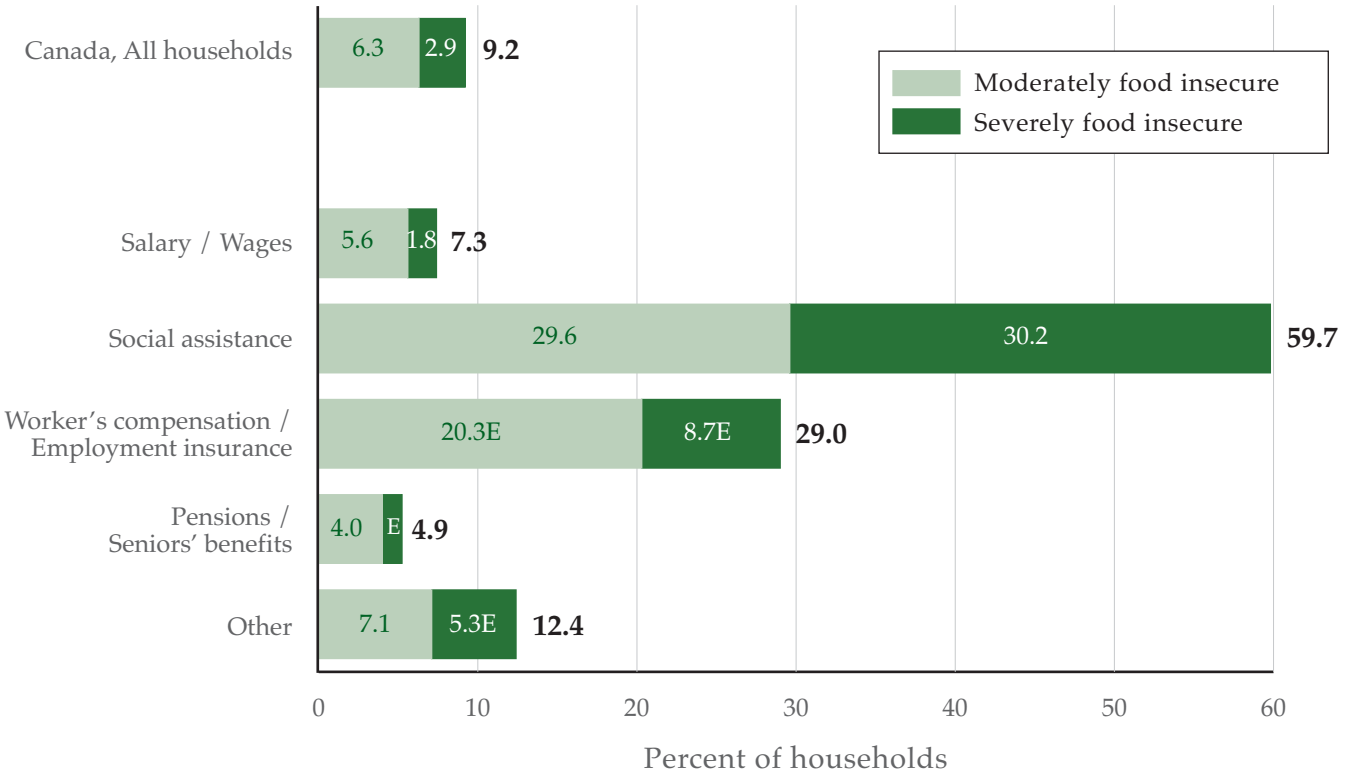
Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

Food insecurity was more prevalent in households in which the main source of income was "social assistance" (59.7%) or "worker's compensation/employment insurance" (29.0%) than in households with other main sources of income (see Figure 3.6). Severe food insecurity among households with social assistance as the main source of income was as common (30.2%) as moderate food insecurity (29.6%). Households with "salary/wages" and those with "pensions/seniors' benefits" as their main source of income experienced much lower rates of food insecurity (7.3% and 4.9%, respectively). Among Aboriginal households, food insecurity was more prevalent among those with "social assistance" (67.7%) and

"other" (66.6%)[15] as their main source of income, compared with "salary/wages" (21.8%) (see Table E.3). The prevalence of food insecurity among children was high when social assistance was the main source of household income—37.8% among all households with this main source of income; 57.8% among Aboriginal households with this main source of income.

Figure 3.6 **Income-related household food security status in Canada by main source of income, 2004**



Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

[15] "Other" includes "alimony", "child support", "child tax benefits", "dividends and interest" and "other".

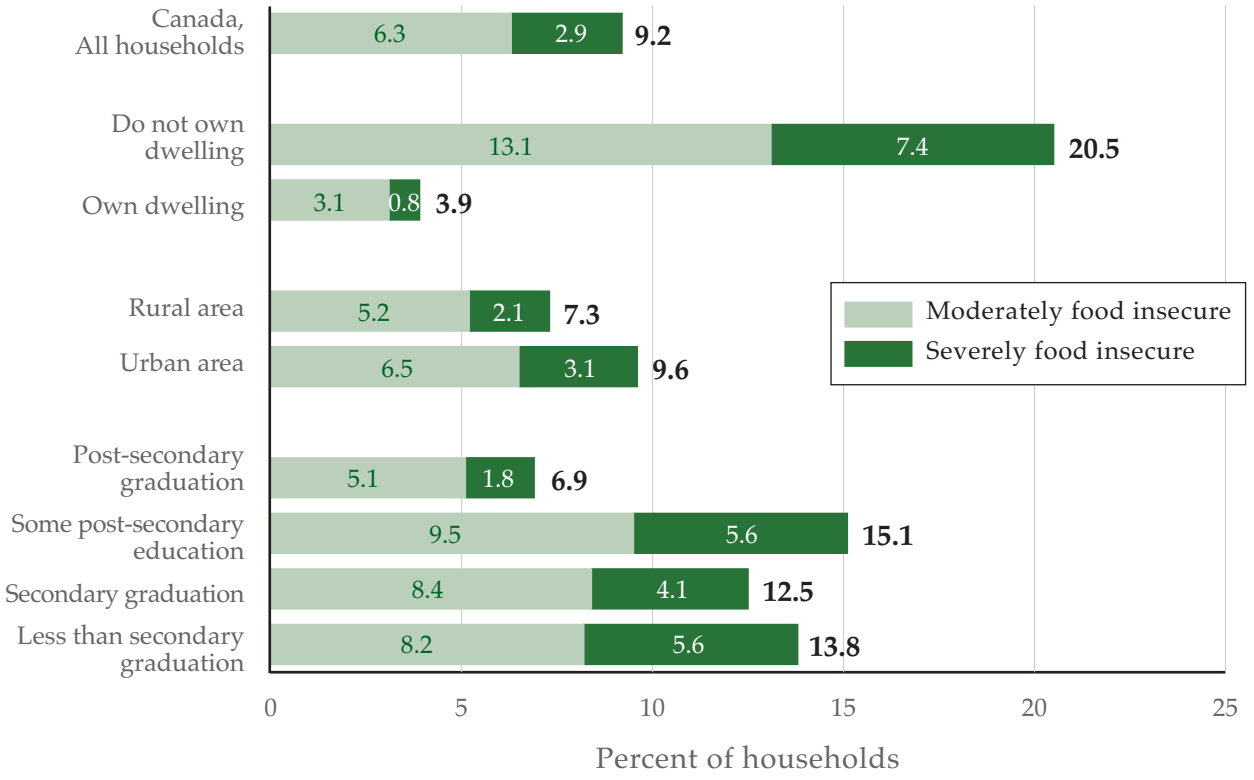
Not owning a dwelling was related to higher rates of food insecurity, with one in five (20.5%) households in this situation considered food insecure, compared with only 3.9% of households where the dwelling was owned (see Table E.1 and Figure 3.7). One in two (49.5%) Aboriginal households not owning a dwelling were considered food insecure; one in three (34.2%) had food insecurity among their child members (see Table E.3).

Among all households, the prevalence of food insecurity was lower in households with post-secondary graduation as the highest level of education achieved in the household, compared with the other three education levels reported. When considering only Aboriginal households the pattern was similar; however, the prevalence of household food insecurity in households in the highest education category (20.9%) (see Table E.3) was three times that of non-Aboriginal households in the same education category (6.8%) (data not shown) and more than one and a half times the prevalence of food insecurity in non-Aboriginal households in the lowest education category, "less than secondary school graduation" (12.8%) (data not shown).

Overall, households in urban areas had a higher prevalence of food insecurity (9.6%) than those in rural areas (7.3%). Among Aboriginal households, the prevalence of household food insecurity in urban areas (36.2%) appears higher than in rural areas (24.3%); however, the estimates are not statistically different (see Table E.3).

With a few exceptions, provincial estimates of the prevalence of household food insecurity by selected socio-demographic characteristics were similar to the Canadian average. One notable exception was the higher prevalence of food insecurity among Alberta households with social assistance as their main source of income (84.0%) (data not shown) when compared with the rate among all Canadian households relying on social assistance (59.7%).

Figure 3.7 **Income-related household food security status in Canada by selected characteristics, 2004**



Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

3.4 Number of Canadians Living in Food Insecure Households

The estimates presented in earlier sections of this report refer to the *number of households* in Canada experiencing various levels of food security, determined through the application of the survey's household weights. This section presents data on the *number of people living in households* experiencing conditions of food insecurity;[16] to obtain these estimates, the survey's person weights were applied. As not all people in food insecure households are necessarily food insecure, one cannot assume that the individual responding to the survey has the same food security status as the household. It is therefore not possible with the HFSSM to estimate the individual number of Canadians experiencing food insecurity.

In 2004, 8.8% of the population, or approximately 2.7 million Canadians, lived in households experiencing food insecurity (see Table E.4). Most were adults, but 711,300 were children (data not shown). While these children lived in food insecure households, they did not necessarily directly experience food insecurity themselves.

More than three quarters of a million (777,200) Canadians—including 366,200 children—lived in households in which food insecurity was experienced by one or more children (data not shown). As the measure of child food insecurity refers to the situation of any child in the household, it is not possible to conclude that all children in these households were food insecure.

Among Aboriginal Canadians living off-reserve, one third (32.9%), or almost 190,000, lived in households experiencing food insecurity; 83,700 lived in households in which food insecurity was experienced by children. Additional information about the number of Canadians living in food insecure households can be found in Table E.4.

[16] In subsequent cycles of the CCHS in which the HFSSM is asked at the "health region" level, only person survey weights will be available. Results from analyses at the health region level will be comparable to those reported in this section; that is, they will provide estimates of the number and percentage of people living in households that experienced conditions of food insecurity.

Notes

4. Discussion

The findings presented in this report strengthen our understanding of the prevalence of income-related household food insecurity in Canada and the factors associated with vulnerability. Many of the findings are consistent with and build on previous research. Numerous Canadian studies have shown undeniable links between low household income and food insecurity or insufficiency (Che and Chen 2001; Hamelin, Beaudry, and Habicht 1998; Ledrou and Gervais 2005; McIntyre, Connor, and Warren 1998, 2000; McIntyre, Walsh, and Connor 2001; Rainville and Brink 2001; Vozoris and Tarasuk 2003). This relationship is to be expected, as most of the survey instruments were designed to assess food access in the context of limited financial resources. Previous studies have demonstrated that the risk of income-related food insecurity is higher among the same sub-populations shown to have the greatest vulnerability in this study—namely, Aboriginal people living off-reserve (Che and Chen 2001; McIntyre, Connor, and Warren 2000); those receiving social assistance as their primary source of income (Che and Chen 2001; McIntyre, Connor, and Warren 2000; Vozoris and Tarasuk 2003); lone-parent households headed by women (Che and Chen 2001; Ledrou and Gervais 2005; McIntyre, Walsh, and Connor 2001; Vozoris and Tarasuk 2003); and those who do not own their dwelling (Che and Chen 2001; Vozoris and Tarasuk 2003). The finding that roughly 60% of households with social assistance as their main source of income were food insecure is disconcerting but not unexpected. A 2006 report by the National Council of Welfare states that welfare (social assistance) incomes continue to decline for many recipients (National Council of Welfare 2006). The report indicates that welfare incomes in 2005 were far below the poverty line, average household incomes, and median household incomes for most household types across the country.

The CCHS 2.2 data confirm that, in 2004, food insecurity was generally more prevalent among adults than among children in the household—especially when the experience of food insecurity was severe. Previous research demonstrates that adults, especially mothers, compromise their own food consumption to protect their children from nutritional deprivation (Badun, Evers, and Hooper 1995; Campbell and Desjardins 1989; McIntyre, Glanville, Raine et al. 2003), which supports this finding.

4.1 Comparison of Prevalence Estimates—Considerations

It is inappropriate to directly compare the food security prevalence estimates from the CCHS 2.2 with those from previous surveys. Across surveys, the number of questions, as well as the questions themselves, have been inconsistent, meaning that different aspects of food security may have been assessed. The CCHS 2.2 is the first national survey in Canada to include the 18-item HFSSM. Previous national surveys, including the National Population Health Survey (NPHS) and earlier cycles of the CCHS, included only a few questions about household food security. The National Longitudinal Survey of Children and Youth (NLSCY) included two questions about child hunger, and a number of the provincial nutrition surveys conducted through the 1990s included some questions about food security. While it is possible to identify vulnerable sub-groups from these surveys based on the frequency of responses to each of the questions, in the absence of a clear analytic framework for grouping responses, estimating the overall prevalence of food security is a challenge (Tarasuk 2001a). While attempts have been made to create overall "food security" prevalence estimates from some of these sets of questions (see, for example, Che and Chen 2001 and Ledrou and Gervais 2005), it is inappropriate to directly compare those findings with estimates in this report as the questions asked and the approach used to derive prevalence rates differed considerably.

4.1.1 HFSSM—Comparison of Methods to Derive Food Security Status

The prevalence estimates in this report may not be directly comparable with estimates from other surveys, even if the same set of questions (the 18-item U.S. Food Security Survey Module) was used. This is because, as described in Section 2.5, the approach used to determine the food security status of Canadian households differed in two important ways from the U.S. standard method.[17] Overall, these differences would result in a higher prevalence of food insecurity being shown in this report, particularly for households without children.

[17] See Nord, Andrews, and Carlson (2006) for an example of the application of the U.S. standard method.

The following illustrates the differences between the approaches and how each difference on its own would contribute to the different prevalence rates:

- On the adult-specific items in the HFSSM, the threshold for "food insecure" was set at 2 affirmative responses—a lower threshold than traditionally used in the U.S. standard method (i.e. 3). This results in somewhat higher prevalence rates of food insecurity than the U.S. standard method.
- The food security status of households with children was based on two separate measures of adult food security (the Adult Food Security Scale) and child food security (the Child Food Security Scale) that, together, constitute the 18-item HFSSM. In contrast, using the U.S. standard method, the food security status of households with children is determined by considering all 18 items in one scale. This difference on its own would result in somewhat lower estimates of household food insecurity when compared to the U.S. standard method; for households with children, therefore, this effect partly offsets the effect of the first methodological change.

To facilitate comparison with results from studies that use the standard U.S. methodology, Table 4.1 presents food security statistics calculated by applying the standard U.S. methodology (referred to as "U.S. Method") to the CCHS 2.2 data and the approach used in this report (referred to as "Health Canada Method"). Using the U.S. methodology, 7.3% of households would be classified as food insecure compared with 9.2% based on the methodology used in this report. The difference in the prevalence of severe food insecurity would be practically negligible—2.8% using the U.S. method compared with 2.9% using the Health Canada method. For households without children, the prevalence of food insecurity would be 6.7% using the U.S. method compared with 8.6 % using the Health Canada method; the prevalence of severe food insecurity would be identical (3.1%) since the methodology for this classification is unchanged.

Table 4.1 **Income-related household food security status by household type, Canada, 2004—prevalence estimates derived by two methods[1,2]**

	Food Secure		Food Insecure					
			All		Moderate[3]		Severe[4]	
	Health Canada Method[5]	U.S. Method[6]	Health Canada Method	U.S. Method	Health Canada Method	U.S. Method	Health Canada Method	U.S. Method
All households	90.8%	92.7%	9.2%	7.3%	6.3%	4.5%	2.9%	2.8%
Households with children	89.6%	91.5%	10.4%	8.5%	8.0%	6.3%	2.4%	2.2%
Households without children	91.4%	93.3%	8.6%	6.7%	5.5%	3.6%	3.1%	3.1%

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Footnotes:

1. Territories and First Nations reserves are not included.
2. Children are defined as individuals younger than 18 years of age.
3. The equivalent category label used in the United States traditionally was "food insecure without hunger" and now is "low food security".
4. The equivalent category label used in the United States traditionally was "food insecure with hunger" and now is "very low food security".
5. This is the approach used in this report.
6. Bickel, Nord, Price et al. (2000)

4.1.2 Unit of Analysis—Household and Person Weights

When comparing food security status across surveys, the unit of analysis used in each survey should be considered. Most of the findings in this report were derived using household survey weights and, therefore, reflect the prevalence of food security or insecurity among Canadian *households*. Data from other national health surveys, including the NPHS and earlier cycles of the CCHS, were calculated using person weights, allowing conclusions about the percentage of *Canadians living in food secure or insecure households*. While this report does include the estimated number of Canadians living in food insecure households in Section 3.4, comparing these estimates with findings from other surveys is not recommended for the reasons provided in the preceding sections.

Statistics Canada's estimates of the prevalence of food insecurity in Canada based on data from the CCHS 2.2 (Statistics Canada 2005) are lower than those presented in this report due to a few important differences in methodology. Statistics Canada used (i) the standard U.S. methodology for interpreting the food security data (Bickel, Nord, Price et al. 2000); (ii) person survey weights; and (iii) the CCHS 2.2 Master File[18] as the data source. This report used (i) a new methodology, described in Section 2.5, for interpreting the food security data; (ii) household weights (primarily); and (iii) the CCHS 2.2 Share File[19] as the data source. These differences—especially the use of different methodologies—will result in different estimates of food security status, even when estimates based on the application of person weights (see Section 3.4) are compared.

4.2 Limitations

With its large sample size—representative at the national and provincial levels—and the use of a standard multiple-indicator food security measurement tool, the CCHS 2.2 provides a unique opportunity to better understand income-related food insecurity in Canada. However, some limitations are worth noting.

As certain populations at high risk of income-related food insecurity were not included in the survey—for example, the homeless, Aboriginal people living on-reserve, those living in remote and isolated communities, and those not able to speak English or French—the prevalence of income-related household food insecurity in Canada in 2004 was likely higher than presented in this report.

[18] The Master File includes all data collected from every respondent. These data files are maintained by Statistics Canada; for confidentiality reasons, only Statistics Canada employees or deemed employees can access these files. It is possible for researchers to access the Master File through Research Data Centres (RDCs) at some Canadian universities. Information about the RDC program is available at: www.statcan.ca/english/rdc/index.htm.

[19] The Share File contains all variables for respondents who agreed to have their information shared with the survey Share Partners. In this case the Share Partners are the "Institut de la Statistique du Québec" for Quebec respondents, the provincial Ministries of Health and Health Canada. The Share File contains all of the variables available on the Master File but for about 95% of the respondents. The files are weighted so that the Master File and Share File produce comparable results.

The U.S. Food Security Survey Module, from which the HFSSM was adapted, is widely recognized as the best available instrument for assessing household-level food insecurity in the context of financial resource constraint (Tarasuk 2001a). The comprehensive program of methodological research associated with the module is recognized as a strength and a model on which to base future research to improve this valuable tool (National Research Council 2006). However, the module does have some limitations (National Research Council 2006; Tarasuk 2001a). Among the limitations is the fact that it does not capture the frequency or duration of food insecurity. Nor does it allow for an understanding of the experience of individuals within the household. An in-depth understanding of the chronicity of the experience of food insecurity within households is, therefore, difficult to obtain from the information provided by the module.

