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FOOD SECURITY

QANUILIRPITAA? 2017

Nunavik Inuit Health Survey

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RÉGIE RÉGIONALE DE LA SANTÉ ET DES SERVICES SOCIAUX DU NUNAVIK
NUNAVIK REGIONAL BOARD OF HEALTH AND SOCIAL SERVICES

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QANUILIRPITAA? 2017 HEALTH SURVEY

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In memory of Audrey Flemming and Linda Shipaluk

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1 BACKGROUND OF THE *QANUILIRPITAA?* 2017 HEALTH SURVEY

The *Qanuilirpitaa?* 2017 Health Survey is a major population health survey conducted in Nunavik that involved the collection, analysis and dissemination of information on the health status of Nunavimmiut. The last health survey conducted prior to it in Nunavik dated from 2004. Since then, no other surveys providing updated information on the health of this population had been carried out. Thus, in February 2014, the Board of Directors of the Nunavik Regional Board of Health and Social Services (NRBHSS) unanimously adopted a resolution to conduct a new health survey in all 14 Nunavik communities, in support of the Strategic Regional Plan.

The general objective of the 2017 health survey was to provide an up-to-date portrait of the health status of Nunavimmiut. It was also aimed at assessing trends and following up on the health and health determinants of adult participants since 2004, as well as evaluating the health status of Nunavik youth. This health survey has strived to move beyond traditional survey approaches so as to nurture the research capabilities and skills of Inuit and support the development and empowerment of communities.

Qanuilirpitaa? 2017 included four different components: 1) an adult component to document the mental and physical health status of adults in 2017 and to follow up on the adult cohort of 2004; 2) a youth component to establish a new cohort of Nunavimmiut aged 16 to 30 years old and to document their mental and physical health status; 3) a community component to establish the health profiles and assets of communities in a participatory research approach; and 4) a community mobilization project aimed at mobilizing communities and fostering their development.

This health survey relied on a high degree of partnership within Nunavik (Nunavik Regional Board of Health and Social Services (NRBHSS), Makivik Corporation, Kativik Regional Government (KRG), Kativik Ilisarniliriniq (KI), Avataq Cultural Institute, Qarjuit Youth Council, Inuulitsivik Health Centre, Ungava Tulattavik Health Centre), as well as between Nunavik, the Institut national de santé publique du Québec (INSPQ) and academic researchers from three Canadian universities: Université Laval, McGill University and Trent University. This approach followed the OCAP principles of Ownership, Control, Access and Possession (First Nations Information Governance Centre, 2007).[1] It also emphasized the following values and principles: empowerment and self-determination, respect, value, relevance and usefulness, trust, transparency, engagement, scientific rigour and a realistic approach.

TARGET POPULATION

The survey target population was all permanent Nunavik residents aged 16 years and over. Persons living full time in public institutions were not included in the survey. The most up-to-date beneficiaries register of all Inuit living in Nunavik, provided by the Makivik Corporation in spring 2017, was used to construct the main survey frame. According to this register, the population of Nunavik was 12 488 inhabitants spread out in 14 communities. The register allowed respondents to be selected on the basis of age, sex and coast of residence (Hudson coast and Ungava coast).

SURVEY FRAME

The survey used a stratified proportional model to select respondents. Stratification was conducted based on communities and age groups, given that one of the main objectives of the survey was to provide estimates for two subpopulations aged, respectively, 16 to 30 years and 31 years and over. In order to obtain precise estimates, the targeted sample size was 1 000 respondents in each age group. Assuming a 50% response rate, nearly 4 000 people were required to obtain the necessary sample size. From this pool, the number of individuals recruited from each community was proportionate to population size and took into account the number of days that the survey team would remain in each community – a situation that

1. OCAP® is a registered trademark of the First Nations Information Governance Centre (FNIGC).

imposed constraints on the number of participants that could be seen. Within each stratum, participants were randomly selected from the beneficiaries register. However, the individuals from the 2004 cohort, all 31 years old and over (representing approximately 700 individuals), were automatically included in the initial sample.

DATA COLLECTION

Data were collected from August 19, 2017 to October 5, 2017 in the 14 villages. The villages were reached by the *Amundsen*, a Canadian Coast Guard Icebreaker, and participants were invited on board the ship for data collection purposes.

Two recruitment teams travelled from one community to another before the ship's arrival. An Inuk assistant in each community helped: identify, contact and transport (if necessary) each participant; inform participants about the sampling and study procedures; obtain informed consent from participants (video) and fill in the identification sheet and sociodemographic questionnaire.

Data collection procedures for the survey included questionnaires, as well as clinical measurements. The survey duration was about four hours for each wave of participants, including their transportation to and from the ship. Unfortunately, this time frame was sometimes insufficient to complete the data collection process. This survey received ethical approval by the Comité d'éthique de la recherche du Centre Hospitalier Universitaire de Québec – Université Laval.

Aboard the ship, the survey questionnaires were administered by interviewers, many of whom were Inuit. Face-to-face interviews were conducted using a computer-assisted interviewing tool. If there were problems with the laptop connections, paper-form questionnaires were filled out. The questionnaires were administered in Inuktitut, English or French, according to the preference of the participants. Interviewers received training in administering the questionnaires prior to the start of the survey. The questionnaires were divided into five blocks: psychosocial interview (blocks 1 and 3), physical health and food security interview (block 2), food frequency questionnaire (block 4), and sociodemographic interview (block 5).

The survey also included a clinical component, with tests to document aspects of physical health, sampling of biological specimens (such as blood, oropharyngeal swabs, urine, stool, and vaginal swabs), spirometry, and an oral clinical exam. These sessions were supervised by a team comprised of nurses, respiratory therapists, dentists, dental hygienists and assistants, and laboratory technicians.

PARTICIPATION

There were a total of 1 326 participants, including 574 Nunavimmiut aged 16 to 30 years old and 752 Nunavimmiut aged 31 years and over, for total response rates of 30.7% and 41.5%, respectively. The participants' distribution between the two coasts (Ungava and Hudson) was similar. The distribution of men and women was unequal, with twice as many women (873) than men (453) participating in the survey. If the results obtained from this sample are to be inferred to the target population, survey weights must be used.

Overall, as compared to the 2004 survey, the response rate (i.e., the rate of participants over the total number of individuals on the sampling list) was lower than expected, especially among young people. This includes the refusal rate and especially a low contact rate. Several reasons might explain the low response rate, including the short time period available to contact individuals prior to the ship's arrival in the community and non-contact due to people being outside of the community or on the land. Nevertheless, among the individuals that were contacted (n = 1 661), the participation rate was satisfactory with an internal participation rate of 79.7% More details on the collection, processing and analysis of the data are given in the Methodological Report (Hamel, Hamel & Gagnon, 2020).

2 INTRODUCTION

The Inuit diet is comprised of both foods purchased from the store and those harvested or gathered from the land, sea and freshwaters of local and regional environments. Easily accessing foods and getting enough nutritious, safe and desired foods to eat on a daily basis is an increasing problem in many Inuit communities throughout Inuit Nunangat (CCA, 2014). In 2014, an assessment on Indigenous food security in northern Canada concluded that there was a crisis, and that this crisis represented a significant public health issue as it posed long-term implications for the health and well-being of Inuit communities (CCA, 2014).

"Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2002).

Adequate amounts of safe, healthy, nutritious and preferred food must first exist, and then individuals need the ability to access enough of these foods through appropriate and accepted means on a regular basis to be considered 'food secure'. While direct comparisons of food insecurity prevalence estimates between jurisdictions can be difficult as several studies have used slightly different tools in their assessments, the results available to date are nonetheless concerning. According to the last Inuit Health Survey conducted under the International Polar Year (IPY) in 2007-08 in Nunatsiavut, Nunavut and the Inuvialuit Settlement Region (ISR), sixty-two percent (62%) of Inuit households were reported to be food insecure (Huet et al., 2012). Using an abbreviated version of the same survey tool, the Aboriginal Peoples Survey (APS) identified that 52% of Inuit 25 years of age and older living in Inuit Nunangat, lived in food insecure households in 2012 (Arriagada, 2017). More recently, the 2017 version of that survey reported that 76% of Inuit aged 15 years and older were food insecure (ITK, 2021).