Much of the analyses presented in this report were undertaken at the household, not individual, level. Because some of the data used in the analysis of socio-demographic characteristics associated with food security status were collected at the individual level, assumptions about the household were necessary. For example, the survey asked the respondent whether they, themselves, were Aboriginal (North American Indian, Métis or Inuit). In the absence of information about the Aboriginal status of all members of the household, an affirmative response on behalf of the respondent was used to identify "Aboriginal households". It is recognized that other members of the household may not necessarily self-identify as being of Aboriginal cultural or racial background.

Notes

Notes

5. Conclusions

In 2004, a large majority of Canadian households—nine out of ten—were food secure. However, income-related food security was not achieved by all of the households represented in this survey. Just over 9%, or 1.1 million households, experienced either moderate or severe food insecurity.

The prevalence of household food insecurity was higher in certain sub-populations, including households with incomes in the lowest and lower middle income adequacy categories, households with social assistance as the main source of income, off-reserve Aboriginal households, households that did not own their dwelling, households with children—in particular, those headed by a female lone parent, and households with young children or three or more children.

5.1 Implications for Research and Monitoring

This report provides a descriptive overview of income-related household food security in Canada, highlighting population sub-groups for whom food insecurity is more prevalent. The CCHS 2.2 dataset presents unique opportunities for more in-depth analyses to better understand the factors associated with food security status, including at the provincial level. The full dataset provides food and nutrient consumption data, allowing for analyses that will provide a better understanding of nutrition issues in the context of food insecurity in Canada. Such analyses would identify population sub-groups whose nutritional health is potentially compromised because of resource constraints. The methodology for determining food security status introduced in this report facilitates investigation of factors associated with income-related food security of adults and children, not only the household as a whole. With the over-sampling of Canada's Aboriginal populations living off-reserve, the CCHS 2.2 dataset offers important opportunities to better understand the food security situation of this particularly vulnerable sub-population.

Monitoring food security indicators facilitates a stronger understanding of the dynamic relationship between household food security and social and economic conditions, policies and programs (Tarasuk 2001a). Such data, when available at regular intervals, are essential to policy and program evaluation and development; they also would help to stimulate and guide

research in this field. For the first time in Canada, the CCHS 2.2 provides national and provincial data from a multiple-indicator survey module on food security. Prior to this survey, the prevalence of food insecurity in Canada was often determined based on shorter survey modules, usually three questions in length and of limited scope. This has made it difficult to monitor changes in food security in Canada due to differences in questions and/or methodology used in the various surveys. As the food security module included in CCHS 2.2 will be repeated in subsequent cycles of the CCHS, there will be opportunities to study the same dimensions of food security over time.

5.2 Implications for Public Policy

The findings presented in this report, the first in Canada to be based on a multiple-indicator survey tool, confirm what other studies have reported—food insecurity is a reality for many socio-economically vulnerable Canadian households. Households considered to be food insecure are not homogenous—the specific factors associated with their vulnerability may vary and, therefore, so will the required actions to prevent food insecurity at the household level. However, from a population health perspective, it is clear that tackling income-related food insecurity in a sustainable way will require addressing factors associated with income. Macro-level approaches, such as national, provincial or local level policies and programs aimed at improving access to adequate and affordable housing, education, secure employment and financial support when required, have the potential to profoundly influence the key determinants of income-related food security and to alleviate the burden on those Canadians who are most vulnerable. Collaboration between various government portfolios at all levels and other sectors responsible for health, social and economic policy development will be required for sustainable solutions that address the complexity of issues that determine income-related food security.

In developing policies—both those directly related to food security and those with potential indirect effects on food security—it is important to be informed by the impact of past policy decisions on the determinants of food security. For example, the effect of changes to social programs during the 1990s on Canadians' economic security is discussed in a position paper issued by the Dietitians of Canada (Power 2005). The food security data garnered from the CCHS 2.2, and summarized in this report, provide important information to help guide appropriate policy responses.

Notes

Notes

6. References

Agriculture and Agri-Food Canada. *Canada's Action Plan for Food Security: A Response to the World Food Summit*. Ottawa: Agriculture and Agri-Food Canada, 1998. Available at: www.agr.gc.ca/misb/fsec-seca/pdf/action_e.pdf (accessed May 15, 2006).

Badun C, Evers S, Hooper M. Food security and nutritional concerns of parents in an economically disadvantaged community. *J Can Diet Assoc* 1995;56:75–80.

Bickel G, Nord M, Price C et al. *Guide to Measuring Household Food Security, Revised 2000*. Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 2000. Available at: www.fns.usda.gov/fsec/files/fsguide.pdf (accessed May 2, 2006).

Broughton MA, Janssen PS, Hertzman C et al. Predictors and outcomes of household food insecurity among inner city families with preschool children in Vancouver. *Can J Public Health* 2006;97:214–216.

Campbell CC, Desjardins E. A model and research approach for studying the management of limited food resources by low-income families. *J Nutr Ed* 1989;21:162–171.

Canadian Association of Food Banks. *Time for Action: HungerCount 2005*. Ottawa: Canadian Association of Food Banks, 2005. Available at: www.cafb-acba.ca/documents/HC05eng.pdf (accessed September 15, 2006).

Cancer Care Ontario. *Insight on Cancer: News and Information on Nutrition and Cancer Prevention, Volume 2 – Supplement 2: Ontario's Food Security and Cancer Prevention*. Toronto: Canadian Cancer Society (Ontario Division), 2005.

Che J, Chen J. Food insecurity in Canadian households. *Health Reports* 2001;12:11–22.

Connell CL, Nord M, Lofton KL, Yadrick K. Food security of older children can be assessed using a standardized survey instrument. *J Nutr* 2004;134:2566–2572.

Federal, Provincial and Territorial Advisory Committee on Population Health. *Strategies for Population Health—Investing in the Health of Canadians*. Ottawa: Minister of Supply and Services Canada, 1994.

Food and Agriculture Organization. Rome Declaration on World Food Security and World Food Summit Plan of Action, Rome, Italy: FAO, 1996. Available at: www.fao.org/docrep/003/w3613e/w3613e00.htm (accessed September 15, 2006).

Hamelin AM, Beaudry M, Habicht JP. La vulnérabilité des ménages à l'insécurité alimentaire. *Rev can études dév* 1998;19:277–306.

Hamilton WL, Cook JT, Thompson WW et al. *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project*. Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 1997a. Available at: www.fns.usda.gov/oane/menu/published/foodsecurity/sumrpt.pdf (accessed May 2, 2006).

Hamilton WL, Cook JT, Thompson WW et al. *Household Food Security in the United States in 1995: Technical Report of the Food Security Measurement Project*. Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 1997b. Available at: www.fns.usda.gov/oane/menu/published/foodsecurity/tech_rpt.pdf (accessed May 2, 2006).

Lawn J, Harvey D. *Nutrition and Food Security in Kugaaruk, Nunavut: Baseline Survey for the Food Mail Pilot Project*. Ottawa: Indian and Northern Affairs Canada, 2003.

Lawn J, Harvey D. *Nutrition and Food Security in Fort Severn, Ontario: Baseline Survey for the Food Mail Pilot Project*. Ottawa: Indian and Northern Affairs Canada, 2004a.

Lawn J, Harvey D. *Nutrition and Food Security in Kangiqsujuaq, Nunavik: Baseline Survey for the Food Mail Pilot Project*. Ottawa: Indian and Northern Affairs Canada, 2004b.

Ledrou I, Gervais J. Food insecurity. *Health Reports* 2005;16:47–51.

McIntyre L. Food Insecurity. In: Raphael D, ed. *Social Determinants of Health: Canadian Perspectives*. Toronto: Canadian Scholars Press Inc., 2004:173–185.

McIntyre L, Connor SK, Warren J. *A Glimpse of Child Hunger in Canada*, Working Paper W-98-26. Ottawa: Human Resources Development Canada, 1998. Available at: www.hrsdc.gc.ca/en/cs/sp/sdc/pkrf/publications/research/1998-000125/w-98-26e.pdf (accessed August 15, 2006).

McIntyre L, Connor SK, Warren J. Child hunger in Canada: Results of the 1994 National Longitudinal Survey of Children and Youth. *Can Med Assoc J* 2000;163:961–965.

McIntyre L, Glanville NT, Raine KD et al. Do low-income lone mothers compromise their nutrition to feed their children? *Can Med Assoc J* 2003;168:686–691.

McIntyre L, Walsh G, Connor SK. *A Follow-up Study of Child Hunger in Canada*, Working Paper W-01-1-2E. Ottawa: Human Resources Development Canada, 2001. Available at: www.hrsdc.gc.ca/en/cs/sp/sdc/pkrf/publications/research/2001-000172/SP-443-06-01E.pdf (accessed August 15, 2006).

Melgar-Quinonez H, Zubieta A, MkNelly B et al. Household food insecurity and food expenditure in Bolivia, Burkina Faso and the Philippines. *J Nutr* 2006;136:1431S–1437S.

National Council of Welfare. *National Council of Welfare: Welfare Incomes 2005*. Ottawa: Minister of Public Works and Government Services Canada, 2006. Available at: www.ncwcnbes.net/htmdocument/reportWelfareIncomes2005/WI2005ENG.pdf (accessed September 22, 2006).

National Research Council. *Food Security and Hunger in the United States: An Assessment of the Measure*. Panel to Review U.S. Department of Agriculture's Measurement of Food Insecurity and Hunger. Wunderlich GS, Norwood JL, eds. Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press, 2006.

Nord M, Andrews M, Carlson S. *Household Food Security in the United States, 2005*. Economic Research Report No. 29, Washington, DC: Economic Research Service, United States Department of Agriculture, 2006. Available at: www.ers.usda.gov/publications/err29 (accessed November 16, 2006).

Nord M, Bickel G. *Measuring Children's Food Security in U.S. Households, 1995–99*. Food Assistance and Nutrition Research Report No. 25, Washington, DC: Economic Research Service, United States Department of Agriculture, 2002. Available at: www.ers.usda.gov/publications/fanrr25 (accessed September 22, 2006).

Power EM. Individual and household food insecurity in Canada: Position of the Dietitians of Canada. *Can J Diet Pract Research* 2005;66:43–46. Available at: www.dietitians.ca/news/downloads/Food_Insecurity_position.pdf (accessed September 5, 2006).

Rainville B, Brink S. *Food Insecurity in Canada, 1998–1999*, Research Paper R-01-2E. Ottawa: Human Resources Development Canada, 2001. Available at: www.hrsdc.gc.ca/en/cs/sp/sdc/pkrf/publications/research/2001-000066/R-01-2E.pdf (accessed September 5, 2006).

Rideout K, Seed B, Ostry A. Putting food on the public health table. *Can J Public Health* 2006; 97:233–236.

Rose D, Oliveira V. *Validation of a Self-Reported Measure of Household Food Insufficiency with Nutrient Intake Data*. Technical Bulletin No. 1863, Washington, DC: Economic Research Service, United States Department of Agriculture, 1997a.

Rose D, Oliveira V. Nutrient intakes of individuals from food-insufficient households in the United States. *Am J Public Health* 1997b;87:1956–1961.

Statistics Canada. *Census 2001 Analysis Series—Aboriginal Peoples of Canada: A Demographic Profile*. Cat. No: 96F0030XIE2001007. Ottawa: Statistics Canada, 2003. Available at: www12.statcan.ca/english/census01/products/analytic/companion/abor/canada.cfm (accessed September 22, 2006).

Statistics Canada. *Level of Household Food Insecurity, by Sex, Household Population, Canada and Provinces*, CANSIM Table 105-2004. Cat. No. 82-620, Vol. 0 No. 0. Ottawa: Statistics Canada, 2005. Available at: www.statcan.ca/english/research/82-620-MIE/2005001/tables/t007_en.pdf (accessed September 15, 2006).

Stuff JE, Casey PH, Szeto KL et al. Household food insecurity is associated with adult health status. *J Nutr* 2004;134:2330–2335.

Tarasuk V. *Discussion Paper on Household and Individual Food Insecurity*. A report prepared for the Office of Nutrition Policy and Promotion, Health Canada. Ottawa: Health Canada, 2001a. Available at: www.hc-sc.gc.ca/fn-an/nutrition/pol/food_sec_entire-sec_aliments_entier_e.html (accessed September 15, 2006).

Tarasuk V. Household food insecurity with hunger is associated with women's food intakes, health and household circumstances. *J Nutr* 2001b;131:2670–2676.

Tarasuk V. Health implications of food insecurity. In: Raphael D, ed. *Social Determinants of Health: Canadian Perspectives*. Toronto: Canadian Scholars Press Inc., 2004:187–200.

Tarasuk V, Beaton GH. Women's dietary intakes in the context of household food insecurity. *J Nutr* 1999;129:672–679.

Vozoris N, Tarasuk V. Household food insufficiency is associated with poorer health. *J Nutr* 2003;133:120–126.

Whitaker RC, Orzol SM. Obesity among U.S. urban preschool children: relationships to race, ethnicity, and socioeconomic status. *Arch Pediatr Adolesc Med* 2006;160:578–584.

Wilkinson R, Marmot M, eds. *The Social Determinants of Health: The Solid Facts*. 2nd ed. Copenhagen: World Health Organization, 2003.

Notes

Appendix A: CCHS Household Food Security Survey Module

The following questions are about the food situation for your household in the past 12 months.

Q1.[20] Which of the following statements best describes the food eaten in your household in the past 12 months, that is since [current month] of last year?

1. You and other household members always had enough of the kinds of food you wanted to eat.
2. You and other household members had enough to eat, but not always the kinds of food you wanted.
3. Sometimes you and other household members did not have enough to eat.
4. Often you and other household members didn't have enough to eat.

– Don't know / refuse to answer **(Go to end of module)**

STAGE 1: Questions 2–6 — ask all households

Now I'm going to read you several statements that may be used to describe the food situation for a household. Please tell me if the statement was often true, sometimes true, or never true for you and other household members in the past 12 months.

Q2. The first statement is: you and other household members worried that food would run out before you got money to buy more. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

– Don't know / refuse to answer

Q3. The food that you and other household members bought just didn't last, and there wasn't any money to get more. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

– Don't know / refuse to answer

[20] Question Q1 is not used directly in determining household food security status.

Q4. You and other household members couldn't afford to eat balanced meals. In the past 12 months was that often true, sometimes true, or never true?

1. Often true
2. Sometimes true
3. Never true

– Don't know / refuse to answer

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q5 AND Q6;
OTHERWISE, SKIP TO FIRST-LEVEL SCREEN

Now I'm going to read a few statements that may describe the food situation for households with children.

Q5. You or other adults in your household relied on only a few kinds of low-cost food to feed the children because you were running out of money to buy food. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

– Don't know / refuse to answer

Q6. You or other adults in your household couldn't feed the children a balanced meal, because you couldn't afford it. Was that often true, sometimes true, or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

– Don't know / refuse to answer

FIRST-LEVEL SCREEN (screener for Stage 2):
If AFFIRMATIVE RESPONSE to ANY ONE of Q2–Q6 (i.e. "often true" or "sometimes true")
OR response [3] or [4] to Q1, then continue to STAGE 2; otherwise, skip to end.

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q7; OTHERWISE SKIP TO Q8

Q7. The children were not eating enough because you or other adults in your household just couldn't afford enough food. Was that often, sometimes or never true in the past 12 months?

1. Often true
2. Sometimes true
3. Never true

– Don't know / refuse to answer

The following few questions are about the food situation in the past 12 months for you or any other adults in your household.

Q8. In the past 12 months, since last [current month] did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?

1. Yes
2. No (Go to Q9)

– Don't know / refuse to answer

Q8b. How often did this happen?

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months

– Don't know / refuse to answer

Q9. In the past 12 months, did you (personally) ever eat less than you felt you should because there wasn't enough money to buy food?

1. Yes
2. No

– Don't know / refuse to answer

Q10. In the past 12 months, were you (personally) ever hungry but didn't eat because you couldn't afford enough food?

1. Yes
2. No
– Don't know / refuse to answer

Q11. In the past 12 months, did you (personally) lose weight because you didn't have enough money for food?

1. Yes
2. No
– Don't know / refuse to answer

SECOND-LEVEL SCREEN (screener for Stage 3):
If AFFIRMATIVE RESPONSE to ANY ONE of Q7–Q11, then continue to STAGE 3; otherwise, skip to end.

STAGE 3: Questions 12–16 — ask households passing the Second-Level Screen

Q12. In the past 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?

1. Yes
2. No **(IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q13; OTHERWISE SKIP TO END)**
– Don't know / refuse to answer

Q12b. How often did this happen?

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months
– Don't know / refuse to answer

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q13–16;
OTHERWISE SKIP TO END

Now, a few questions on the food experiences for children in your household.

Q13. In the past 12 months, did you or other adults in your household ever cut the size of any of the children's meals because there wasn't enough money for food?

1. Yes
2. No

– Don't know / refuse to answer

Q14. In the past 12 months, did any of the children ever skip meals because there wasn't enough money for food?

1. Yes
2. No

– Don't know / refuse to answer

Q14b. How often did this happen?

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months

– Don't know / refuse to answer

Q15. In the past 12 months, were any of the children ever hungry but you just couldn't afford more food?

1. Yes
2. No

– Don't know / refuse to answer

Q16. In the past 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?

1. Yes
2. No

– Don't know / refuse to answer

End of module

Notes

Appendix B: Measurement of Food Security in the CCHS

The measures of food security in the CCHS 2.2 are based on self-reported behaviours, experiences, and conditions collected by interviewing one member of each household using a standardized survey instrument—the CCHS Household Food Security Survey Module (HFSSM). The food security status of adults in each household was assessed by responses to 10 questions about food-related behaviours, experiences, and conditions that are known to characterize households having difficulty meeting their food needs. In households with children present, the food security status of the children was assessed by an additional 8 questions.

The questions cover a wide range of severity of food insecurity, ranging from worrying about running out of food to children not eating for a whole day. Each question specifies a lack of money or other resources to obtain food as the reason for the condition or behaviour, so the measures are not affected by hunger due to voluntary dieting or fasting. All questions are referenced to the previous 12 months; thus, the measures reflect the most severely food insecure condition the household faced during the year prior to the survey.

Responses to the 10 adult questions and the 8 child questions are combined into two separate scales (Adult Food Security Scale and Child Food Security Scale, respectively) using non-linear statistical methods based on the Rasch measurement model. The scales provide continuous, graduated measures of the severity of food insecurity across the range of severity encountered in Canadian households. Based on the number of indications of food insecurity reported on each scale, households are classified into three categories for monitoring and analysis of food access in the population and in sub-populations—"food secure," "food insecure, moderate" and "food insecure, severe".

A multiple-indicator measure has several advantages over assessment based on only one question or a few questions:

- It provides more reliable measurement because responses based on misunderstanding or inconsistent understanding of a question may be offset or moderated by responses to the other questions.
- It can provide graduated measurement across a wide range of the underlying phenomenon.

- It offers the capacity to assess whether, and how well, each question contributes to measurement of the underlying phenomenon. The statistical relationships among the responses to the various questions provide inferential evidence about the relationship of each item to the underlying phenomenon. Analyses of these relationships can determine whether the measure functions similarly in different sub-populations and linguistic groups and whether it retains the same characteristics over time.

This appendix provides an assessment of the multiple-indicator adult and child food security measures based on data collected in the CCHS 2.2. First, the development of the questions in the CCHS HFSSM is described. Then the Rasch measurement model is described briefly along with the related statistical methods that were used to assess the performance of the food security questions and measures. Finally these tools are applied to the CCHS 2.2 food security data, and the results of the assessment are described.