At the regional scale, these levels can range from a previously reported 22% of individuals living in food insecure households in Nunavik in 2004 (gathered using a unique one-question assessment tool; Blanchet and Rochette, 2008), to nearly 70% in Nunavut (using the same tool as that used in the IPY study; Furgal et al., 2012; Rosol et al., 2012) or more (e.g. 77% in both Nunavik and Nunavut in the 2017 Aboriginal Peoples Survey, ITK, 2021). Prevalence estimates at the community scale can vary significantly as well. Adopting a similar tool to that used in the IPY study mentioned above, levels as high as 84% food insecure have been identified in some Inuit communities in recent years (Furgal et al., 2017). These measures of the prevalence of food insecurity exist within a context where, in 2017-18, 11% of households were reported to be food insecure in the province of Quebec, and 13% in all of Canada (Tarasuk and Mitchell, 2020).

Challenges in accessing adequate amounts of safe, healthy, and preferred foods in many Inuit communities are common and contribute to several physical and mental health outcomes across an individuals' life span (Rosol et al., 2016; Mead et al., 2010, Egeland et al., 2009). Being food insecure has been associated with shorter stature, poorer nutritional status, and poorer mental health in Nunavik previously (Pirkle et al., 2014; Lamoureux-Tremblay et al., 2020). Severe and persistent food insecurity has also been shown to be associated with psychological distress (depression and withdrawn attitude) in adolescents in the region (Bradette-Laplante et al., 2020). Particularly during pregnancy and in early years of life, being food secure is critical (Duncan et al., 2018) and is a key determinant of Inuit health, as it is for other populations globally.

A current challenge in understanding and monitoring efforts towards progress on this issue exists in the diversity of tools used to generate prevalence estimates, as mentioned above, and the applicability of these tools to the Inuit food system (Teh et al., 2017). In addition to the challenges identified above, some skepticism exists regarding the accuracy and precision of some estimates in representing the true nature of Inuit food insecurity (Ready, 2016). For example, many previously generated estimates have been based on the United States Department of Agriculture (USDA) Household Food Security Survey Module (HFSSM) which assumes that challenges in accessing food are predominantly financially related and that the primary mode of accessing food is through purchase at a store (Teh et al., 2017; USDA, 2012). However,

significant amounts of food are accessed through different means in many Inuit households. First, Inuit diets are comprised of food items that come from both the land and the store. Secondly, food from the land is hunted, fished, or gathered in a variety of different ways or accessed through community support programs designed to increase opportunities for Nunavimmiut to consume country foods. Country foods may be received through sharing as well. While food from the store is purchased, it is also accessed via sharing between individuals and households. Further, a number of food support programs exist to facilitate easier access to store foods in the region. As a result of this diversity and complexity in the Inuit food system, direct interpretation of results of food insecurity statistics generated using tools focused solely on economic access, and direct comparisons with other jurisdictions using those tools have sometimes been challenging. The food security evaluation tool used in this survey is a modified version of the standardized USDA tool, as outlined in the section on *Methodological aspects.* Its use here allows for qualitative comparisons between this survey and others using the USDA tool or modified versions of that tool.