B.1 Questions Used to Assess Food Security

The questions in the CCHS HFSSM and the methods used to combine responses into measures of adult and child food security were adapted from food security measurement methods developed in the United States (Bickel, Nord, Price et al. 2000; Hamilton, Cook, Thompson et al. 1997a, 1997b; Nord and Bickel 2002). These measurement methods have been used to monitor food security in the U.S. annually since 1995[21] as well as for a wide range of research on contributors to and consequences of food insecurity, both in the U.S. and in Canada.

The measures function well in the U.S. because the behaviours and experiences represented by questions in the module correspond closely to the most prevalent experiences and responses of the U.S. population in coping with inadequate resources for food. This result was achieved by basing the questions upon a substantial body of research among low-income U.S. families regarding their experiences of food deprivation and how they described and coped with them (Radimer, Olson, and Campbell 1990; Radimer, Olson, Greene et al. 1992; Wehler, Scott, and Anderson 1992). The questions reflect familiar conditions, experiences, and behaviours, and use natural language derived from the qualitative research to describe them.

[21] See Nord, Andrews, and Carlson (2006) for the most recent report in this series.

With minor adaptations to the Canadian context, these questions functioned similarly well in both English and French speaking households and among Aboriginal respondents in the CCHS 2.2, as described in this appendix.

B.2 Assessment of the CCHS Food Security Data

B.2.1 Basic Concepts: Item Severity and Household Severity

An essential characteristic of the food security scales is that the items comprising them vary across a wide range of severity. The precise severity level of each item (the "item calibration", or "item score" or "item severity score") is estimated empirically from the overall pattern of response to the scale items by the interviewed households. However, the range of severity of the conditions identified by the items is also intuitively evident from inspection of the items. For example, not eating for a whole day is a more severe manifestation of food insecurity than is cutting the size of meals or skipping meals, which in turn indicates a more severe level of food insecurity than does worrying whether food would run out.

These differences in severity are observed in the response patterns of surveyed households. The more severe items are affirmed by fewer households than are the less severe items. Moreover, a household that affirms an item of mid-range severity is likely to have also affirmed all items that are less severe. Similarly, a household that denies an item at mid-range is likely to deny all items that are more severe. These typical response patterns are not universal, but they are predominant, and among households that do deviate from the typical patterns, the extent of deviation tends to be slight.

The Rasch measurement model formalizes this concept of the severity-ordering of items and provides standard statistical methods to estimate the severity of each item (relative to the other items) and to assess the extent to which the response patterns observed in a data set are consistent with the severity-order concept.[22] Statistics based on the

[22] Detailed information on the Rasch model is available in Baker (1992); Fischer and Molenaar (1995); Hambleton, Swaminathan, and Rogers (1991); and Wright (1977, 1983), and from the website of the MESA psychometric laboratory at the University of Chicago at www.rasch.org. Information about applications of Rasch methods to the development and assessment of food security scales is available in Bickel, Nord, Price et al. (2000); Hamilton, Cook, Thompson et al. (1997a, 1997b); Nord (2002, 2003); and Nord and Bickel (2002).

model also locate each household along a continuum—from fully food secure to severely food insecure—based on the number of food-insecure conditions they report.

An important characteristic of the Rasch model is that a household's raw score (the number of indications of food insecurity reported by the household) is an ordinal indicator of the severity of the household's food insecurity. Households with higher raw scores have experienced more severe levels of food insecurity, and all households with the same raw score have experienced the same level of severity of food insecurity, regardless of which specific conditions they have reported. This characteristic makes the measure simple to apply in practice and relatively simple to interpret.

B.2.2 Comparing the Performance of a Measure in Different Languages and Cultural Contexts

Comparison of the prevalence of food insecurity among different language groups or cultural contexts relies on the food security measures performing similarly in the two groups. To assess whether the measure performs similarly in two groups, the items are fit to the Rasch model in separate analyses in the two groups. The relative severity of the items scores are then compared between the two groups, and item-infit statistics are assessed for each group. Provided that the relative severities of items are similar, comparing the standard deviation of item scores in the two groups compares the average item discrimination, or goodness of fit to the Rasch model, between the groups.

B.3 Assessment of the CCHS Food Security Data

B.3.1 Adult Food Security Scale

Item-infit statistics[23] indicate that the adult food security items all measured the same underlying condition (food insecurity) in English and French interviews and among households that self-identified as coming from Aboriginal cultural or racial background (North American Indian, Métis or Inuit; see Table B.1). These statistics measure item-misfit compared with the average item in the scale. The expected value is 1, and values above the number 1 indicate weaker than average association of the items with the underlying condition. Values between 0.8 and 1.2 are generally considered to meet the Rasch assumption of equal discrimination of all items. Items with values between 0.7 and 1.3 may still be acceptable for use as a measure in the applied setting, but values higher than 1.2 indicate questions that are not consistently understood and should be improved or omitted. Items with values lower than 0.8 are more closely associated with the underlying condition and are undervalued in an equal-weighted scale. A two-parameter model may be justified to weight such an item more heavily.

The only item with infit higher than 1.2 was "You and other household members couldn't afford to eat balanced meals." This question is either less consistently understood than other questions or is less consistently related to the underlying condition of food insecurity. This appears to be especially true among households interviewed in French. Further development work on this question may be indicated. This question also had a high infit in the 2004 food security survey in the United States.

The low item-infit of "You (personally) ever ate less than you felt you should" indicates that this item is more closely related than other items to the underlying condition measured by the set of items. This was especially true among households interviewed in French and among Aboriginal households. It is not problematic to include this item in the scale, but it is somewhat undervalued in the equal-weight measure based on the Rasch model.

[23] The Rasch model provides the basis for "fit" statistics that assess how well each item, each household, and the overall data conform to the assumptions of the measurement model. Item-infit statistics are commonly used to assess whether all items in a proposed scale measure the same underlying condition, and whether they do so with equal discrimination, consistent with the Rasch model assumption. After item calibrations and household scores have been estimated, the probability of an affirmative response in each cell of the household-by-item matrix is calculated. The infit statistics are then calculated by comparing the actual responses to the responses expected through probability in each cell of the matrix.

Table B.1 Item-infit statistics, CCHS 2004 Adult Food Security Scale, English language, French language, and Aboriginal, and comparison to U.S. CPS–Food Security Supplement 2004[1]

Item[2]	CCHS English	CCHS French	CCHS Aboriginal	U.S. CPS-FSS
You and other household members worried food would run out before you got money to buy more	1.02	0.98	0.95	1.02
Food you and other household members bought did not last and there wasn't any money to get more	0.99	1.06	1.08	0.89
You and other household members couldn't afford to eat balanced meals	1.22	1.25	1.16	1.28
You or other adults in your household ever cut size of meals or skipped meals	0.83	0.85	0.87	0.84
You or other adults in your household ever cut size of meals or skipped meals in 3 or more months	0.90	0.94	1.01	0.90
You (personally) ever ate less than you felt you should	0.79	0.71	0.75	0.80
You (personally) were ever hungry but did not eat	0.86	1.05	0.77	0.95
You (personally) lost weight	0.98	0.97	0.89	0.94
You or other adults in your household ever did not eat for whole day	0.99	0.94	0.98	0.98
You or other adults in your household ever did not eat for whole day in 3 or more months	0.95	0.86	0.99	0.98
Number of cases[3]	**3,835**	**578**	**547**	**8,636**

CCHS Canadian Community Health Survey
CPS Current Population Survey (U.S.)
CPS-FSS Current Population Survey, Food Security Supplement (U.S.)

Footnotes:

1. English and French sub-samples are based on language of interview. The Aboriginal sub-sample was based on self-identification as coming from Aboriginal cultural or racial background (North American Indian, Métis or Inuit). Aboriginal people are also included in English or French sub-samples if interviewed in those languages, but constitute a small minority of cases within those sub-samples. Item-infit statistics are based on two separate analyses, one omitting the two "3 or more months" items, the second including those items and omitting the corresponding "ever during the year" items. This procedure provides unbiased estimates for the mutually dependent items. Conditional maximum likelihood (CML) methods were used to estimate model parameters.
2. The wording of each question as read to the respondent includes explicit reference to resource limitation (e.g. "…because there wasn't enough money for food").
3. The number of cases in the scaling analyses is considerably smaller than the total number of households interviewed. Households that reported no food-insecure conditions are omitted from the scaling analyses; however, they are included in prevalence calculations, with adults' food security status "food secure". Similarly, households that reported all 10 food-insecure conditions are omitted from the scaling analyses, but included in prevalence calculations with adults' food security status "severely food insecure".

The Adult Food Security Scale measured essentially the same condition in the three Canadian sub-populations assessed here, as well as in the United States general population (see Table B.2). Figure B.1 compares the item severity scores from Table B.2 between households interviewed in French and English in the CCHS 2.2. The order of severity of items was the same in both sub-populations, and relative item severities were similar, although not identical. Two items differed by statistically significant amounts between the two sub-populations. "Food you and other household members bought didn't last, and there wasn't any money to get more" was more severe (i.e. less likely to be reported, given responses to other items) for households interviewed in French than for those interviewed in English. The opposite was true for "You (personally) ever ate less than you felt you should." The differences were not so large as to be substantively important, but will result in a somewhat different mix of reported conditions in the two sub-populations in households with the same raw score. These modest differences in item scores may represent differences in the objective conditions described by the English and French translations of the questions.

Table B.2 Item severity scores, CCHS 2004 Adult Food Security Scale, English language, French language, and Aboriginal, and comparison to U.S. CPS–Food Security Supplement 2004[1]

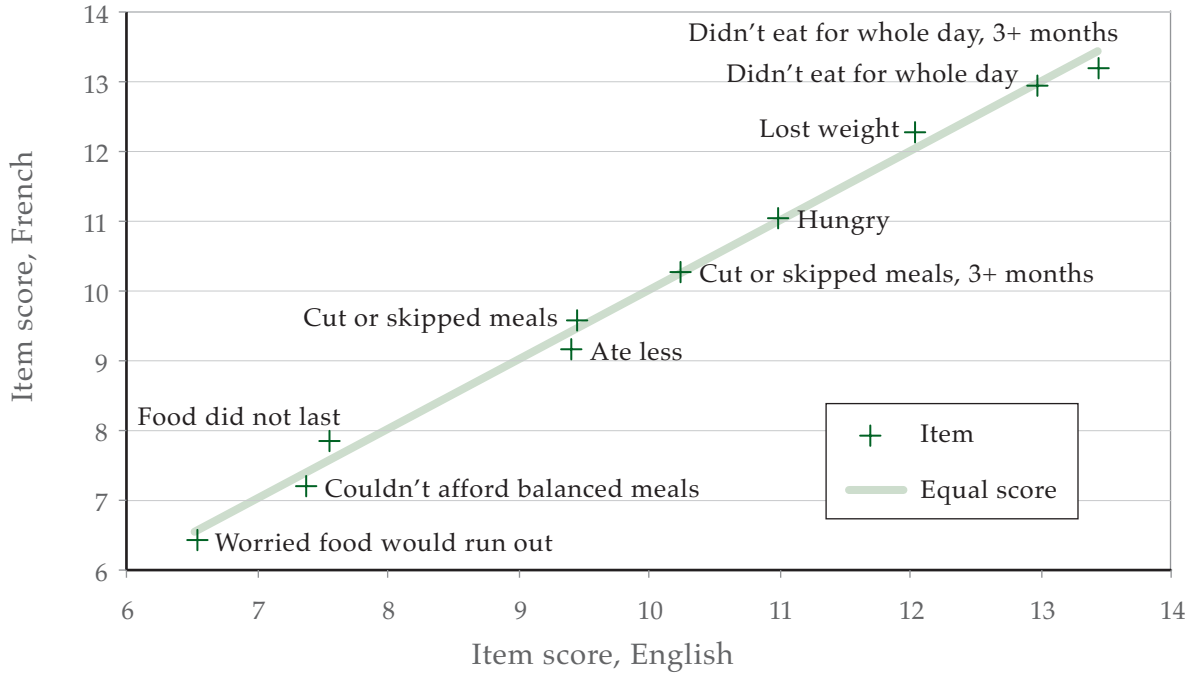
Item[2]	CCHS English	CCHS French	CCHS Aboriginal	U.S. CPS-FSS
You and other household members worried food would run out before you got money to buy more	6.53	6.43	6.12	6.39
Food you and other household members bought did not last and there wasn't any money to get more	7.54	7.84	7.38	7.38
You and other household members couldn't afford to eat balanced meals	7.37	7.19	7.54	7.73
You or other adults in your household ever cut size of meals or skipped meals	9.46	9.58	9.62	9.29
You or other adults in your household ever cut size of meals or skipped meals in 3 or more months	10.25	10.28	10.70	10.19
You (personally) ever ate less than you felt you should	9.41	9.16	9.62	9.46
You (personally) were ever hungry but did not eat	11.00	11.07	11.05	11.19
You (personally) lost weight	12.03	12.30	12.12	12.06
You or other adults in your household ever did not eat for whole day	12.96	12.95	12.62	12.88
You or other adults in your household ever did not eat for whole day in 3 or more months	13.45	13.20	13.24	13.44
Mean	**10.00**	**10.00**	**10.00**	**10.00**
Standard deviation	**2.393**	**2.395**	**2.395**	**2.395**
Discrimination parameter	**1.00**	**1.00**	**1.00**	**1.00**
Number of cases[3]	**3,835**	**578**	**547**	**8,636**

CCHS Canadian Community Health Survey
CPS Current Population Survey (U.S.)
CPS-FSS Current Population Survey, Food Security Supplement (U.S.)

Footnotes:

1. English and French sub-samples are based on language of interview. The Aboriginal sub-sample was based on self-identification as coming from Aboriginal cultural or racial background (North American Indian, Métis or Inuit). Aboriginal people are also included in English or French sub-samples if interviewed in those languages, but constitute a small minority of cases within those sub-samples. Item severity scores are based on two separate analyses, one omitting the two "3 or more months" items, the second including those items and omitting the corresponding "ever during the year" items. This procedure provides unbiased estimates for the mutually dependent items. Conditional maximum likelihood (CML) methods were used to estimate model parameters.
2. The wording of each question as read to the respondent includes explicit reference to resource limitation (e.g. "…because there wasn't enough money for food").
3. The number of cases in the scaling analyses is considerably smaller than the total number of households interviewed. Households that reported no food-insecure conditions are omitted from the scaling analyses; however, they are included in prevalence calculations, with adults' food security status "food secure". Similarly, households that reported all 10 food-insecure conditions are omitted from the scaling analyses, but included in prevalence calculations with adults' food security status "severely food insecure".

Figure B.1 **Comparison of item scores on Adult Food Security Scale, French versus English interviews, CCHS 2004**



CCHS Canadian Community Health Survey

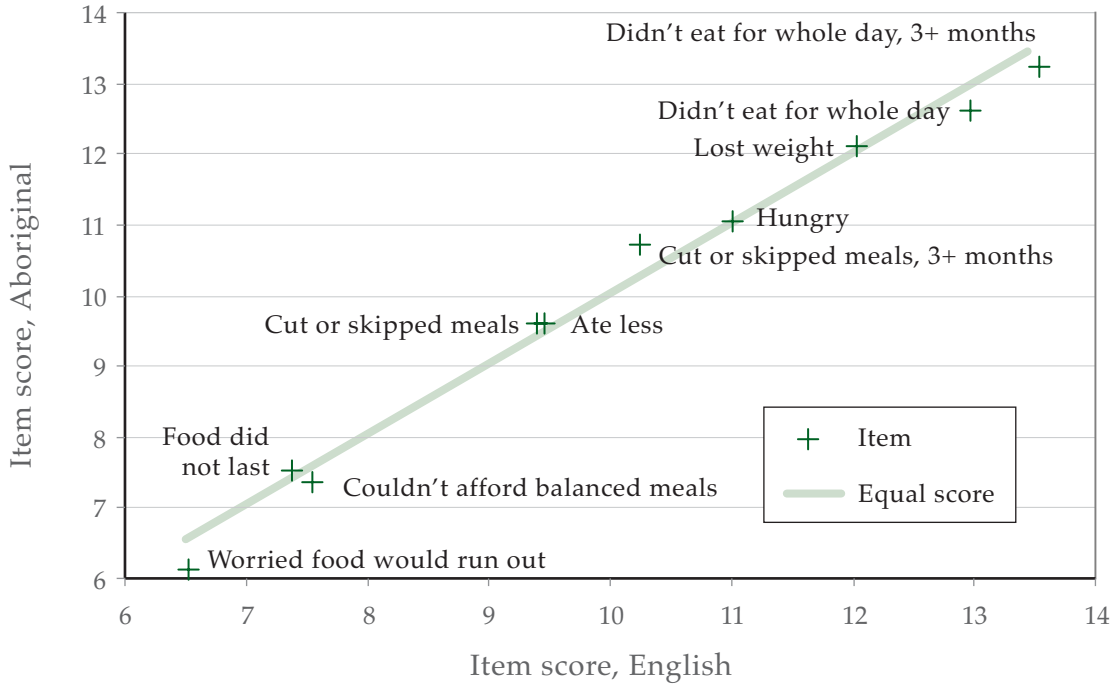
Figure B.2 compares item severity scores from Table B.2 between Aboriginal households and all households interviewed in English in the CCHS 2.2.[24] The order of severity of items was the same in both sub-populations except for the reversal of "Food you and other household members bought didn't last" and "You and other household members couldn't afford to eat balanced meals", which had nearly equal scores in both groups. Relative item severities were similar, although not identical. Two items differed by statistically significant amounts between the two sub-populations. "You and other household members worried food would run out" was less severe (i.e. more likely to be reported, given responses to other items) for Aboriginal households than for other households interviewed in English. The opposite was true for "You or other adults in your household ever cut the size of your meals or skipped meals [in 3 or more months]". The differences were not so large as to be substantively important, but will result in a somewhat different mix of reported conditions in the two sub-populations in households with the same raw score. The higher severity of "You or other adults in your household ever cut the size of your meals or skipped meals [in 3 or more months]" will bias the prevalence of severe food insecurity downward slightly for Aboriginal households compared with non-Aboriginals because the severity of the item is near that of the threshold for severe food insecurity.

The similar relative severity of items in these three sub-populations means that prevalence statistics can be meaningfully compared among these groups. Any bias due to different understanding of items or differences in how households experience and describe food insecurity in these three groups will be small or negligible.

Average item discrimination was nearly identical in the three sub-populations analysed. Item scores presented in Table B.2 for all three groups were estimated on the logistic metric (i.e. with discrimination parameter equal to 1.0). No adjustment was made for differences in discrimination since those differences, as measured by the standard deviations of item scores, were negligible. This indicates that the consistency of response patterns with the severity ordering of the items was essentially the same in the three sub-populations.

[24] Many of the Aboriginal households were interviewed in English and thus were also included in the analysis of households interviewed in English, but constitute a small minority of cases within that sub-sample.