Inuit food security status is reported to be challenged by a number of social and environmental changes taking place both in communities, and on the land. They include the high costs and limited availability of healthy store foods, increasing costs and challenges of hunting and harvesting country foods, increasing population size in many communities, limited employment opportunities and low household incomes, changing dietary habits, limited awareness of culturally appropriate healthy eating options, and influences of climate-related changes and variability on key country food species' abundance, accessibility and quality for consumption (Beaumier et al., 2014; CCA, 2014; Ford and Pearce, 2012; Furgal et al., 2012; Guo et al., 2015; Hoover et al., 2017; Krummel, 2009; Lambden et al., 2006; Organ et al., 2014; Statham et al., 2014; Walch et al., 2018; Wenzel, 2009;). In response to the recognition of these challenges, many regions, including Nunavik, are in the process, or have already completed the development of regional strategies to address food insecurity (Fillion et al., 2014; Kenny et al., 2018; Organ et al., 2014; Wakegejig et al., 2013). Many programs and initiatives are already in place in Nunavik including the Hunter Support Program and the community freezers, the prenatal and postnatal food coupon program and local initiatives such as community kitchens, food centres or meal distribution initiatives. However, it is likely that the impact of these programs varies, and the characteristics of participants, their frequency of program use, and their food security status is not yet well understood (e.g. Gautier et al., 2016; Teh et al., 2017).

OBJECTIVES

- To document food insecurity status among Nunavimmiut aged 16 years and older using both the same method used in the 2004 *Qanuippitaa?* Inuit Health Survey and an adapted version of the USDA Household Food Security Survey Module;
- To document food preferences, coping strategies used when individuals could not gain access to enough food as well as food sharing behaviours among Nunavimmiut;
- To examine differences among groups and associations with key socio-demographic characteristics in Nunavik regarding food insecurity status, food preferences, coping strategies used and food sharing behaviours.

3 METHODOLOGICAL ASPECTS

STUDY POPULATION

A total of 1326 individuals participated in the data collection process onboard the CCGS Amundsen, and among them, 1295 (97.7%) responded to one or more questions in the physical health and food security interview (block 2). Response rates of block 2 participants on food security variables are provided in the following section.

FOOD SECURITY VARIABLES (BLOCK 2)

Food (in)security status

There are several approaches to assessing food (in)security status. Four different measurements are used in this report: a) Single-item Measure of Food (In)Security Status, b) 4-Point Scale, c) 3-Point Scale, and d) 2-Point Scale Food Insecurity Status. Measures generated using the 4-point scale are becoming recognized and most commonly used in Canada and elsewhere around the world. Questionnaires administered in the present survey are presented in appendix A.

a) Single-item measure of food (in) security status

The *Qanuilirpitaa?* 2017 survey asked the same food security question as was asked in *Qanuippitaa?* 2004: *"In the last month, did it happen that there was not enough to eat in your house?"*. A total of 1289 block 2 participants answered this question (99.5% response rate). Participants who responded 'yes' were classified as Food Insecure, and participants who responded 'no' were classified as Food Secure. This Single-Item Measure was used to compare food security prevalence in Nunavik between 2004 and 2017.

b) 4-point food (in)security status scale

The 4-point scale is based on a series of ten questions primarily concerning food access. The standardized USDA Household Food Security Survey module (USDA, 2012) was adapted for use in this survey in the following ways:

- questions were asked in the context of the 12 months prior to the survey, as is commonly used elsewhere, however they were asked at the individual scale because of the sampling strategy of this survey (rather than at the household scale used in the USDA tool);
- when speaking about "food", participants were told the survey was referring to any food that was consumed, whether store foods or country foods; and
- for all questions, the phrase "money to buy food" (as used in the USDA tool) was replaced with "resources to get food" when referring to how participants accessed foods.

Participants were informed that "resources to get food" might include money to buy food, equipment to go hunting/fishing/gathering, or relations/connections from whom one can get food when needed. This adaptation to the Nunavik context was made since the use of the USDA HFSSM has been critiqued in its application in Inuit and other Arctic Indigenous contexts because of its likely bias towards a focus only on the purchase of store food items (Teh, 2017). It is argued that the adaptations made to the tool for use in this survey created a more inclusive tool more likely to capture information from participants on their challenges in accessing either store food items or country foods, and via the various ways Nunavimmiut gain access to foods.

The questions addressed worry that individuals would run out of food before having the resources to get more, that they would need to cut down on meals size or skip meals, that they would eat less healthy foods, eat less overall, be hungry, or not eat for a whole day or lose weight, all due to a lack of sufficient resources to get food. To determine food (in)security status, affirmative answers were summed across the ten questions (after first applying the 'screening process' described in the next paragraph). If no responses were affirmative, an individual's status was categorized as

'Food Secure'. For a single affirmative response, the status was categorized as 'Marginally Food Insecure', which is indicative of whether an individual being worried they would run out of food before having resources to get more or having to eat a limited selection of foods. The 'Moderately Food Insecure' status was assigned if 2 to 5 responses were affirmative, and is indicative of an individual compromising the quality of food and sometimes also the quantity of food consumed. Those being assigned the 'Severely Food Insecure' status answered affirmatively to more than 5 questions, and were compromising the quality and quantity of food consumed. Block 2 participants with a missing response (don't know or no response) on one or more of the ten questions were excluded from the 4-point scale (4.8% excluded).

Since the ordering of the ten questions is assumed to reflect increasing severity of compromising food quality and quantity, many surveys employ a screening approach during data collection where participants who respond non-affirmatively to earlier questions are not asked later questions, as it is assumed their responses would have also been non-affirmative on those later questions. *Qanuilirpitaa?* 2017 participants, however, were asked all questions[2], which allows us to explore if this assumption holds true in the Nunavimmiut context (results not shown here). For consistency, we mimicked the screening process used in the Inuit Health Survey (2007-08) and Canadian Community Health surveys (Statistics Canada, 2020) by (re)coding certain questions as 'non-affirmative', where applicable, prior to summing affirmative responses. For example, responses to the last seven questions were (re) coded as non-affirmative for participants who responded non-affirmatively to the first three questions, even if they had answered one or more of the last seven questions affirmatively at the time of the survey.

c) 3-point food (in)security status scale

Food (in)security status based on the 3-point scale was determined in a similar[3] way as the 4-point scale, however, only three status categories are reported: 'Food Secure' (0 or 1 affirmatives), 'Moderately Food Insecure' (2 to 5 affirmatives), and 'Severely Food Insecure' (more than 5 affirmatives). The 3-point scale amalgamates the 'Food Secure' and 'Marginally Food Insecure' categories from the 4-point scale. Marginal food insecurity is gaining recognition as a valuable category to identify and consider as individuals that are identified as being "marginally food insecure" are deemed at high risk for soon being moderately or severely food insecure and some negative health outcomes have been associated with individuals living in marginally food insecure households (Cook et al., 2013). The 4-point scale is prioritized in this report, as in the most recent reporting of national food insecurity statistics in Canada (Tarasuk and Mitchell, 2020). Three-point scale calculations are provided and used for approximate comparisons with Nunatsiavut, Nunavut, and the Inuvialuit Settlement Region (ISR) 2007-08 Inuit Health Survey results which used that scale (Rosol et al., 2011).

d) 2-point food (in)security status scale

Food (in)security status based on the 2-point scale was determined in the same way as the 4-point scale, however, only two status categories are reported: Food Secure (0 affirmative responses) and Food Insecure (1 or more affirmative responses). The 2-point scale amalgamates the 'Marginally', 'Moderately', and 'Severely Food Insecure' statuses from the 4-point scale. Block 2 participants with a missing response (don't know or no response) on one or more of the ten questions were excluded from the 2-point scale (4.8% excluded). The 2-point scale was used when bivariate analyses were not possible with the 4-point scale due to one or more categories having a frequency of zero.

Food (in)security scale questions

The ten individual food security questions used in the calculation of the 4, 3, and 2-point scales were also examined on their own. The proportion of affirmative responses to each question allows for a more nuanced picture of food insecurity experiences in the region (i.e., what Nunavimmiut are experiencing because of a lack of access to food). The proportions for each question were calculated after having applied the 'screening approach' (see 4-Point Food (In)Security Scale above for details). Response rates ranged from 97.9% to 98.5% for the ten questions.