Figure B.2 **Comparison of item scores on Adult Food Security Scale, Aboriginal versus all households interviewed in English, CCHS 2004**[1]



CCHS Canadian Community Health Survey

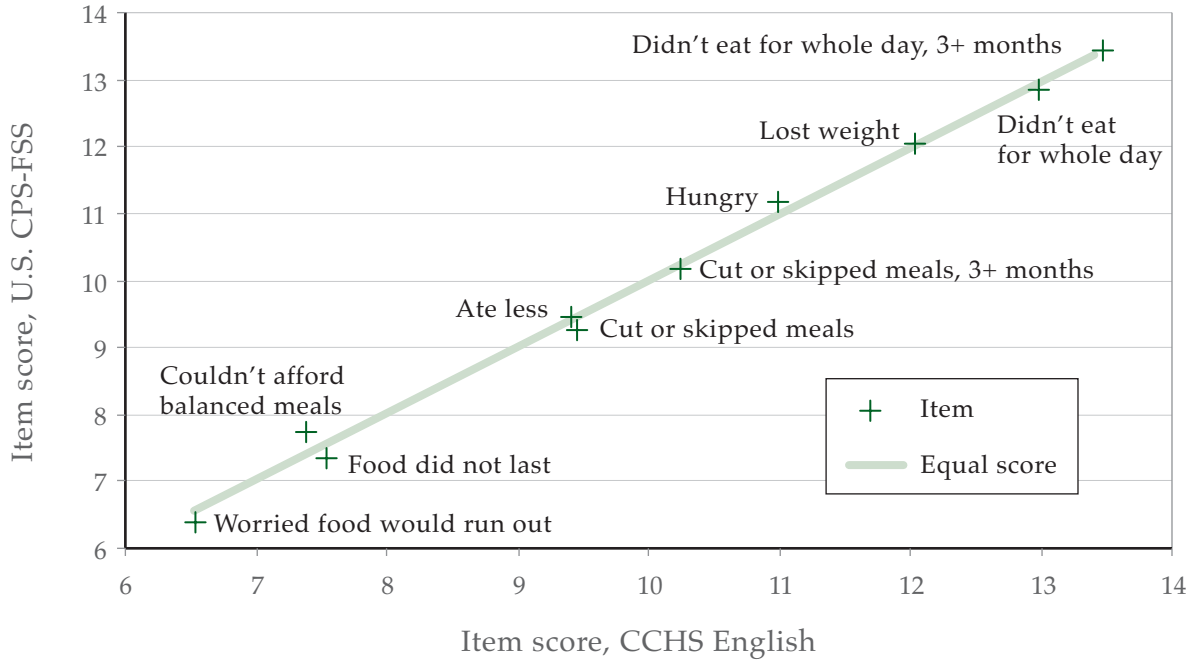
Footnote:

1. Many of the Aboriginal households were interviewed in English and thus were also included in the analysis of households interviewed in English, but constitute a small minority of cases within that sub-sample.

Item scores from the national food security survey in the United States, the Current Population Survey Food Security Supplement (CPS-FSS), were also compared with those for the CCHS 2.2 sub-sample interviewed in English (see Table B.2 and Figure B.3). The function of the CCHS Adult Food Security Scale as a measure of food insecurity in Canada does not depend on the relative severity of items being the same in Canada and the U.S. It is, nevertheless, of interest to know to what extent the phenomenon of food insecurity is the same and the prevalence statistics are comparable in the two countries.

Food insecurity is experienced and described very similarly in the U.S. and Canada. The order of item severity scores was the same in the two countries, with the exception of reversals between two sets of items that were of nearly equal severity in the two countries. Although several of the differences in item severity scores were statistically significant (the numbers of interviewed households were large in both countries, yielding small errors for estimated scores), only one difference is of substantive importance. The higher severity of "You and other household members couldn't afford to eat balanced meals" in the U.S. will bias the prevalence of food insecurity downward slightly in the U.S. relative to Canada if measures are based on the same raw-score threshold.

Figure B.3 **Comparison of item scores on Adult Food Security Scale, U.S. CPS–Food Security Supplement 2004 versus CCHS 2004 English-interviewed households**



CCHS Canadian Community Health Survey
CPS Current Population Survey (U.S.)
CPS-FSS Current Population Survey, Food Security Supplement (U.S.)

The raw score on the Adult Food Security Scale—the number of food-insecure conditions reported by a household—is an ordinal indicator of the severity of food insecurity among adults, but intervals between successive raw scores are not equal. Maximum likelihood scale scores corresponding to each raw score represent an interval-level measure of the severity of food insecurity and are appropriate for use in linear models such as correlation and regression models. Item scores estimated from the combined sample of households interviewed in English and French are presented in Table B.3. Adult Food Security Scale scores for CCHS 2.2 households, which are based on the scores in Table B.3, are presented in Table B.4. The metric of these scales is logistic (discrimination coefficient of 1.0), with mean item score set to 10.[25]

The utility of these scale scores for statistical modelling purposes is limited to some extent by the lack of a known score for households with a raw score of zero. Adults in these households are more food secure than those in households with a raw score of one, but the size of the difference cannot be estimated with confidence. If households with a raw score of zero are included in linear analyses, appropriate techniques must be used to take account of the uncertainty regarding their true level of food security. The true severity of food insecurity of households with raw score 10 also is not known. Table B.4 follows the convention of estimating the score for these households as if they had a raw score of 9.5. Using the tabled score for these households will introduce little or no distortion in linear analyses provided, as households with food insecurity in this extremely severe range usually comprise a very small proportion of the analysis sample.

[25] The zero point of a Rasch-based scale is arbitrary. The value of 10 assures that all item scores and household scores will be positive.

Table B.3 Item severity scores, CCHS 2004 Adult Food Security Scale[1]

Item[2]	Item Severity Score	Estimation Standard Error
You and other household members worried food would run out before you got money to buy more	6.52	0.041
Food you and other household members bought did not last and there wasn't any money to get more	7.58	0.040
You and other household members couldn't afford to eat balanced meals	7.35	0.040
You or other adults in your household ever cut size of meals or skipped meals	9.47	0.049
You or other adults in your household ever cut size of meals or skipped meals in 3 or more months	10.25	0.056
You (personally) ever ate less than you felt you should	9.38	0.048
You (personally) were ever hungry but did not eat	11.01	0.063
You (personally) lost weight	12.06	0.076
You or other adults in your household ever did not eat for whole day	12.96	0.092
You or other adults in your household ever did not eat for whole day in 3 or more months	13.42	0.106
Mean **Standard deviation** **Discrimination parameter**	**10.00** **2.391** **1.00**	
Number of cases[3]	**4,413**	

CCHS Canadian Community Health Survey

Footnotes:

1. Item scores were estimated from data for the combined sample of households interviewed in English and French. Item severity scores are based on two separate analyses, one omitting the two "3 or more months" items, the second including those items and omitting the corresponding "ever during the year" items. This procedure provides unbiased estimates for the mutually dependent items. Conditional maximum likelihood (CML) methods were used to estimate model parameters.
2. The wording of each question as read to the respondent includes explicit reference to resource limitation (e.g. "…because there wasn't enough money for food").
3. The number of cases in the scaling analyses is considerably smaller than the total number of households interviewed. Households that reported no food-insecure conditions are omitted from the scaling analyses; however, they are included in prevalence calculations, with food security status "food secure". Similarly, households that reported all 10 food-insecure conditions are omitted from the scaling analyses, but included in prevalence calculations with adults' food security status "severely food insecure".

Table B.4 CCHS 2004 Adult Food Security Scale score and food security status corresponding to each raw score[1]

Adult Food Security Raw Score	Adult Food Security Scale Score	Measurement Standard Error	Adult Food Security Status
0	…[2]	…	**Food secure**
1	6.2	1.19	
2	7.4	1.00	**Food insecure, moderate**
3	8.3	0.94	
4	9.2	0.91	
5	10.0	0.90	
6	10.8	0.91	**Food insecure, severe**
7	11.7	0.94	
8	12.6	1.00	
9	13.8	1.19	
10	14.7[3]	1.54	

CCHS Canadian Community Health Survey

… Not applicable

Footnotes:

1. Scale scores were estimated using maximum likelihood methods based on the item scores for the combined English and French sub-samples in the CCHS as presented in Table B.3.
2. Scale scores are not determined for households that reported no food-insecure conditions (raw score = 0). Adults in these households are more food secure than those with raw score 1, but the size of the interval cannot be estimated with confidence.
3. Scale scores are not determined for households that reported all 10 food-insecure conditions (raw score = 10). The tabled score for these households is based on a hypothetical raw score of 9.5.

B.3.2 Child Food Security Scale

For modelling purposes, the CCHS Child Food Security Scale comprises seven of the eight child-referenced items in the U.S. Children's Food Security Scale. The question about children not eating for a whole day in the CCHS child scale was omitted from the modelling because this severely food insecure condition was reported by very few households, and almost exclusively by households reporting all other indicators of food insecurity among children. It was therefore dropped from the scale since it added essentially no information and its calibration (severity score) could not be estimated reliably. All eight items in the Child Food Security Scale were included in the analysis to determine child food security status.

Measurement models for the child scale were initially estimated separately for households interviewed in English, households interviewed in French and Aboriginal households. Scaling samples were relatively small (since households reporting no food-insecure conditions among children are omitted from these analyses), and there were no statistically significant differences in item severity scores. A likelihood ratio test also confirmed that the improvement in model fit from modelling the sub-populations separately was not statistically significant. Therefore, the results presented here use the combined sample of households interviewed in English and in French.

Item-infit statistics confirmed that the seven child-referenced items all measure the same underlying condition (see Table B.5). The highest infit was 1.08, well below the 1.2 level considered to mark the top of the desirable range. The item, "Children were not eating enough", was somewhat more closely related to the underlying condition than were the other items. The same is true in the U.S. CPS-FSS.

The relative severities of the child-referenced items were very similar in the U.S. CPS-FSS and in the CCHS (see Table B.6 and Figure B.4). Measured levels of food insecurity among children and population-level prevalence statistics may be considered directly comparable in the two countries.

Scale scores corresponding with each raw score on the Child Food Security Scale are presented in Table B.7. The caveats provided in the previous section regarding the use of the Adult Food Security Scale scores are relevant for use of the Child Food Security Scale scores as well.

Table B.5 Item-infit statistics, CCHS 2004 Child Food Security Scale, and comparison to U.S. CPS–Food Security Supplement 2004[1]

Item[2]	CCHS	U.S. CPS-FSS
You or other adults in your household relied on only a few kinds of low-cost food to feed children	1.04	1.03
You or other adults in your household couldn't feed children a balanced meal	0.86	0.87
Children were not eating enough	0.77	0.79
You or other adults in your household ever cut size of any of the children's meals	1.08	0.99
Any of the children were ever hungry	0.95	1.01
Any of the children ever skipped meals	0.94	0.99
Any of the children ever skipped meals in 3 or more months	0.89	0.92
Number of cases[3]	**1,650**	**2,740**

CCHS Canadian Community Health Survey

CPS Current Population Survey (U.S.)

CPS-FSS Current Population Survey, Food Security Supplement (U.S.)

Footnotes:

1. CCHS English and French sub-samples were combined as there were no significant differences in item severity scores between households interviewed in English and French nor between Aboriginal and non-Aboriginal sub-samples. Item-infit statistics are based on two separate analyses, one omitting the "any of the children ever skipped meals in 3 or more months" item, the second including that item and omitting the corresponding "ever during the year" item. This procedure provides unbiased estimates for the mutually dependent items. Conditional maximum likelihood (CML) methods were used to estimate model parameters.
2. The wording of each question as read to the respondent includes explicit reference to resource limitation (e.g. "...because there wasn't enough money for food").
3. The number of cases in the scaling analyses is considerably smaller than the total number of households interviewed. Households that reported no food-insecure conditions are omitted from the scaling analyses; however, they are included in prevalence calculations, with food security status "food secure". Similarly, households that reported all 7 food-insecure conditions are omitted from the scaling analyses, but included in prevalence calculations with children's food security status "severely food insecure".

Table B.6 Item severity scores, CCHS 2004 Child Food Security Scale, and comparison to U.S. CPS–Food Security Supplement 2004[1]

Item[2]	CCHS	U.S. CPS-FSS[3]
You or other adults in your household relied on only a few kinds of low-cost food to feed children	5.19	4.72*
You or other adults in your household couldn't feed children a balanced meal	6.66	6.87*
Children were not eating enough	9.25	9.21
You or other adults in your household ever cut size of any of the children's meals	11.55	11.56
Any of the children were ever hungry	12.49	12.65
Any of the children ever skipped meals	12.81	13.15
Any of the children ever skipped meals in 3 or more months	12.05	11.84
Mean **Standard deviation** **Discrimination parameter**	**10.00** **3.046** **1.00**	**10.00** **3.189** **1.00**
Number of cases[4]	**1,650**	**2,740**

CCHS Canadian Community Health Survey

CPS Current Population Survey (U.S.)

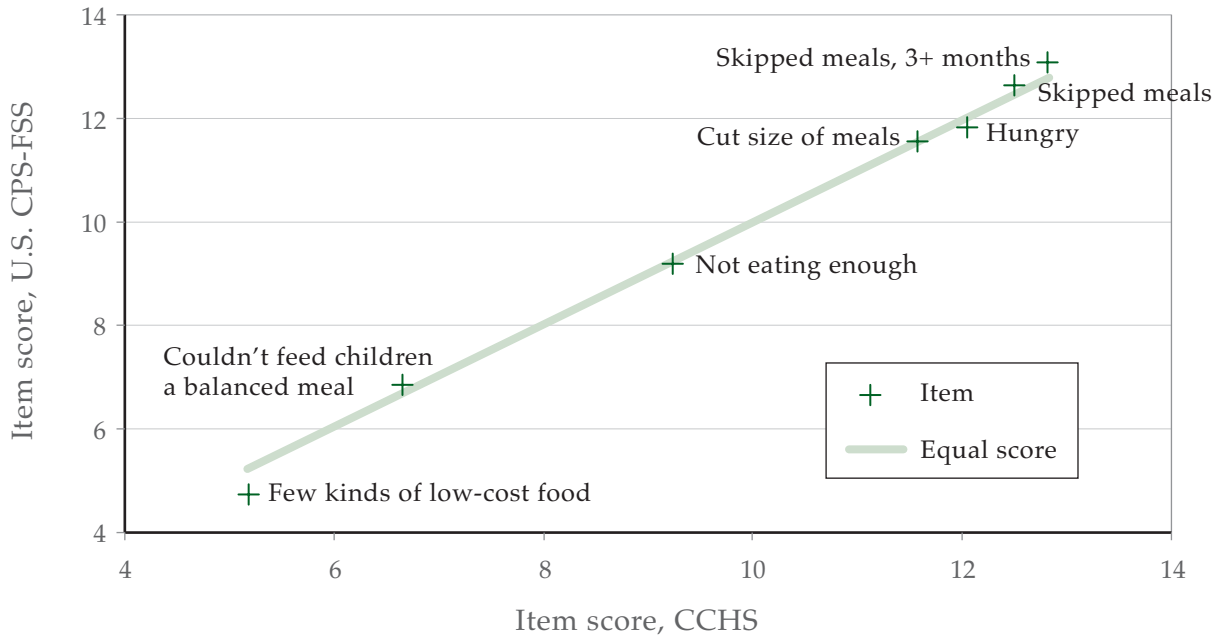
CPS-FSS Current Population Survey, Food Security Supplement (U.S.)

* Difference is statistically significant with 90 percent confidence.

Footnotes:

1. CCHS English and French sub-samples were combined as there were no significant differences in item severity scores between households interviewed in English and French nor between Aboriginal and non-Aboriginal sub-samples. Item severity scores are based on two separate analyses, one omitting the "any of the children ever skipped meals in 3 or more months" item, the second including that item and omitting the corresponding "ever during the year" item. This procedure provides unbiased estimates for the mutually dependent items. Conditional maximum likelihood (CML) methods were used to estimate model parameters.
2. The wording of each question as read to the respondent includes explicit reference to resource limitation (e.g. "...because there wasn't enough money for food").
3. Dispersion of scores of the child-referenced items in the U.S. CPS-FSS was about 5 percent larger than in the CCHS. The tabled values were not adjusted for this difference. Comparison of item scores adjusted for the difference in discrimination found no changes in statistical significance from those indicated.
4. The number of cases in the scaling analyses is considerably smaller than the total number of households interviewed. Households that reported no food-insecure conditions are omitted from the scaling analyses; however, they are included in prevalence calculations, with food security status "food secure". Similarly, households that reported all 7 food-insecure conditions are omitted from the scaling analyses, but included in prevalence calculations with children's food security status "severely food insecure".

Figure B.4 **Comparison of item scores on Child Food Security Scale, U.S. CPS–Food Security Supplement 2004 versus CCHS 2004**



CCHS Canadian Community Health Survey
CPS Current Population Survey (U.S.)
CPS-FSS Current Population Survey, Food Security Supplement (U.S.)

Table B.7 CCHS 2004 Child Food Security Scale score and food security status corresponding to each raw score[1]

Child Food Security Raw Score	Child Food Security Scale Score	Measurement Standard Error	Child Food Security Status
0	…[2]	…	**Food secure**
1	5.8	1.45	
2	8.0	1.48	**Food insecure, moderate**
3	9.9	1.27	
4	11.2	1.06	
5	12.3	1.00	**Food insecure, severe**
6	13.4	1.17	
7	14.3[3]	1.52	

CCHS Canadian Community Health Survey

… Not applicable

Footnotes:

1. Scale scores were estimated using maximum likelihood methods based on the item scores for the combined English and French sub-samples in the CCHS as presented in Table B.6.
2. Scale scores are not determined for households that reported no food-insecure conditions among children (raw score = 0). Children in these households are more food secure than those with raw score 1, but the size of the interval cannot be estimated with confidence.
3. Scale scores are not determined for households that reported all 7 food-insecure conditions among children (raw score = 7). The tabled score for these households is based on a hypothetical raw score of 6.5.

References for Appendix B

Baker FB. *Item Response Theory: Parameter Estimation Techniques*. New York: Marcel Dekker, Inc., 1992.

Bickel G, Nord M, Price C et al. *Guide to Measuring Household Food Security, Revised 2000*. Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 2000. Available at: www.fns.usda.gov/fsec/files/fsguide.pdf (accessed May 2, 2006).

Fischer GH, Molenaar IW, eds. *Rasch Models: Foundations, Recent Developments, and Applications*. New York: Springer-Verlag, 1995.

Hambleton RK, Swaminathan H, Rogers HJ. *Fundamentals of Item Response Theory*. Newbury Park, CA: Sage Publications, Inc., 1991.

Hamilton WL, Cook JT, Thompson WW et al. *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project*. Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 1997a. Available at: www.fns.usda.gov/oane/menu/published/foodsecurity/sumrpt.pdf (accessed May 2, 2006).

Hamilton WL, Cook JT, Thompson WW et al. *Household Food Security in the United States in 1995: Technical Report of the Food Security Measurement Project.* Alexandria, VA: Food and Nutrition Service, United States Department of Agriculture, 1997b. Available at: www.fns.usda.gov/oane/menu/published/foodsecurity/tech_rpt.pdf (accessed May 2, 2006).

Nord M. *A 30-Day Food Security Scale for Current Population Survey Food Security Supplement Data*. E-FAN No. 02015. Alexandria, VA: Economic Research Service, United States Department of Agriculture, 2002. Available at: www.ers.usda.gov/publications/efan02015 (accessed May 2, 2006).

Nord M. Measuring the food security of elderly persons. *Fam Econ Nutr Rev* 2003;15:33–46. Available at: www.usda.gov/cnpp/FENR/FENRv15n1/fenrv15n1p33.pdf (accessed May 2, 2006).

Nord M, Andrews M, Carlson S. *Household Food Security in the United States, 2005*. Economic Research Report No. 29, Washington, DC: Economic Research Service, United States Department of Agriculture, 2006. Available at: www.ers.usda.gov/publications/err29 (accessed November 16, 2006).

Nord M, Bickel G. *Measuring Children's Food Security in U.S. Households, 1995–99*. Food Assistance and Nutrition Research Report No. 25. Washington, DC: Economic Research Service, United States Department of Agriculture, 2002. Available at: www.ers.usda.gov/publications/fanrr25 (accessed May 2, 2006).

Radimer KL, Olson CM, Campbell CC. Development of indicators to assess hunger. *J Nutr* 1990;120 (Suppl 11):1544–1548.

Radimer KL, Olson CM, Greene JC et al. Understanding hunger and developing indicators to assess it in women and children. *J Nutr Ed* 1992;24:36S–44S.