Food preference

The Food Preference variable reflects participants' responses to the question *"Which of the following represents your preference between store bought foods and country foods?"*. A total of 1293 block 2 participants answered this question (response rate of 99.8%).

2. The standard USDA survey consists of 8 questions. Two of the eight questions have conditional follow-up questions asking 'How often did this happen?'. If responding non-affirmatively to the first component of the question, the follow-up was not applicable and therefore not asked.

3. In order to more accurately compare with the 2007-08 Inuit Health Survey results, missing responses (i.e. don't know or no response) on the ten questions were imputed following the USDA imputation method (Nord and Hopwood, 2008) prior to summing the affirmative responses for the 3-point scale, as done by Rosol et al. (2011). All block 2 participants were therefore assigned a food (in)security status for the 3-point scale.

Food program use

Participants were asked whether they had used various food access programs at some point during the 12 months prior to the survey.[4] Estimated proportions of use are provided for each of the five listed programs separately, and for a composite variable assessing how many programs were used among participants who used at least one of them. Response rates ranged from 96.3% to 99.8% for the five programs and composite variables.

Coping strategies

Participants who reported that there had been times in the last month when there was not enough to eat in the house, or that they had gone a whole day without food in the last 12 months because there weren't resources to get food, were asked about their use of seven coping strategies (e.g. going to a friend or family member's house for food) for when there is not enough to eat in the house. Text responses to the 'other strategy, specify' question that could not be grouped under one of the listed strategies are provided in the results section. Estimated proportions of use are provided for each of the seven listed coping strategies separately, and for a composite variable assessing how many strategies were used among participants who used at least one of them. Among participants who were asked about their use of these seven coping strategies, response rates ranged from 98.7% to 99.6% for the seven strategies and composite variables.

Sharing food

Participants were asked how many households they had given food to (giving) and how many households they had received food from (receiving) in the 12 months prior to the survey. A composite sharing variable was created using the 'giving' and 'receiving' variables. Response rates for the giving, receiving, and composite sharing variables were 98.2%, 98.5%, and 97.7%, respectively.

4. Participants were also asked if they had used a non-listed food program in the preceding 12 months. All written responses reflected listed programs and were counted under the appropriate program(s), or did not reflect food programming and were ignored.

SUBPOPULATION VARIABLES USED IN BIVARIATE ANALYSES

Table 1 lists the subpopulation variables that were crossed with the food security variables during bivariate association analyses.

Table 1 List of Subpopulation Variables Used in Bivariate Analyses

Food Security Variable	Subpopulation Variables Used in Bivariate Analyses	Source of Subpopulation Variables[5]
Food (In)Security Status	ecological region, age group, sex, personal income, education, employment status, number of children in household, single-headed household, sex of single-headed household, transportation, time spent on the land, community size	SDI (block 5)
	pregnancy status during year before survey (pregnant, not pregnant women of childbearing age (49 years and under), women of non-childbearing age (50 years and older)	PSI (block 3) & SDI (block 5)
	hunting/fishing/harvesting, hunting difficulties (land species, marine species), food program use variables, coping strategies variables, sharing food variables, modified eating habits (beluga mattaaq, beluga meat, seal meat, seal liver, seal fat, other)	PHFSI (block 2)
Food (In)Security Questions	ecological region, age group, sex	SDI (block 5)
	pregnancy status during year before survey (pregnant, not pregnant women of childbearing age (49 years and under), women of non-childbearing age (50 years and older)	PSI (block 3) & SDI (block 5)
Food Preference	ecological region, age group, sex	SDI (block 5)
	pregnancy status during year before survey (pregnant, not pregnant women of childbearing age (49 years and under), women of non-childbearing age (50 years and older)	PSI (block 3)
Food Program Use	ecological region, age group, sex, women of childbearing age (under 45 years old)	SDI (block 5)
	pregnancy status during year before survey (pregnant, not pregnant women of childbearing age (49 years and under), women of non-childbearing age (50 years and older)	PSI (block 3) & SDI (block 5)
Coping Strategies	ecological region, age group, sex, women of childbearing age (under 45 years old), single-headed household, sex of single-headed household	SDI (block 5)
	pregnancy status during year before survey (pregnant, not pregnant women of childbearing age (49 years and under), women of non-childbearing age (50 years and older)	PSI (block 3) & SDI (block 5)
Sharing	ecological region, age group, sex	SDI (block 5)
	pregnancy status during year before survey (pregnant, not pregnant women of childbearing age (49 years and under), women of non-childbearing age (50 years and older)	PSI (block 3) & SDI (block 5)