Wehler CA, Scott RI, Anderson JJ. The Community Childhood Hunger Identification Project: a model of domestic hunger—demonstration project in Seattle, Washington. *J Nutr Ed* 1992;24:29S–35S.

Wright BD. *Solving Measurement Problems with the Rasch Model*. IOM Research Memorandum Number 42. Chicago, IL: Mesa Psychometric Laboratory, the University of Chicago, College of Education, 1977. Available at: www.rasch.org/memos.htm (accessed May 2, 2006).

Wright BD. *Fundamental Measurement in Social Science and Education*. IOM Research Memorandum Number 33a. Chicago, IL: Mesa Psychometric Laboratory, the University of Chicago, College of Education, 1983. Available at: www.rasch.org/memos.htm (accessed May 2, 2006).

Notes

Appendix C: Responses to Questions in the Household Food Security Survey Module

The percentage of Canadian households agreeing with each of the items in the Household Food Security Survey Module (HFSSM) is presented in Table C.1.

Table C.2 shows the distribution of raw scores within each of the food security status categories.[26]

- A large majority of households reported no food-insecure conditions among adults (87.1%)[27] or children (90.5%).
- A small percentage of households reported one food insecure condition among adults (3.9%)[28] or children (4.2%); these households were considered food secure.
    - On the Adult Food Security Scale, when only one item was affirmed, it was most likely to be "You and other household members worried that food would run out before you got money to buy more" (50.0%) or "You and other household members couldn't afford to eat balanced meals" (36.2%), followed by "Food that you and other household members bought didn't last, and there wasn't any money to get more" (13.2%) (data not shown).
    - When only one item was affirmed on the Child Food Security Scale, it was most likely to be "You or other adults in your household relied on only a few kinds of low-cost food to feed the children" (80.2%), followed by "You or other adults in your household couldn't feed the children a balanced meal" (18.7%) (data not shown).
    - Although these households are considered to have food security among their adult and child members, the food security for some of them may have been uncertain at times during the year.

---

[26] Prevalence estimates associated with the Child Food Security Scale were calculated only for households with children; households without children were not included in the denominator.

[27] 85.2% in households with children; 87.9% in households without children.

[28] 5.0% in households with children; 3.5% in households without children.

Table C.1 Responses to items in the Household Food Security Survey Module, Canada, 2004[1,2]

	Households affirming item[3,4]					
	All Households		Households with Children		Households without Children	
	n	%	n	%	n	%
Adult Food Security Scale						
You and other household members worried food would run out before you got money to buy more	1,224,700	10.0	468,100	11.8	756,600	9.2
Food you and other household members bought didn't last and there wasn't any money to get more	936,200	7.7	331,800	8.4	604,400	7.3
You and other household members couldn't afford to eat balanced meals	1,030,900	8.4	325,100	8.2	705,900	8.6
You or other adults in your household ever cut size of meals or skipped meals	530,000	4.3	162,200	4.1	367,700	4.5
You or other adults in your household ever cut size of meals or skipped meals in 3 or more months	406,100	3.3	116,900	3.0	289,200	3.5
You (personally) ever ate less than you felt you should	561,500	4.6	179,300	4.5	382,200	4.6
You (personally) were ever hungry but did not eat	317,800	2.6	79,900	2.0	237,900	2.9
You (personally) lost weight	198,000	1.6	44,000	1.1	154,000	1.9
You or other adults in your household ever did not eat for whole day	113,100	0.9	26,000	0.7	87,100	1.0
You or other adults in your household ever did not eat for whole day in 3 or more months	93,900	0.8	19,400	0.5	74,400	0.9
Child Food Security Scale[5]						
You or other adults in your household relied on only a few kinds of low-cost food to feed children	337,400	2.8	337,400	2.8	...	...
You or other adults in your household couldn't feed children a balanced meal	230,500	1.9	230,500	1.9	...	...
Children were not eating enough	98,800	0.8	98,800	0.8	...	...
You or other adults in your household ever cut size of any of the children's meals	25,300	0.2	25,300	0.2	...	...
Any of the children were ever hungry	21,100	0.2	21,100	0.2	...	...
Any of the children ever skipped meals	14,900	0.1[E]	14,900	0.1[E]	...	...
Any of the children ever skipped meals in 3 or more months	10,500	0.1[E]	10,500	0.1[E]	...	...
Any of the children ever did not eat for whole day	F	F	F	F	...	...

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Legend:

n Weighted sample size, rounded to nearest 100

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

... Not applicable

Footnotes:

1. Territories and First Nations reserves are not included.
2. The wording of each question as read to the respondent includes explicit reference to resource limitation (e.g. "...because there wasn't enough money for food").
3. Bootstrapping techniques were used to produce the coefficient of variation (CV) and 95% confidence intervals (CI).
4. Households for which the item was "not applicable" were excluded from the denominator.
5. Results from the Child Food Security Scale were obtained only from households with children. Children are defined as individuals younger than 18 years of age.

Table C.2 Percentage of households by food security raw score, Adult Food Security Scale and Child Food Security Scale, Canada, 2004[1,2]

	All Households			Households with Children			Households without Children		
Raw Score	%	Cumulative %	Food Security Status	%	Cumulative %	Food Security Status	%	Cumulative %	Food Security Status
Adult Food Security Scale									
0	87.1	87.1	Food Secure (91.0%)	85.2	85.2	Food Secure (90.2%)	87.9	87.9	Food Secure (91.4%)
1	3.9	91.0		5.0	90.2		3.5	91.4	
2	2.2	93.2	Food Insecure, Moderate (6.1%)	3.0	93.2	Food Insecure, Moderate (7.5%)	1.8	93.2	Food Insecure, Moderate (5.5%)
3	2.2	95.3		2.5	95.7		2.0	95.2	
4	1.0	96.4		1.1	96.8		1.0	96.2	
5	0.8	97.1		0.9	97.7		0.7	96.9	
6	0.8	97.9	Food Insecure, Severe (2.9%)	0.9	98.6	Food Insecure, Severe (2.3%)	0.8	97.6	Food Insecure, Severe (3.1%)
7	0.9	98.8		0.7	99.3		1.0	98.6	
8	0.5	99.3		0.4[E]	99.6		0.6[E]	99.2	
9	0.3[E]	99.6		F	99.7		0.3[E]	99.5	
10	0.4[E]	100.0		0.3[E]	100.0		0.5[E]	100.0	
Child Food Security Scale[3]									
0	90.5	90.5	Food Secure (94.8%)	90.5	90.5	Food Secure (94.8%)	...	...	...
1	4.2	94.8		4.2	94.8		...	...	
2	2.7	97.4	Food Insecure, Moderate (4.9%)	2.7	97.4	Food Insecure, Moderate (4.9%)	...	...	...
3	1.7	99.2		1.7	99.2		...	...	
4	0.5	99.6		0.5	99.6		...	...	
5	0.2[E]	99.8	Food Insecure, Severe (0.4%)	0.2[E]	99.8	Food Insecure, Severe (0.4%)	...	...	...
6	F	99.9		F	99.9		...	...	
7	F	100.0		F	100.0		...	...	
8	F	100.0		F	100.0		...	...	

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Legend:

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

... Not applicable

Footnotes:

1. Territories and First Nations reserves are not included.
2. Bootstrapping techniques were used to produce the coefficient of variation (CV) and 95% confidence intervals (CI).
3. Results from the Child Food Security Scale were obtained only from households with children. Children are defined as individuals younger than 18 years of age.

Notes

Appendix D: Descriptive Variables[29]

Aboriginal status

An affirmative response to the question "People living in Canada come from many different cultural and racial backgrounds. Are you: Aboriginal (North American Indian, Métis, Inuit)?" was used to identify Aboriginal respondents and thus, Aboriginal *households*. It is recognized, however, that other members of the household may not necessarily self-identify as being of Aboriginal cultural or racial background.

Area of residence—Urban and Rural

Statistics Canada's original derived variable was used without modification. "Urban" areas are those continuously built-up areas that have a population concentration of 1,000 or more and a population density of 400 or more per square kilometre based on current census population counts. All other areas were considered "rural".

Highest level of education in household

Statistics Canada's original derived variable was used without modification. This variable reflects the highest level of education achieved by any member of the household. The four levels were: "less than secondary school graduation"; "secondary school graduation"; "some post-secondary education"; and "post-secondary graduation".

Home ownership

Statistics Canada's original derived variable was used without modification. Households that answered affirmatively to the question "Is this dwelling owned by a member of this household?" comprised the "own dwelling" category. All other households formed the category "do not own dwelling".

[29] Derived variables provided by Statistics Canada were used in the data analysis. For detailed information on the derived variables, see CCHS 2.2 survey documentation (available at: www.statcan.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=5049&lang=en&db=IMDB&dbg=f&adm=8&dis=2).

Household income adequacy

Statistics Canada's original derived variable was used without modification. As shown below, the five categories are based on a household's size and total gross income in the previous 12 months.

Household income adequacy category	Total household income and household size criteria
Lowest	<$10,000 if 1 to 4 people <$15,000 if ≥5 people
Lower middle	$10,000 to $14,999 if 1 or 2 people $10,000 to $19,999 if 3 or 4 people $15,000 to $29,999 if ≥5 people
Middle	$15,000 to $29,999 if 1 or 2 people $20,000 to $39,999 if 3 or 4 people $30,000 to $59,999 if ≥5 people
Upper middle	$30,000 to $59,999 if 1 or 2 people $40,000 to $79,999 if 3 or 4 people $60,000 to $79,999 if ≥5 people
Highest	≥$60,000 if 1 or 2 people ≥$80,000 if ≥3 people

Household types: Households with children

In Statistics Canada's original derived variable, households are considered as having children if at least one member is younger than 25 years of age. However, the child-specific questions in the HFSSM were designed for households with at least one member younger than 18 years of age. For the purposes of this report information on the number of people of specific age ranges in the household was used to identify "households with children". To be categorized as having children, a value greater than 0 was required for at least one of the following: number of persons in the household aged 5 or less; between 6 and 11; 12 or less; between 16 and 17; or 17 or less.

In addition, for "lone-parent households" the categories "living with others" and "living without others" were combined. This report presents five types of households with children younger than 18 years based on the seven types stemming from Statistics Canada's original derived variable.

Household types: Households without children

Households with at least one member between 18 and 25 years of age would be considered "households with children" based on Statistics Canada's original derived variable. However, for the purposes of this report, they were considered "households without children" (see above section, Household types: Households with children). The original category of "couple households living without others" was retained without modification. Those with children aged between 18 and 25 years maintained their classification as a "couple household" and were further considered as "living with others". Lone-parent households with children aged between 18 and 25 years belonged to the "other type of households" category; this category also included households originally categorized as "other". The original category of "unattached individual living without others" was retained and further specified according to the gender of respondents.

Immigrant status

An affirmative response to Statistics Canada's original indicator variable on immigrant status was used to identify immigrant respondents, and therefore "immigrant households". The indicator variable is based on a respondent's country of birth and Canadian citizenship at birth. "Recent" was defined as less than 5 years in Canada.

Main source of household income

The 13 main sources of income in Statistics Canada's original derived variable were collapsed into 5 categories for the purposes of this report: (i) Salary/Wages: "wages and salaries" and "income from self-employment"; (ii) Social assistance: "provincial or municipal social assistance/welfare"; (iii) Worker's compensation/Employment insurance: "worker's compensation" and "employment insurance"; (iv) Pensions/Seniors' benefits: "benefits from Canada or Québec pension", "retirement pensions, etc." and "Old Age Security and Guaranteed Income Supplement"; and (v) Other: "alimony", "child support", "child tax benefits", "dividends and interest", and "other".

Number of children

Among all types of households with children younger than 18 years (whether headed by a couple or a lone parent), those with a total value of 1 or 2 for the questions about the number of people aged 5 or less; between 6 and 11; 12 or less; between 16 and 17; or 17 or less in the household made up the category "with 1 or 2 children". All other households formed the category "with ≥3 children". Both categories combined accounted for 100% of the sub-sample "households with children".

Presence of young children

Within the sub-sample of households with children, those with at least one member aged 5 years or less were considered households "with child(ren) <6 years old". All other households formed the category "no child(ren) <6 years old". Both categories combined accounted for 100% of households in the sub-sample of "households with children".

Appendix E: Detailed Tables[30]

[30] For additional tables from the analysis of the food security data, including by province, see *Canadian Community Health Survey, Cycle 2.2, Nutrition (2004)—Income-Related Household Food Security in Canada: Supplementary Data Tables* (available at: www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index_e.html).

Table E.1 Income-related household food security status, by selected socio-demographic variables, Canada, 2004[1]

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Household type													
All households[4]	Household status[5]	11,089,200	90.8	90.2-91.4	1,123,600	9.2	8.6-9.8	769,900	6.3	5.8-6.8	353,700	2.9	2.6-3.2
	Adult status	11,131,400	91.0	90.4-91.6	1,101,000	9.0	8.4-9.6	750,300	6.1	5.7-6.6	350,700	2.9	2.5-3.2
	Child status[6]	3,747,300	94.8	94.2-95.3	207,100	5.2	4.7-5.8	192,900	4.9	4.3-5.4	14,200	0.4	0.2-0.5
Households with children[7]	Household status	3,542,000	89.6	88.8-90.3	412,300	10.4	9.7-11.2	317,100	8.0	7.3-8.7	95,200	2.4	2.0-2.8
	Adult status	3,584,200	90.2	89.5-90.9	389,700	9.8	9.1-10.6	297,500	7.5	6.8-8.2	92,200	2.3	1.9-2.7
	Child status	3,747,300	94.8	94.2-95.3	207,100	5.2	4.7-5.8	192,900	4.9	4.3-5.4	14,200	0.4	0.2-0.5
Households without children	Household status	7,547,200	91.4	90.6-92.1	711,200	8.6	7.9-9.4	452,800	5.5	4.9-6.1	258,500	3.1	2.7-3.6
Household income adequacy													
Lowest	Household status	245,800	51.7	46.8-56.5	229,900	48.3	43.5-53.2	111,800	23.5	19.0-28.1	118,100	24.8	20.3-29.4
	Adult status	246,400	51.7	46.9-56.6	229,800	48.3	43.4-53.1	111,400	23.4	18.9-28.0	118,400	24.9	20.4-29.4
	Child status	65,900	77.3	70.2-84.4	19,400	22.7	15.6-29.8	16,600	19.4	12.8-26.1	F	F	F
Lower middle	Household status	626,500	70.9	67.7-74.1	257,500	29.1	25.9-32.3	162,600	18.4	15.7-21.1	94,900	10.7	8.6-12.9
	Adult status	632,200	71.5	68.3-74.7	252,000	28.5	25.3-31.7	159,800	18.1	15.4-20.7	92,200	10.4	8.3-12.6
	Child status	195,900	72.3	68.2-76.4	75,200	27.7	23.6-31.8	69,000	25.5	21.5-29.5	6,200	2.3[E]	1.1-3.5
Middle	Household status	2,093,100	86.4	85.1-87.8	329,100	13.6	12.2-14.9	244,000	10.1	9.0-11.2	85,000	3.5	2.7-4.4
	Adult status	2,106,300	86.9	85.5-88.2	318,900	13.2	11.8-14.5	234,300	9.7	8.6-10.7	84,600	3.5	2.7-4.3
	Child status	692,100	91.7	90.1-93.2	62,900	8.3	6.8-9.9	58,300	7.7	6.2-9.2	F	F	F
Upper middle	Household status	3,664,000	94.8	94.1-95.5	201,300	5.2	4.5-5.9	168,000	4.4	3.7-5.0	33,300	0.9[E]	0.6-1.2
	Adult status	3,668,900	94.9	94.2-95.6	199,800	5.1	4.4-5.8	165,500	4.3	3.6-4.9	33,300	0.9[E]	0.6-1.2
	Child status	1,238,000	97.4	96.5-98.3	33,200	2.6[E]	1.7-3.5	32,700	2.6[E]	1.7-3.5	F	F	F
Highest	Household status	3,313,400	98.7	98.3-99.0	45,000	1.3	1.0-1.7	33,300	1.0	0.7-1.3	F	F	F
	Adult status	3,319,400	98.7	98.4-99.1	43,500	1.3	0.9-1.7	31,800	1.0	0.7-1.2	F	F	F
	Child status	1,186,600	99.7	99.5-99.9	F	F	F	F	F	F	F	F	F
Not available	Household status	1,146,400	95.0	93.7-96.3	60,700	5.0	3.7-6.3	F	F	F	F	F	F
	Adult status	1,115,800	95.2	93.9-96.5	58,000	4.8	3.5-6.1	F	F	F	F	F	F
	Child status	368,800	96.7	95.4-98.1	12,500	3.3[E]	2.0-4.6	F	F	F	F	F	F

Table E.1 Income-related household food security status, by selected socio-demographic variables, Canada, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Main source of household income													
Salary / Wages	Household status	7,754,100	92.7	92.1-93.3	611,900	7.3	6.7-7.9	464,400	5.6	5.0-6.1	147,500	1.8	1.5-2.1
	Adult status	7,783,700	92.9	92.3-93.5	596,000	7.1	6.5-7.7	449,100	5.4	4.8-5.9	146,800	1.8	1.5-2.1
	Child status	3,425,800	96.4	95.9-96.9	126,600	3.6	3.0-4.1	120,600	3.4	2.9-3.9	6,000	0.2[E]	0.1-0.3
Social assistance	Household status	185,200	40.3	35.4-45.2	274,800	59.7	54.8-64.6	135,900	29.6	25.0-34.1	138,800	30.2	25.3-35.1
	Adult status	188,800	41.0	36.1-46.0	271,600	59.0	54.1-63.9	134,800	29.3	24.9-33.7	136,800	29.7	24.9-34.6
	Child status	89,100	62.2	55.8-68.6	54,100	37.8	31.4-44.2	47,100	32.9	26.7-39.0	7,100	4.9[E]	2.6-7.2
Worker's compensation / Employment insurance	Household status	89,600	71.0	62.7-79.4	36,600	29.0	20.7-37.3	25,600	20.3[E]	12.5-28.1	11,000	8.7[E]	3.7-13.7
	Adult status	90,100	71.4	63.0-79.7	36,100	28.6	20.3-37.0	25,200	19.9[E]	12.1-27.7	11,000	8.7[E]	3.7-13.7
	Child status	36,100	85.7	77.3-94.0	6,000	14.4[E]	6.0-22.7	6,000	14.4[E]	6.0-22.7	F	F	F
Pensions / Seniors' benefits	Household status	2,316,600	95.1	94.1-96.1	120,000	4.9	3.9-5.9	97,500	4.0	3.1-4.9	22,600	0.9[E]	0.5-1.4
	Adult status	2,316,900	95.1	94.1-96.1	119,700	4.9	3.9-5.9	97,200	4.0	3.1-4.9	22,600	0.9[E]	0.5-1.4
	Child status	32,300	90.4	84.6-96.2	F	F	F	F	F	F	F	F	F
Other	Household status	403,900	87.6	84.4-90.8	57,200	12.4	9.2-15.6	32,800	7.1	4.9-9.3	24,500	5.3[E]	2.9-7.7
	Adult status	404,900	87.8	84.6-91.0	56,000	12.2	9.1-15.4	32,100	7.0	4.8-9.2	24,200	5.2[E]	2.9-7.6
	Child status	63,000	83.6	77.5-89.6	12,400	16.4[E]	10.4-22.5	F	F	F	F	F	F
Highest level of education in household													
Less than secondary school graduation	Household status	1,434,500	86.2	84.3-88.1	229,700	13.8	11.9-15.7	135,800	8.2	6.7-9.6	93,900	5.6	4.4-6.9
	Adult status	1,438,000	86.3	84.5-88.2	227,600	13.7	11.8-15.5	134,200	8.1	6.6-9.5	93,400	5.6	4.3-6.9
	Child status	166,700	84.8	81.5-88.0	30,000	15.2	12.0-18.5	25,500	13.0	9.8-16.1	F	F	F
Secondary school graduation	Household status	1,293,500	87.5	85.8-89.2	185,300	12.5	10.8-14.3	124,100	8.4	7.0-9.8	61,200	4.1	2.9-5.3
	Adult status	1,298,900	87.7	86.0-89.4	181,900	12.3	10.6-14.0	120,900	8.2	6.8-9.5	61,000	4.1[E]	2.9-5.3
	Child status	397,100	91.9	89.6-94.2	35,000	8.1	5.8-10.4	F	F	F	F	F	F
Some post-secondary education	Household status	742,000	84.9	82.6-87.2	131,900	15.1	12.8-17.4	82,900	9.5	7.8-11.1	49,000	5.6	4.0-7.2
	Adult status	745,300	85.2	83.0-87.5	129,200	14.8	12.5-17.0	80,200	9.2	7.6-10.8	49,000	5.6	4.0-7.2
	Child status	273,400	91.4	88.8-94.0	25,700	8.6	6.0-11.2	F	F	F	F	F	F
Post-secondary graduation	Household status	7,438,600	93.1	92.4-93.7	554,400	6.9	6.3-7.6	411,200	5.1	4.6-5.7	143,200	1.8	1.5-2.1
	Adult status	7,467,800	93.3	92.6-93.9	540,000	6.7	6.1-7.4	397,500	5.0	4.4-5.5	142,500	1.8	1.5-2.1
	Child status	2,840,700	96.3	95.7-96.9	110,400	3.7	3.1-4.3	105,700	3.6	3.0-4.2	F	F	F

Table E.1 Income-related household food security status, by selected socio-demographic variables, Canada, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Home ownership													
Own dwelling	Household status	7,991,500	96.1	95.7-96.5	325,400	3.9	3.5-4.3	261,300	3.1	2.8-3.5	64,200	0.8	0.6-1.0
	Adult status	8,017,400	96.2	95.8-96.6	315,000	3.8	3.4-4.2	252,500	3.0	2.7-3.4	62,500	0.8	0.6-0.9
	Child status	2,872,400	97.4	96.9-98.0	75,500	2.6	2.1-3.1	70,800	2.4	1.9-2.9	F	F	F
Do not own dwelling	Household status	3,083,600	79.5	78.0-81.0	796,200	20.5	19.0-22.0	508,600	13.1	11.8-14.4	287,500	7.4	6.5-8.4
	Adult status	3,099,900	79.8	78.3-81.3	784,000	20.2	18.7-21.7	497,800	12.8	11.5-14.1	286,200	7.4	6.4-8.3
	Child status	868,300	86.9	85.2-88.6	131,000	13.1	11.4-14.8	121,400	12.2	10.5-13.8	9,600	1.0[E]	0.6-1.3
Area of residence													
Urban	Household status	9,122,200	90.4	89.8-91.0	969,400	9.6	9.0-12.3	659,200	6.5	6.0-7.1	310,200	3.1	2.7-3.5
	Adult status	9,156,300	90.6	90.0-91.3	949,600	9.4	8.8-10.0	641,400	6.4	5.8-6.9	308,200	3.1	2.7-3.4
	Child status	3,097,700	94.6	94.0-95.3	176,400	5.4	4.8-6.0	165,500	5.1	4.4-5.7	10,900	0.3[E]	0.2-0.5
Rural	Household status	1,967,000	92.7	91.7-93.8	154,200	7.3	6.2-8.3	110,700	5.2	4.3-6.1	43,400	2.1	1.5-2.6
	Adult status	1,975,100	92.9	91.9-93.9	151,400	7.1	6.1-8.2	108,900	5.1	4.2-6.0	42,500	2.0	1.4-2.6
	Child status	649,500	95.5	94.2-96.7	30,700	4.5	3.3-5.8	F	F	F	F	F	F
Immigration status													
Recent immigrant household	Household status	305,600	85.2	80.3-90.1	52,900	14.8	9.9-19.7	39,100	10.9[E]	6.4-15.4	13,800	3.9[E]	1.5-6.2
	Adult status	309,600	86.3	81.4-91.1	49,300	13.7[E]	8.9-18.6	35,700	10.0[E]	5.5-14.4	13,600	3.8[E]	1.4-6.2
	Child status	139,100	87.6	82.0-93.3	19,600	12.4[E]	6.7-18.0	F	F	F	F	F	F
Non-recent immigrant household	Household status	1,680,400	91.4	89.8-93.0	158,300	8.6	7.0-12.3	108,400	5.9	4.6-7.2	50,000	2.7[E]	1.8-3.7
	Adult status	1,686,200	91.4	89.8-93.0	158,600	8.6	7.0-10.2	108,900	5.9	4.6-7.3	49,800	2.7[E]	1.8-3.6
	Child status	350,600	94.4	91.5-97.4	20,700	5.6[E]	2.6-8.5	F	F	F	F	F	F
Non-immigrant household	Household status	9,087,100	90.9	90.3-91.5	909,100	9.1	8.5-9.7	622,000	6.2	5.8-6.7	287,100	2.9	2.5-3.2
	Adult status	9,119,100	91.1	90.5-91.7	889,900	8.9	8.3-9.5	605,200	6.1	5.6-6.5	284,600	2.8	2.5-3.2
	Child status	3,254,900	95.1	94.6-95.6	166,900	4.9	4.4-5.4	155,200	4.5	4.0-5.1	11,700	0.3[E]	0.2-0.5
Households with children													
Presence of young child(ren)													
With children <6 years	Household status	1,319,500	87.0	85.6-88.3	197,500	13.0	11.7-14.4	147,600	9.7	8.6-10.9	49,800	3.3	2.5-4.1
	Adult status	1,332,800	87.5	86.2-88.8	190,500	12.5	11.2-13.8	140,700	9.2	8.1-10.4	49,800	3.3	2.5-4.0
	Child status	1,427,200	94.1	93.1-95.1	89,900	5.9	4.9-6.9	F	F	F	F	F	F
No children <6 years	Household status	2,222,500	91.2	90.3-92.1	214,800	8.8	7.9-9.7	169,500	7.0	6.1-7.8	45,400	1.9	1.5-2.3
	Adult status	2,251,400	91.9	91.0-92.8	199,200	8.1	7.3-9.0	156,800	6.4	5.6-7.2	42,400	1.7	1.3-2.1
	Child status	2,320,000	95.2	94.5-95.9	117,200	4.8	4.1-5.5	107,700	4.4	3.7-5.1	9,600	0.4[E]	0.2-0.5

Table E.1 Income-related household food security status, by selected socio-demographic variables, Canada, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Number of children													
With 1 or 2 children	Household status	3,003,900	90.4	89.6-91.3	317,400	9.6	8.7-10.4	247,800	7.5	6.7-8.2	69,600	2.1	1.7-2.5
	Adult status	3,036,300	91.0	90.2-91.8	301,500	9.0	8.2-9.9	235,100	7.0	6.3-7.8	66,300	2.0	1.6-2.4
	Child status	3,168,700	95.4	94.8-96.0	152,600	4.6	4.0-5.2	142,300	4.3	3.7-4.9	10,200	0.3[E]	0.2-0.4
With ≥3 children	Household status	538,000	85.0	83.0-87.1	94,900	15.0	13.0-17.0	69,300	11.0	9.2-12.7	25,600	4.0	2.8-5.2
	Adult status	547,900	86.1	84.2-88.1	88,300	13.9	11.9-15.9	62,400	9.8	8.1-11.5	25,900	4.1	2.9-5.3
	Child status	578,500	91.4	89.7-93.1	54,600	8.6	6.9-10.3	50,600	8.0	6.3-9.7	F	F	F
Household type													
All couple-led households	Household status	2,922,400	92.4	91.6-93.2	239,000	7.6	6.8-8.4	194,700	6.2	5.4-6.9	44,300	1.4	1.0-1.8
	Adult status	2,953,500	93.0	92.2-93.8	223,300	7.0	6.3-7.8	180,200	5.7	5.0-6.4	43,100	1.4	1.0-1.7
	Child status	3,051,000	96.5	95.9-97.1	110,600	3.5	2.9-4.1	106,300	3.4	2.8-4.0	F	F	F
Couple-led, no others	Household status	2,612,200	92.8	92.0-93.7	201,800	7.2	6.4-8.0	162,000	5.8	5.0-6.5	39,900	1.4	1.0-1.8
	Adult status	2,640,900	93.4	92.6-94.2	187,700	6.6	5.8-7.4	149,100	5.3	4.6-6.0	38,600	1.4	1.0-1.8
	Child status	2,716,900	96.5	95.9-97.2	97,300	3.5	2.8-4.1	F	F	F	F	F	F
Couple-led, with others	Household status	310,200	89.3	86.2-92.4	37,200	10.7	7.6-13.9	32,700	9.4[E]	6.3-12.5	F	F	F
	Adult status	312,600	89.8	86.7-92.9	35,600	10.2	7.1-13.3	31,100	8.9[E]	5.9-12.0	F	F	F
	Child status	334,100	96.2	94.7-97.6	13,400	3.9[E]	2.4-5.3	13,300	3.8[E]	2.4-5.3	F	F	F
All lone-parent households	Household status	539,000	77.5	75.2-79.7	156,900	22.5	20.3-24.8	109,800	15.8	13.8-17.8	47,100	6.8	5.4-8.1
	Adult status	549,900	78.5	76.3-80.7	150,300	21.5	19.3-23.7	105,000	15.0	13.0-17.0	45,400	6.5	5.2-7.8
	Child status	605,400	87.0	85.2-88.7	90,500	13.0	11.3-14.8	81,900	11.8	10.1-13.4	8,700	1.3[E]	0.8-1.7
Female lone-parent households	Household status	448,500	75.1	72.5-77.7	148,700	24.9	22.3-27.5	103,900	17.4	15.1-19.7	44,800	7.5	6.0-9.0
	Adult status	457,400	76.1	73.5-78.6	143,800	23.9	21.4-26.5	100,400	16.7	14.4-19.0	43,300	7.2	5.7-8.7
	Child status	512,300	85.8	83.8-87.8	84,900	14.2	12.2-16.2	76,500	12.8	10.9-14.7	8,400	1.4[E]	0.9-2.0
Male lone-parent households	Household status	90,500	91.7	88.4-95.0	8,200	8.3[E]	5.0-11.6	5,900	6.0[E]	3.2-8.9	F	F	F
	Adult status	92,500	93.4	90.6-96.2	6,600	6.6[E]	3.9-9.4	4,500	4.6[E]	2.3-6.9	F	F	F
	Child status	93,100	94.3	91.2-97.4	F	F	F	F	F	F	F	F	F
Other households	Household status	44,400	80.2	72.1-88.3	11,000	19.8[E]	11.8-27.9	8,600	15.6[E]	7.9-23.3	F	F	F
	Adult status	44,700	80.6	72.6-88.7	10,700	19.4[E]	11.3-27.4	8,400	15.2[E]	7.5-22.8	F	F	F
	Child status	52,100	94.2	90.4-98.0	F	F	F	F	F	F	F	F	F

Table E.1 Income-related household food security status, by selected socio-demographic variables, Canada, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Households without children													
Household type													
All couple households	Household status	3,894,100	96.5	95.9-97.2	141,200	3.5	2.9-4.2	105,000	2.6[E]	2.1-3.2	36,200	0.9[E]	0.6-1.2
Couple, no others	Household status	3,026,100	96.7	96.0-97.4	103,500	3.3	2.6-4.0	74,600	2.4	1.8-3.0	28,900	0.9[E]	0.6-1.3
Couple, with others	Household status	868,000	95.8	94.5-97.2	37,800	4.2[E]	2.8-5.5	30,400	3.4[E]	2.2-4.5	F	F	F
Unattached individual, no others (All households)	Household status	2,855,300	86.3	84.8-87.9	452,000	13.7	12.2-15.2	274,000	8.3	7.1-9.5	178,100	5.4	4.4-6.4
Unattached female, no others	Household status	1,712,000	86.5	84.7-88.4	266,800	13.5	11.6-15.3	166,300	8.4	7.0-9.9	100,500	5.1	3.8-6.4
Unattached male, no others	Household status	1,143,300	86.1	83.7-88.4	185,200	13.9	11.6-16.3	107,700	8.1	6.2-10.0	77,500	5.8	4.5-7.2
Other households	Household status	794,400	87.1	84.7-89.6	117,400	12.9	10.5-15.3	73,300	8.0	6.1-10.0	44,100	4.8[E]	3.2-6.5

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Legend:

n Weighted sample size, rounded to nearest 100

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

Footnotes:

1. Territories and First Nations reserves are not included.
2. Bootstrapping techniques were used to produce the coefficient of variation (CV) and 95% confidence intervals (CI).
3. "All food insecure" is the sum of moderately and severely food insecure. Results may not add up due to rounding.
4. Results for "All households" reflect the situation of all households (those with children and those without children).
5. Food secure households have food secure adults and children (if present). Moderately food insecure households have moderate food insecurity among either adults or children (if present). Severely food insecure households have severe food insecurity among either adults or children (if present). Households for which adult or child status was missing are not included in the household status estimates.
6. Results on "child status" were obtained from households with children only.
7. Children are defined as individuals younger than 18 years of age.

Table E.2 Income-related household food security status, Canadian provinces, 2004[1]

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Newfoundland and Labrador													
All households[4]	Household status[5]	174,700	89.5	87.5-91.6	20,400	10.5	8.4-12.5	15,500	8.0	6.1-9.8	4,900	2.5[E]	1.7-3.3
	Adult status	176,200	89.8	87.8-91.8	20,000	10.2	8.2-12.2	15,300	7.8	6.0-9.6	4,700	2.4[E]	1.6-3.2
	Child status[6]	63,100	93.8	91.7-95.8	4,200	6.2	4.2-8.3	3,700	5.5	3.6-7.4	F	F	F
Households with children[7]	Household status	58,700	87.3	84.3-90.3	8,500	12.7	9.7-15.7	6,400	9.6	7.0-12.2	F	F	F
	Adult status	60,200	88.2	85.3-91.1	8,100	11.8	9.0-14.7	6,200	9.1	6.5-11.6	F	F	F
	Child status	63,100	93.8	91.7-95.8	4,200	6.2	4.2-8.3	3,700	5.5	3.6-7.4	F	F	F
Households without children	Household status	11,600	90.7	88.2-93.2	11,900	9.3	6.8-11.8	9,100	7.1	4.8-9.5	F	F	F
Prince Edward Island													
All households	Household status	47,900	90.8	88.3-93.3	4,800	9.2	6.7-11.7	3,700	7.1	5.0-9.2	1,100	2.1[E]	1.1-3.1
	Adult status	48,000	90.8	88.4-93.3	4,800	9.2	6.7-11.7	3,700	7.1	5.0-9.2	1,100	2.1[E]	1.1-3.1
	Child status	16,100	95.4	93.3-97.5	F	F	F	F	F	F	F	F	F
Households with children	Household status	15,100	89.4	86.1-92.7	1,800	10.6	7.3-13.9	1,300	7.9[E]	4.8-11.0	F	F	F
	Adult status	15,100	89.4	86.1-92.7	1,800	10.6	7.3-13.9	1,300	7.9[E]	4.8-11.0	F	F	F
	Child status	16,100	95.4	93.3-97.5	F	F	F	F	F	F	F	F	F
Households without children	Household status	32,900	91.5	88.2-94.8	3,000	8.5[E]	5.2-11.8	2,400	6.7[E]	3.8-9.6	F	F	F
Nova Scotia													
All households	Household status	3,167,000	85.4	82.2-88.5	54,200	14.6	11.5-17.8	35,300	9.5	7.3-11.7	18,900	5.1[E]	3.1-7.1
	Adult status	3,179,009	85.5	82.3-88.6	54,000	14.5	11.4-17.7	35,700	9.6	7.4-11.8	18,300	4.9[E]	3.0-6.9
	Child status	101,600	92.1	89.5-94.8	8,700	7.9	5.2-10.5	7,500	6.8[E]	4.3-9.3	F	F	F
Households with children	Household status	93,700	85.0	81.6-88.3	16,600	15.1	11.7-18.4	12,000	10.9	7.8-14.0	4,600	4.2[E]	2.4-6.0
	Adult status	94,800	85.3	82.0-88.5	16,400	14.7	11.5-18.0	12,300	11.1	7.9-14.2	4,000	3.7[E]	2.0-5.3
	Child status	101,600	92.1	89.5-94.8	8,700	7.9	5.2-10.5	7,500	6.8[E]	4.3-9.3	F	F	F
Households without children	Household status	223,000	85.6	81.5-89.6	37,600	14.4	10.4-18.5	23,300	9.0	6.2-11.7	F	F	F

Table E.2 Income-related household food security status, Canadian provinces, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
New Brunswick													
All households	Household status	262,300	89.8	87.7-91.8	29,900	10.2	8.2-12.3	21,600	7.4	5.6-9.2	8,300	2.8[E]	1.6-4.1
	Adult status	264,100	89.9	87.9-91.9	29,700	10.1	8.1-12.1	21,000	7.1	5.4-8.9	8,700	3.0[E]	1.7-4.3
	Child status	77,900	93.1	90.8-95.5	5,700	6.9[E]	4.6-9.2	5,400	6.5	4.2-8.8	F	F	F
Households with children	Household status	73,400	87.8	84.6-91.0	10,200	12.2	9.0-15.4	7,100	8.5	5.8-11.3	F	F	F
	Adult status	75,200	88.3	85.1-91.5	10,000	11.8	8.6-15.0	6,500	7.7	5.2-10.2	F	F	F
	Child status	77,900	93.1	90.8-95.5	5,700	6.9[E]	4.6-9.2	5,400	6.5	4.2-8.8	F	F	F
Households without children	Household status	188,900	90.6	88.1-93.0	19,700	9.5	7.0-11.9	14,400	6.9[E]	4.6-9.2	F	F	F
Quebec													
All households	Household status	2,870,400	91.4	90.0-92.9	269,000	8.6	7.1-10.0	192,800	6.1	4.9-7.4	76,200	2.4[E]	1.6-3.3
	Adult status	2,877,300	91.6	90.2-93.1	263,600	8.4	6.9-9.8	188,600	6.0	4.7-7.3	75,000	2.4[E]	1.6-3.2
	Child status	859,800	95.9	94.5-97.2	37,200	4.2	2.8-5.5	35,500	4.0[E]	2.7-5.3	F	F	F
Households with children	Household status	827,900	92.3	90.6-94.0	69,100	7.7	6.0-9.4	57,100	6.4	4.8-8.0	12,000	1.3[E]	0.6-2.1
	Adult status	834,800	92.9	91.3-94.6	63,600	7.7	6.0-9.4	52,800	6.4	4.8-8.0	F	F	F
	Child status	859,800	95.9	94.5-97.2	37,200	4.2	2.8-5.5	35,500	4.0[E]	2.7-5.3	F	F	F
Households without children	Household status	2,042,400	91.1	89.2-93.0	200,000	8.9	7.0-10.8	1,358,000	6.1	4.4-7.7	64,200	2.9[E]	1.7-4.0
Ontario													
All households	Household status	4,163,200	91.7	90.8-92.5	379,100	8.4	7.5-9.2	255,700	5.6	5.0-6.3	123,400	2.7	2.2-3.2
	Adult status	4,178,600	91.9	91.0-92.7	370,600	8.2	7.3-9.0	247,900	5.5	4.8-6.1	122,700	2.7	2.2-3.2
	Child status	1,507,800	95.1	94.2-96.0	77,900	4.9	4.0-5.8	73,000	4.6	3.7-5.5	F	F	F
Households with children	Household status	1,427,900	90.1	88.9-91.2	157,800	10.0	8.8-11.1	123,800	7.8	6.7-8.9	34,000	2.1	1.5-2.8
	Adult status	1,443,300	90.6	89.4-91.8	149,300	9.4	8.2-10.6	116,100	7.3	6.2-8.4	33,200	2.1	1.5-2.8
	Child status	1,507,800	95.1	94.2-96.0	77,900	4.9	4.0-5.8	73,000	4.6	3.7-5.5	F	F	F
Households without children	Household status	2,735,300	92.5	91.4-93.6	221,300	7.5	6.4-8.6	131,800	4.5	3.7-5.3	89,400	3.0	2.3-3.7