SDI = sociodemographic interview; PSI = psychosocial interview; PHFSI = physical health and food security interview.

5. The following subpopulation variables were coded using two or more of the original survey questions: education, children in household, single-headed household, sex of single-headed household, time spent on the land, pregnancy status, hunting/fishing/harvesting, hunting difficulty (land species), hunting difficulty (marine species), composite food program use, composite coping strategies use, composite sharing.

STATISTICAL ANALYSES

Univariate and bivariate analyses were performed using SAS® Studio software, Version 3.8 (Cary, North Carolina, USA). Sampling weights were used to estimate population proportions, and replicate weights were used to estimate variance. The sampling weights took into account the sampling design, total non-response at both the time of recruitment and appointments on the ship, and post-stratification adjustments to ensure the sample was representative of the population on sex, age group, and ecological region (Hamel, Hamel, & Gagnon, 2020). Replicate weights were obtained via the balanced repeated replication method (Hamel, Hamel, & Gagnon, 2020). Partial non-response was deemed to have a negligible impact on biasing estimates (Hamel, Hamel, & Gagnon, 2020); available case analysis was therefore used for this report.

For each bivariate analysis, an adjusted chi-square test of association (second-order Rao-Scott chi-square test) was run to determine if an association between the two variables was statistically significant at the 0.05 alpha level. If significant, follow-up two-by-two adjusted chi-square tests were then run to see which specific groups had significantly different estimated proportions. For example, the overall association between ecological region and the 4-point food (in)security scale was significant, and two-by-two adjusted chi-square tests of association were used to see which of the three ecological regions differed from one another on their proportions of food security, marginal, moderate, and severe insecurity.

Coefficients of variation (CV) were calculated to assess the accuracy of estimates. Estimates with a CV less than 15% were considered acceptable. Estimates with a CV greater than 15% and less than or equal to 25% were considered 'marginally acceptable' and must be interpreted with caution due to the high sampling variability (indicated by a single asterisk (*) in tables and figures). Estimates with a CV greater than 25% are 'unacceptable' and are presented for illustrative purposes only and must be used with caution (indicated by a double asterisk (**) in tables and figures).

In order to evaluate whether there has been a change in food security prevalence in Nunavik between 2004 and 2017, age-adjusted proportions and standard errors of food security based on the Single-Item Measure of Food (In)Security were calculated for both *Qanuippitaa?* 2004 and *Qanuilirpitaa?* 2017. The direct age standardization method was used, with 2017 as the reference. A Wald test of the difference between the logit-transformed age-adjusted estimates was performed to assess statistical significance at the 0.05 level (Hamel, Hamel, & Gagnon, 2020). To help protect against an inflated Type I error rate, Bonferroni-adjusted alpha levels were first used, and then analyses with variables that had one or more categories that were significantly different between 2004 and 2017 were rerun using the 0.05 alpha level.

The 3-Point Food Security Scale was used to compare food security in Nunavik in 2017 with estimated food security in Nunatsiavut, Nunavut, and the ISR in 2007-08 (Inuit Health Survey). We could not obtain the necessary information to perform the direct age standardization method; the Wald test described above was run using unadjusted proportions and standard errors. Results for this section are described in the text only (no tables or figures) and should be interpreted with caution.