Table E.2 Income-related household food security status, Canadian provinces, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Manitoba													
All households	Household status	399,000	90.6	89.2-91.9	41,500	9.4	8.1-10.8	29,800	6.8	5.7-7.8	11,700	2.7	1.9-3.4
	Adult status	400,200	90.8	89.5-92.2	40,500	9.2	7.8-10.6	29,100	6.6	5.6-7.7	11,400	2.6	1.8-3.3
	Child status	133,900	93.3	91.5-95.0	9,700	6.7	5.0-8.5	8,200	5.5	4.1-7.4	F	F	F
Households with children	Household status	125,200	87.3	85.0-89.6	18,200	12.7	10.4-15.0	13,900	9.7	7.8-11.5	4,400	3.1[E]	2.0-4.1
	Adult status	126,400	88.0	85.7-90.3	17,300	12.0	9.8-14.3	13,200	9.2	7.3-11.1	4,100	2.8	1.9-3.8
	Child status	133,900	93.3	91.5-95.0	9,700	6.7	5.0-8.5	8,200	5.5	4.1-7.4	F	F	F
Households without children	Household status	273,900	92.2	90.6-93.8	23,200	7.8	6.2-9.4	15,900	5.4	4.2-6.6	7,300	2.5[E]	1.5-3.5
Saskatchewan													
All households	Household status	344,100	91.9	90.2-93.6	30,300	8.1	6.4-9.8	19,400	5.2	4.0-6.4	10,800	2.9[E]	1.8-4.0
	Adult status	345,800	92.2	90.5-93.9	29,400	7.8	6.1-9.5	18,700	5.0	3.8-6.2	10,700	2.9[E]	1.8-4.0
	Child status	11,400	94.7	92.4-97.0	6,300	5.3[E]	3.0-7.6	5,400	4.5[E]	2.4-6.6	F	F	F
Households with children	Household status	109,400	90.9	88.5-93.3	11,000	9.1	6.7-11.5	8,600	7.2	5.2-9.2	F	F	F
	Adult status	111,100	91.6	89.4-93.9	10,100	8.4	6.1-10.7	7,900	6.5	4.7-8.4	F	F	F
	Child status	114,000	94.7	92.4-97.0	6,300	5.3[E]	3.0-7.6	5,400	4.5[E]	2.4-6.6	F	F	F
Households without children	Household status	234,700	92.4	90.3-94.6	19,300	7.6	5.5-9.7	10,800	4.3[E]	2.9-5.7	8,400	3.3[E]	1.8-4.8
Alberta													
All households	Household status	1,054,600	89.3	87.6-91.0	126,000	10.7	9.0-12.4	84,400	7.2	5.7-8.6	41,700	3.5	2.6-4.4
	Adult status	1,061,500	89.6	87.9-91.3	123,000	10.4	8.7-12.1	81,300	6.9	5.5-8.3	41,700	3.5	2.6-4.4
	Child status	386,100	94.3	92.8-95.9	23,200	5.7	4.1-7.2	22,200	5.4	3.9-7.0	F	F	F
Households with children	Household status	361,600	88.3	86.1-90.5	47,800	11.7	9.5-13.9	33,300	8.1	6.5-9.8	14,500	3.5[E]	2.2-4.9
	Adult status	368,400	89.2	87.0-91.4	44,400	10.8	8.6-13.1	30,200	7.3	5.7-9.0	14,500	3.5[E]	2.2-4.8
	Child status	386,100	94.3	92.8-95.9	23,200	5.7	4.1-7.2	22,200	5.4	3.9-7.0	F	F	F
Households without children	Household status	693,000	89.9	87.7-92.0	78,300	10.2	8.0-12.3	51,100	6.6	4.8-8.5	27,200	3.5[E]	2.3-4.7

Table E.2 Income-related household food security status, Canadian provinces, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
British Columbia													
All households	Household status	1,456,300	89.6	88.2-91.1	168,300	10.4	8.9-11.8	111,700	6.9	5.7-8.1	56,600	3.5	2.6-4.4
	Adult status	1,462,000	89.8	88.4-91.3	165,400	10.2	8.7-11.6	108,900	6.7	5.5-7.9	56,400	3.5	2.6-4.4
	Child status	487,000	93.6	91.7-95.5	33,400	6.4	4.5-8.3	31,200	6.0	4.1-7.9	F	F	F
Households with children	Household status	449,100	86.3	83.7-88.9	71,300	13.7	11.1-16.3	53,600	10.3	8.0-12.6	17,700	3.4[E]	2.1-4.7
	Adult status	454,800	86.9	84.3-89.6	68,400	13.1	10.4-15.7	50,900	9.7	7.3-12.1	17,500	3.4[E]	2.0-4.7
	Child status	487,000	93.6	91.7-95.5	33,400	6.4	4.5-8.3	31,200	6.0	4.1-7.9	F	F	F
Households without children	Household status	1,007,200	91.2	89.5-93.0	97,000	8.8	7.1-10.5	58,100	5.3	3.8-6.7	38,900	3.5[E]	2.4-4.7

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Legend:

n Weighted sample size, rounded to nearest 100

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

Footnotes:

1. First Nations reserves are not included.
2. Bootstrapping techniques were used to produce the coefficient of variation (CV) and 95% confidence intervals (CI).
3. "All food insecure" is the sum of moderately and severely food insecure. Results may not add up due to rounding.
4. Results for "All households" reflect the situation of all households (those with children and those without children).
5. Food secure households have food secure adults and children (if present). Moderately food insecure households have moderate food insecurity among either adults or children (if present). Severely food insecure households have severe food insecurity among either adults or children (if present). Households for which adult or child status was missing are not included in the household status estimates.
6. Results on "child status" were obtained from households with children only.
7. Children are defined as individuals younger than 18 years of age.

Table E.3 Income-related household food security status, by selected socio-demographic variables, Aboriginal population living off-reserve, 2004[1]

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Household type													
All households[4]	Household status[5]	132,200	66.7	62.5-74.9	66,300	33.3	29.1-37.5	37,700	19.0	16.1-21.8	28,600	14.4	10.8-17.9
	Adult status	135,500	68.0	63.8-72.2	63,800	32.0	27.8-36.2	35,800	18.0	15.1-20.9	28,000	14.1	10.6-17.5
	Child status[6]	76,200	76.9	71.4-82.3	22,900	23.1	17.7-28.6	20,200	20.4	15.3-25.4	F	F	F
Households with children[7]	Household status	60,800	61.2	55.4-67.0	38,500	38.8	33.0-44.6	26,100	26.3	21.7-30.9	12,400	12.5[E]	8.4-16.6
	Adult status	63,300	63.8	58.1-69.5	36,000	36.2	30.6-41.9	24,200	24.3	19.8-28.9	11,800	11.9[E]	7.9-15.9
	Child status	76,200	76.9	71.4-82.3	22,900	23.1	17.7-28.6	20,200	20.4	15.3-25.4	F	F	F
Households without children	Household status	72,200	72.2	65.8-78.6	27,800	27.8	21.5-34.2	11,600	11.6	8.1-15.2	16,200	16.2[E]	10.4-22.0
Household income adequacy													
Lowest	Household status	7,800	30.8[E]	19.9-41.7	17,600	69.2	58.3-80.1	5,900	23.3[E]	14.1-32.4	11,700	45.9	33.0-58.9
	Adult status	8,100	32.0[E]	21.0-43.0	17,200	68.0	57.0-79.0	5,600	22.0[E]	13.1-31.0	11,700	45.9	33.0-58.9
	Child status	6,000	62.5	44.5-80.5	3,600	37.5[E]	19.5-55.5	2,700	27.7[E]	10.3-45.0	F	F	F
Lower middle	Household status	13,100	35.8	25.9-45.7	23,500	64.2	54.3-74.1	12,900	35.3	26.0-44.6	10,600	28.9[E]	18.3-39.5
	Adult status	14,400	39.5	30.1-48.9	22,100	60.5	51.1-69.9	12,100	33.2	24.9-41.5	10,000	27.3[E]	17.0-37.5
	Child status	11,300	47.6	34.6-60.6	12,400	52.4	39.4-65.4	10,900	46.1	33.0-59.2	F	F	F
Middle	Household status	31,700	68.1	60.6-75.7	14,800	31.9	24.3-39.4	11,300	24.3	17.4-31.3	F	F	F
	Adult status	32,100	69.1	61.7-76.5	14,400	30.9	23.5-38.3	10,900	23.4	16.5-30.2	F	F	F
	Child status	20,600	82.5	75.4-89.7	4,400	17.5[E]	10.3-24.6	4,300	17.1[E]	9.9-24.2	F	F	F
Upper middle	Household status	45,600	90.4	86.1-94.6	4,900	9.7[E]	5.4-13.9	F	F	F	F	F	F
	Adult status	45,900	90.9	86.7-95.0	4,600	9.1[E]	5.0-13.3	F	F	F	F	F	F
	Child status	23,200	95.6	92.1-99.8	F	F	F	F	F	F	F	F	F
Highest	Household status	27,500	93.8	89.1-98.5	F	F	F	F	F	F	F	F	F
	Adult status	27,500	94.0	89.4-98.7	F	F	F	F	F	F	F	F	F
	Child status	10,700	98.2	95.8-100.6	F	F	F	F	F	F	F	F	F
Not available	Household status	7,100	65.0	46.5-83.5	F	F	F	F	F	F	F	F	F
	Adult status	7,400	66.6	48.2-84.9	F	F	F	F	F	F	F	F	F
	Child status	4,400	76.4	61.6-91.1	F	F	F	F	F	F	F	F	F

Table E.3 Income-related household food security status, by selected socio-demographic variables, Aboriginal population living off-reserve, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Main source of household income													
Salary / Wages	Household status	95,200	78.2	73.9-82.5	26,500	21.8	17.5-26.1	18,400	15.1	11.7-18.6	8,100	6.7[E]	3.8-9.5
	Adult status	96,100	78.9	74.6-83.1	25,800	21.1	16.9-25.4	17,700	14.5	11.1-17.9	8,100	6.7[E]	3.8-9.5
	Child status	60,400	89.9	86.4-93.4	6,800	10.1[E]	6.7-13.6	6,500	9.7[E]	6.3-13.1	F	F	F
Social assistance	Household status	11,300	32.3[E]	19.5-45.1	23,800	67.7	54.9-80.5	10,900	30.9	20.9-40.9	12,900	36.8[E]	24.5-49.2
	Adult status	12,800	36.4[E]	23.2-49.6	22,300	63.6	50.5-76.8	10,000	28.5	19.5-37.5	12,300	35.1[E]	23.1-47.1
	Child status	7,400	42.3[E]	27.4-57.1	10,100	57.8	42.9-72.6	8,100	46.0	32.1-59.9	F	F	F
Worker's compensation / Employment insurance	Household status	F	F	F	F	F	F	F	F	F	F	F	F
	Adult status	F	F	F	F	F	F	F	F	F	F	F	F
	Child status	F	F	F	F	F	F	F	F	F	F	F	F
Pensions / Seniors' benefits	Household status	16,000	75.3	64.8-85.8	F	F	F	F	F	F	F	F	F
	Adult status	16,100	75.6	65.1-86.0	F	F	F	F	F	F	F	F	F
	Child status	F	F	F	F	F	F	F	F	F	F	F	F
Other	Household status	3,600	33.4[E]	18.1-48.6	7,200	66.6	51.4-81.9	3,300	30.3[E]	16.4-44.2	3,900	36.3[E]	20.0-52.7
	Adult status	4,000	36.5[E]	20.8-52.1	6,900	63.5	47.9-79.2	3,000	27.5[E]	13.9-41.2	3,900	36.0[E]	19.9-52.2
	Child status	3,100	45.3[E]	29.5-61.1	F	F	F	F	F	F	F	F	F
Highest level of education in household													
Less than secondary school graduation	Household status	30,000	55.8	46.0-65.5	23,800	44.3	34.5-54.0	11,400	21.2	14.5-27.9	12,400	23.0[E]	15.0-31.1
	Adult status	31,500	58.5	49.1-67.9	22,400	41.5	32.2-50.9	10,000	18.5	12.7-24.2	12,400	23.0[E]	15.0-31.1
	Child status	14,100	63.0	46.4-79.5	8,300	37.1[E]	20.5-53.6	6,800	30.1[E]	14.5-45.6	F	F	F
Secondary school graduation	Household status	17,500	57.5	46.4-68.6	12,900	42.5	31.4-53.6	8,600	28.4[E]	18.6-38.2	F	F	F
	Adult status	17,900	58.9	47.7-70.0	12,500	41.1	30.0-52.3	8,200	27.1[E]	17.4-36.7	F	F	F
	Child status	11,700	79.8	69.5-90.1	3,000	20.2[E]	9.9-30.6	F	F	F	F	F	F
Some post-secondary education	Household status	15,300	57.9	44.8-71.0	11,100	42.1	29.0-55.3	6,700	25.4[E]	14.9-35.9	F	F	F
	Adult status	15,300	58.1	45.0-71.2	11,100	41.9	28.8-55.0	6,700	25.2[E]	14.7-35.7	F	F	F
	Child status	10,100	69.3	51.2-87.3	F	F	F	F	F	F	F	F	F
Post-secondary graduation	Household status	66,600	79.1	74.6-83.7	22,000	20.9	16.3-25.4	10,300	12.3	8.9-15.6	7,200	8.6[E]	5.1-12.0
	Adult status	67,300	79.9	75.5-84.4	16,900	20.1	15.6-24.5	10,000	11.9	8.6-15.2	6,900	8.2[E]	5.0-11.4
	Child status	37,900	85.2	80.4-90.0	6,600	14.8	10.0-19.6	5,900	13.2[E]	8.7-17.7	F	F	F

Table E.3 Income-related household food security status, by selected socio-demographic variables, Aboriginal population living off-reserve, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Home ownership													
Own dwelling	Household status	80,200	84.2	80.3-88.0	15,100	15.8	12.0-19.7	11,600	12.2	9.1-15.3	F	F	F
	Adult status	81,700	85.6	81.7-89.5	13,700	14.4	10.5-18.3	10,200	10.7	7.4-14.1	F	F	F
	Child status	42,500	88.7	82.7-94.7	5,200	11.3[E]	5.3-17.3	4,800	10.0[E]	4.2-15.8	F	F	F
Do not own dwelling	Household status	52,200	50.5	43.9-57.1	51,200	49.5	43.0-56.1	26,100	25.3	20.6-29.9	25,100	24.3	18.2-30.3
	Adult status	53,500	51.7	45.0-58.3	50,100	48.3	41.7-55.0	25,600	24.7	20.1-29.3	24,500	23.7	17.7-29.6
	Child status	33,600	65.8	58.5-73.1	17,500	34.2	26.9-41.6	15,400	30.1	23.0-37.2	F	F	F
Area of residence													
Urban	Household status	96,300	63.8	58.7-68.9	54,700	36.2	31.1-41.3	29,400	19.4	16.0-22.9	25,300	16.8	12.5-21.0
	Adult status	99,000	65.5	60.4-70.6	52,200	34.5	29.4-39.6	27,500	18.2	14.8-21.5	24,700	16.4	12.2-20.5
	Child status	57,300	76.2	70.6-81.9	17,900	23.8	18.1-29.4	15,800	21.1	15.8-26.3	F	F	F
Rural	Household status	36,400	75.7	97.9-83.6	11,700	24.3	16.4-32.1	8,400	17.5[E]	11.1-23.8	F	F	F
	Adult status	36,500	75.9	68.0-83.8	11,600	24.1[E]	16.2-32.0	8,300	17.3[E]	10.9-23.7	F	F	F
	Child status	18,800	78.9	65.9-91.9	5,000	21.1[E]	8.1-34.2	F	F	F	F	F	F
Households with children													
Presence of young child(ren)													
With children <6 years	Household status	28,100	57.3	48.0-66.5	21,000	42.8	33.5-52.0	14,700	29.9	22.8-37.1	6,300	12.8[E]	6.9-18.7
	Adult status	28,900	58.7	49.6-67.9	20,300	41.3	32.2-50.4	14,400	29.2	22.1-36.3	6,000	12.1[E]	6.4-17.8
	Child status	37,200	75.7	68.2-83.1	12,000	24.3	16.9-31.8	10,400	21.1	14.3-27.9	F	F	F
No children <6 years	Household status	32,400	64.9	57.2-72.7	17,500	35.1	27.3-42.8	11,400	22.8	16.7-29.0	6,100	12.2[E]	6.5-18.0
	Adult status	34,400	68.7	61.6-75.9	15,700	31.3	24.1-38.4	9,800	19.6	14.1-25.0	5,900	11.7[E]	6.0-17.3
	Child status	39,000	78.1	70.6-85.5	11,000	22.0[E]	14.5-29.4	9,800	19.7[E]	12.3-27.0	F	F	F
Number of children													
With 1 or 2 children	Household status	46,800	66.1	59.6-72.6	24,000	33.9	27.4-40.4	15,700	22.2	16.8-27.6	8,300	11.7[E]	7.3-16.1
	Adult status	48,100	67.9	61.5-74.2	22,800	32.2	25.8-38.5	15,100	21.3	16.0-26.6	7,700	10.8[E]	6.6-15.0
	Child status	57,100	80.7	75.6-85.8	13,700	19.3	14.2-24.4	12,000	16.9	1.3-21.6	F	F	F
With ≥3 children	Household status	13,800	48.6	39.1-58.2	14,600	51.4	41.8-60.9	10,400	36.8	28.8-44.7	F	F	F
	Adult status	15,200	53.6	43.5-63.6	13,200	46.4	36.4-56.5	9,000	31.8	23.7-40.0	F	F	F
	Child status	19,100	67.4	56.4-78.3	9,300	32.6[E]	21.7-43.6	8,200	29.0[E]	18.0-39.9	F	F	F

Table E.3 Income-related household food security status, by selected socio-demographic variables, Aboriginal population living off-reserve, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Household type													
All couple-led households	Household status	39,500	72.5	65.3-79.7	15,000	27.5	20.4-34.7	11,200	20.6	14.4-26.8	F	F	F
	Adult status	40,400	73.9	66.9-80.9	14,300	26.1	19.1-33.1	10,900	19.9	13.8-26.0	F	F	F
	Child status	44,400	81.4	74.8-88.0	10,100	18.6[E]	12.0-25.2	9,700	17.8[E]	11.3-24.2	F	F	F
Couple-led, no others	Household status	33,700	74.1	66.6-81.7	11,700	25.9	18.3-33.5	8,300	18.3[E]	12.3-24.4	F	F	F
	Adult status	34,300	75.2	67.8-82.6	11,300	24.8	17.4-32.2	8,200	18.1[E]	12.1-24.0	F	F	F
	Child status	37,200	81.8	74.7-88.9	8,300	18.2[E]	11.1-25.3	7,800	17.2[E]	10.3-24.1	F	F	F
Couple-led, with others	Household status	5,800	64.2	49.1-79.2	F	F	F	F	F	F	F	F	F
	Adult status	6,100	67.1	52.2-82.0	F	F	F	F	F	F	F	F	F
	Child status	7,200	79.3	66.9-91.8	F	F	F	F	F	F	F	F	F
All lone-parent households	Household status	19,000	47.2	37.6-56.9	21,200	52.8	43.2-62.4	12,900	32.0	23.2-40.9	8,300	20.7[E]	13.3-28.1
	Adult status	20,800	51.7	42.1-61.2	19,400	48.4	38.8-57.9	11,400	28.3	19.8-36.7	8,100	20.1[E]	12.8-27.4
	Child status	28,100	69.9	61.6-78.3	12,100	30.1	21.8-38.4	9,800	24.4[E]	16.4-32.4	F	F	F
Female lone-parent households	Household status	17,200	46.9	37.4-56.4	21,300	53.1	43.7-62.6	11,100	30.4	22.0-38.9	8,300	22.7[E]	14.6-30.8
	Adult status	18,000	49.3	39.7-58.9	18,600	50.7	41.1-60.3	10,500	28.7	20.2-37.2	8,000	22.0[E]	14.1-29.9
	Child status	25,500	69.5	61.8-77.3	11,200	30.5	22.7-38.2	8,900	24.2	17.0-31.5	F	F	F
Male lone-parent households	Household status	F	F	F	F	F	F	F	F	F	F	F	F
	Adult status	F	F	F	F	F	F	F	F	F	F	F	F
	Child status	F	F	F	F	F	F	F	F	F	F	F	F
Other households	Household status	F	F	F	F	F	F	F	F	F	F	F	F
	Adult status	F	F	F	F	F	F	F	F	F	F	F	F
	Child status	F	F	F	F	F	F	F	F	F	F	F	F

Table E.3 **Income-related household food security status, by selected socio-demographic variables, Aboriginal population living off-reserve, 2004[1]** ***(continued)***

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Households without children													
Household type													
All couple households	Household status	33,400	88.5	80.4-96.6	F	F	F	F	F	F	F	F	F
Couple, no others	Household status	27,200	93.4	89.1-97.8	F	F	F	F	F	F	F	F	F
Couple, with others	Household status	6,200	72.0[E]	46.1-98.0	F	F	F	F	F	F	F	F	F
Unattached individual, no others (All households)	Household status	28,300	59.6	50.6-86.7	19,200	40.4	31.3-49.4	7,700	16.2[E]	10.2-22.2	11,500	24.2[E]	15.2-33.2
Unattached female, no others	Household status	17,000	60.5	50.0-71.0	11,100	39.5	29.0-50.1	F	F	F	F	F	F
Unattached male, no others	Household status	11,300	58.4	42.6-74.2	8,000	41.6[E]	25.8-57.4	F	F	F	F	F	F
Other households	Household status	10,300	70.5	56.2-84.9	F	F	F	F	F	F	F	F	F

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Household Weights

Legend:

n Weighted sample size, rounded to nearest 100

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

Footnotes:

1. Territories and First Nations reserves are not included.
2. Bootstrapping techniques were used to produce the coefficient of variation (CV) and 95% confidence intervals (CI).
3. "All food insecure" is the sum of moderately and severely food insecure. Results may not add up due to rounding.
4. Results for "All households" reflect the situation of all households (those with children and those without children).
5. Food secure households have food secure adults and children (if present). Moderately food insecure households have moderate food insecurity among either adults or children (if present). Severely food insecure households have severe food insecurity among either adults or children (if present). Households for which adult or child status was missing are not included in the household status estimates.
6. Results on "child status" were obtained from households with children only.
7. Children are defined as individuals younger than 18 years of age.

Table E.4 Number of Canadians living in households by income-related household food security status, by household type, Canada, Aboriginal sub-population living off-reserve and Canadian provinces, 2004[1]

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Canada													
All households[4]	Household status[5]	28,176,100	91.2	90.6-91.8	2,718,200	8.8	8.2-9.4	1,988,200	6.4	5.9-7.0	730,000	2.4	2.1-2.7
	Adult status	28,355,700	91.5	90.9-92.1	2,637,200	8.5	7.9-9.1	1,916,200	6.2	5.6-6.8	721,000	2.3	2.0-2.6
	Child status[6]	14,536,300	94.9	94.2-95.7	777,200	5.1	4.3-5.8	729,500	4.8	4.0-5.5	47,700	0.3[E]	0.2-0.4
Households with children[7]	Household status	13,737,200	89.8	88.8-90.7	1,569,500	10.3	9.3-11.2	1,230,100	8.0	7.1-9.0	339,400	2.2	1.8-2.7
	Adult status	13,916,900	90.3	89.4-91.3	1,488,500	9.7	8.7-10.6	1,158,100	7.5	6.6-8.4	330,300	2.1	1.7-2.6
	Child status	14,536,300	94.9	94.2-95.7	777,200	5.1	4.3-5.8	729,500	4.8	4.0-5.5	47,700	0.3[E]	0.2-0.4
Households without children	Household status	14,438,800	92.6	91.9-93.4	1,148,700	7.4	6.6-8.1	758,100	4.9	4.2-5.5	390,600	2.5	2.1-2.9
Aboriginal sub-population													
All households	Household status	387,200	67.1	62.4-71.9	189,600	32.9	28.2-37.6	121,400	21.1	17.5-24.6	68,200	11.8	8.3-15.3
	Adult status	396,600	68.7	64.1-73.4	180,600	31.3	26.6-36.0	113,600	19.7	16.2-23.2	66,900	11.6	8.2-15.0
	Child status	285,100	77.3	71.2-83.4	83,700	22.7	16.6-28.8	76,000	20.6	14.8-26.4	F	F	F
Households with children	Household status	226,300	61.4	55.2-67.5	142,400	38.6	32.5-44.8	102,300	27.8	22.7-32.8	40,100	10.9[E]	6.9-14.8
	Adult status	235,600	63.9	57.9-69.8	133,400	36.2	30.2-42.1	94,600	25.6	20.7-30.6	38,800	10.5[E]	6.7-14.4
	Child status	285,100	77.3	71.2-83.4	83,700	22.7	16.6-28.8	76,000	20.6	14.8-26.4	F	F	F
Households without children	Household status	160,900	77.3	70.6-84.0	47,200	22.7	16.0-29.4	19,000	9.2[E]	6.0-12.3	28,100	13.5[E]	7.4-19.7
Provinces													
Newfoundland and Labrador													
All households	Household status	452,800	89.9	87.4-92.4	51,000	10.1	7.6-12.6	41,600	8.3	5.9-10.6	9,400	1.9[E]	1.2-2.5
	Adult status	461,200	90.3	87.8-92.7	49,800	9.8	7.3-12.2	40,500	7.9	5.7-10.2	9,300	1.8[E]	1.2-2.5
	Child status	240,400	94.3	92.0-96.5	14,600	5.7[E]	3.5-8.0	12,300	4.8[E]	3.0-6.7	F	F	F
Households with children	Household status	224,200	87.9	84.2-91.7	30,800	12.1	8.3-15.9	24,600	9.7	6.2-13.2	F	F	F
	Adult status	232,700	88.7	85.1-92.4	29,600	11.3	7.6-14.9	23,600	9.0[E]	5.6-12.4	F	F	F
	Child status	240,400	94.3	92.0-96.5	14,600	5.7[E]	3.5-8.0	12,300	4.8[E]	3.0-6.7	F	F	F
Households without children	Household status	228,500	91.9	89.1-94.6	20,300	8.1[E]	5.4-10.9	16,900	6.8[E]	4.0-9.6	F	F	F

Table E.4 Number of Canadians living in households by income-related household food security status, by household type, Canada, Aboriginal sub-population living off-reserve and Canadian provinces, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Prince Edward Island													
All households	Household status	123,600	91.3	89.0-93.6	11,800	8.7	6.4-11.0	9,500	7.0	5.0-9.1	2,300	1.7[E]	0.8-2.6
	Adult status	123,800	91.3	89.0-93.6	11,800	8.7	6.5-11.0	9,600	7.1	5.0-9.1	2,300	1.7[E]	0.8-2.6
	Child status	59,700	96.1	94.0-98.2	F	F	F	F	F	F	F	F	F
Households with children	Household status	56,300	90.6	87.3-94.0	5,800	9.4[E]	6.0-12.7	4,800	7.7[E]	4.6-10.9	F	F	F
	Adult status	56,500	90.6	87.2-94.0	5,900	9.4[E]	6.0-12.8	4,900	7.8[E]	4.6-11.0	F	F	F
	Child status	59,700	96.1	94.0-98.2	F	F	F	F	F	F	F	F	F
Households without children	Household status	67,300	91.9	88.5-95.2	6,000	8.1[E]	4.8-11.5	4,700	6.4[E]	3.4-9.4	F	F	F
Nova Scotia													
All households	Household status	773,900	85.4	82.1-88.6	132,900	14.7	11.4-17.9	91,200	10.1	7.2-12.9	41,600	4.6[E]	2.9-6.3
	Adult status	776,600	85.4	82.2-88.7	132,400	14.6	11.3-17.8	94,300	10.4	7.5-13.3	38,100	4.2[E]	2.6-5.8
	Child status	362,800	89.6	84.7-94.4	42,300	10.4[E]	5.6-15.3	34,600	8.6[E]	4.1-13.0	F	F	F
Households with children	Household status	332,200	82.0	76.6-87.4	72,900	18.0	12.6-23.4	53,100	13.1[E]	7.9-18.3	19,800	4.9[E]	2.0-7.7
	Adult status	335,000	82.2	76.8-87.6	72,400	17.8	12.4-23.2	56,100	13.8[E]	8.4-19.2	16,200	4.0[E]	1.6-6.3
	Child status	362,800	89.6	84.7-94.4	42,300	10.4[E]	5.6-15.3	34,600	8.6[E]	4.1-13.0	F	F	F
Households without children	Household status	441,700	88.0	84.2-91.9	60,000	12.0	8.1-15.8	38,100	7.6[E]	5.0-10.2	F	F	F
New Brunswick													
All households	Household status	650,600	90.4	88.0-92.7	69,400	9.6	7.3-12.0	50,400	7.0	5.1-8.9	19,000	2.6[E]	1.3-4.0
	Adult status	658,700	90.7	88.4-92.9	68,000	9.4	7.2-11.6	46,500	6.4	4.7-8.1	21,500	3.0[E]	1.5-4.4
	Child status	289,600	91.5	87.9-95.0	27,000	8.5[E]	5.0-12.1	25,900	8.2[E]	4.7-11.7	F	F	F
Households with children	Household status	276,500	87.3	83.3-91.4	40,100	12.7	8.6-16.7	27,100	8.6[E]	5.3-11.9	F	F	F
	Adult status	284,600	88.1	84.1-92.0	38,600	12.0[E]	8.0-15.9	23,200	7.2[E]	4.3-10.0	F	F	F
	Child status	289,600	91.5	87.9-95.0	27,000	8.5[E]	5.0-12.1	25,900	8.2[E]	4.7-11.7	F	F	F
Households without children	Household status	374,100	92.7	90.6-94.9	29,300	7.3	5.2-9.4	23,300	5.8[E]	3.7-7.8	F	F	F

Table E.4 Number of Canadians living in households by income-related household food security status, by household type, Canada, Aboriginal sub-population living off-reserve and Canadian provinces, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Quebec													
All households	Household status	6,813,400	92.6	91.0-94.1	546,200	7.4	5.9-9.0	422,200	5.7	4.3-7.2	124,100	1.7[E]	1.1-2.3
	Adult status	6,831,200	92.8	91.2-94.3	530,800	7.2	5.7-8.8	411,100	5.6	4.1-7.1	119,700	1.6[E]	1.0-2.2
	Child status	3,089,900	96.1	94.4-97.8	125,300	3.9[E]	2.2-5.6	116,500	3.6[E]	2.0-5.3	F	F	F
Households with children	Household status	2,973,600	92.5	90.1-94.9	241,600	7.5	5.1-9.9	205,900	6.4[E]	4.1-8.7	35,600	1.1[E]	0.5-1.8
	Adult status	2,991,400	93.0	90.6-95.3	226,200	7.0[E]	4.7-9.4	194,900	6.1[E]	3.8-8.4	F	F	F
	Child status	3,089,900	96.1	94.4-97.8	125,300	3.9[E]	2.2-5.6	116,500	3.6[E]	2.0-5.3	F	F	F
Households without children	Household status	3,839,800	92.7	90.9-94.4	304,700	7.4	5.6-9.1	216,200	5.2	3.6-6.8	88,500	2.1[E]	1.2-3.1
Ontario													
All households	Household status	11,130,700	91.9	90.8-92.9	987,600	8.2	7.1-9.2	721,200	6.0	5.1-6.8	266,400	2.2	1.7-2.7
	Adult status	11,215,100	92.2	91.2-93.2	949,200	7.8	6.8-8.8	684,800	5.6	4.8-6.5	264,300	2.2	1.6-2.7
	Child status	6,174,800	95.5	94.4-96.5	291,800	4.5	3.5-5.6	278,100	4.3	3.3-5.3	F	F	F
Households with children	Household status	5,856,700	90.6	89.1-92.1	610,000	9.4	8.0-10.9	487,100	7.5	6.1-8.9	122,900	1.9[E]	1.2-2.7
	Adult status	5,941,100	91.2	89.8-92.7	571,600	8.8	7.3-10.3	450,700	6.9	5.6-8.3	120,800	1.9[E]	1.1-2.6
	Child status	6,174,800	95.5	94.4-96.5	291,800	4.5	3.5-5.6	278,100	4.3	3.3-5.3	F	F	F
Households without children	Household status	5,274,000	93.3	92.2-94.5	377,600	6.7	5.5-7.8	234,100	4.1	3.2-5.1	143,500	2.5	1.8-3.3
Manitoba													
All households	Household status	979,400	90.2	88.6-91.8	106,600	9.8	8.2-11.4	79,700	7.3	6.1-8.6	26,900	2.5[E]	1.7-3.3
	Adult status	982,900	90.5	88.9-92.1	103,400	9.5	7.9-11.1	77,000	7.1	5.8-8.4	26,400	2.4[E]	1.6-3.2
	Child status	489,300	92.6	89.8-95.4	39,200	7.4[E]	4.6-10.2	35,800	6.8[E]	4.0-9.5	F	F	F
Households with children	Household status	453,800	87.0	84.1-89.9	68,000	13.0	10.1-16.0	51,200	9.8	7.5-12.1	16,800	3.2[E]	1.8-4.7
	Adult status	457,300	87.6	84.7-90.5	64,800	12.4	9.5-15.3	48,500	9.3	7.0-11.6	16,300	3.1[E]	1.7-4.6
	Child status	489,300	92.6	89.8-95.4	39,200	7.4[E]	4.6-10.2	35,800	6.8[E]	4.0-9.5	F	F	F
Households without children	Household status	525,600	93.2	91.6-94.7	38,600	6.8	5.3-8.4	28,500	5.1	3.7-6.4	10,100	1.8[E]	1.0-2.5

Table E.4 Number of Canadians living in households by income-related household food security status, by household type, Canada, Aboriginal sub-population living off-reserve and Canadian provinces, 2004[1] *(continued)*

		Income-related food security status[2]											
		Food Secure			Food Insecure								
		All			All[3]			Moderate			Severe		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Saskatchewan													
All households	Household status	840,400	91.8	89.8-93.7	75,200	8.2	6.3-10.2	51,400	5.6	4.1-7.1	23,800	2.6[E]	1.4-3.8
	Adult status	853,600	92.4	90.5-94.2	70,500	7.6	5.8-9.5	47,400	5.1	3.8-6.5	23,100	2.5[E]	1.3-3.7
	Child status	431,600	94.6	92.0-97.2	24,700	5.4[E]	2.8-8.0	21,400	4.7[E]	2.3-7.1	F	F	F
Households with children	Household status	414,100	90.8	87.8-93.8	42,200	9.3	6.2-12.3	33,600	7.4[E]	4.8-9.9	F	F	F
	Adult status	427,300	91.9	89.2-94.7	37,600	8.1[E]	5.3-10.8	29,600	6.4[E]	4.2-8.6	F	F	F
	Child status	431,600	94.6	92.0-97.2	24,700	5.4[E]	2.8-8.0	21,400	4.7[E]	2.3-7.1	F	F	F
Households without children	Household status	426,300	92.8	90.5-95.1	33,000	7.2	4.9-9.5	17,800	3.9	2.6-5.1	15,200	3.3[E]	1.3-5.3
Alberta													
All households	Household status	2,773,500	89.8	87.9-91.7	316,600	10.3	8.3-12.2	220,400	7.1	5.5-8.8	96,200	3.1	2.2-4.0
	Adult status	2,797,900	90.2	88.3-92.1	305,700	9.9	8.0-11.8	209,500	6.8	5.1-8.4	96,200	3.1	2.2-4.0
	Child status	1,551,800	94.7	93.0-96.5	86,400	5.3[E]	3.6-7.0	83,600	5.1[E]	3.4-6.8	F	F	F
Households with children	Household status	1,450,500	88.6	85.8-91.3	187,600	11.5	8.7-14.2	130,900	8.0	5.6-10.3	56,800	3.5[E]	2.0-4.9
	Adult status	1,474,900	89.3	86.6-92.0	176,700	10.7	8.0-13.4	120,000	7.3	5.0-9.6	56,800	3.4[E]	2.0-4.9
	Child status	1,551,800	94.7	93.0-96.5	86,400	5.3[E]	3.6-7.0	83,600	5.1[E]	3.4-6.8	F	F	F
Households without children	Household status	1,323,000	91.1	88.7-93.5	129,000	8.9	6.5-11.3	89,500	6.2[E]	4.0-8.3	39,400	2.7[E]	1.6-3.8
British Columbia													
All households	Household status	3,637,800	89.6	87.7-91.6	420,900	10.4	8.4-12.3	300,600	7.4	5.6-9.2	120,300	3.0	2.2-3.8
	Adult status	3,654,700	89.8	87.9-91.7	415,500	10.2	8.3-12.2	295,400	7.3	5.4-9.1	120,100	3.0	2.1-3.8
	Child status	1,846,400	93.7	90.9-96.6	123,500	6.3[E]	3.4-9.1	118,900	6.0[E]	3.2-8.9	F	F	F
Households with children	Household status	1,699,200	86.3	82.6-90.0	270,600	13.7	10.0-17.4	211,800	10.8	7.3-14.2	58,800	3.0[E]	1.6-4.4
	Adult status	1,716,100	86.6	82.9-90.3	265,200	13.4	9.7-17.1	206,600	10.4[E]	7.0-13.9	58,600	3.0[E]	1.6-4.3
	Child status	1,846,400	93.7	90.9-96.6	123,500	6.3[E]	3.4-9.1	118,900	6.0[E]	3.2-8.9	F	F	F
Households without children	Household status	1,938,600	92.8	91.3-94.3	150,300	7.2	5.7-8.7	88,800	4.3	3.0-5.5	61,500	2.9[E]	1.9-4.0

Data source: Statistics Canada, Canadian Community Health Survey, Cycle 2.2, 2004 – Share File, Person Weights

Legend:

n Weighted sample size, rounded to nearest 100

E Data with a coefficient of variation (CV) from 16.6% to 33.3%; interpret with caution

F Data with a coefficient of variation (CV) greater than 33.3% or a cell size <30; data suppressed

Footnotes:

1. Territories and First Nations reserves are not included.
2. Bootstrapping techniques were used to produce the coefficient of variation (CV) and 95% confidence intervals (CI).
3. "All food insecure" is the sum of moderately and severely food insecure. Results may not add up due to rounding.
4. Results for "All households" reflect the situation of all households (those with children and those without children).
5. Food secure households have food secure adults and children (if present). Moderately food insecure households have moderate food insecurity among either adults or children (if present). Severely food insecure households have severe food insecurity among either adults or children (if present). Households for which adult or child status was missing are not included in the household status estimates.
6. Results on "child status" were obtained from households with children only.
7. Children are defined as individuals younger than 18 years of age.