4 RESULTS

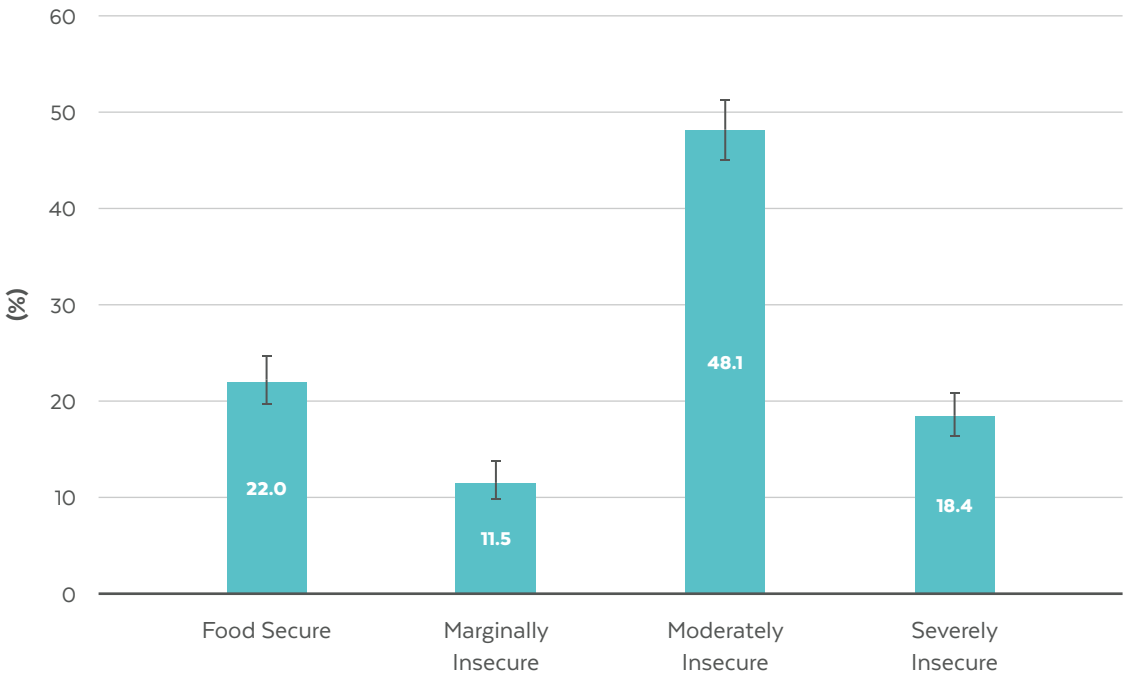
FOOD INSECURITY IN NUNAVIK

Prevalence

4-pt food security status in Nunavik

More than three-quarters of Nunavimmiut (78%) reported experiencing some level of food insecurity in the year prior to the survey (Figure 1). Just over 1 in 10 reported worrying about their ability to get food on a regular basis (marginally food insecure), just under half reported having to compromise the quantity or quality of food they ate (moderately food insecure), and nearly 1 in 5 reported having to skip meals or go a full day without anything to eat because they did not have the resources to get food (severely food insecure).

Figure 1 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut, population aged 16 years and over, Nunavik, 2017



Food insecurity experiences: Responses to individual food insecurity questions

In addition to classifying Nunavimmiut as being food secure or marginally, moderately or severely food insecure, responses to individual questions in the survey (PHSFI Block 2) report significant experiences in limited food access (e.g., experiences of hunger) among Nunavimmiut. The frequency of responses to those individual questions are therefore presented below.

Table 2 presents the frequency (and 95% CI) of responses to the individual food security questions included in the survey. Noteworthy results include that 66% of Nunavimmiut sometimes or often reported to worry about their food running out before they could get more, greater than half (55%) were sometimes or often unable to eat healthy foods because they didn't have the resources to get food, and nearly one quarter (23%) reported hunger and did not have access to food. Around one quarter (26%) had to reduce the size of their meals or skip meals because they couldn't get more food, with more than 25% of these individuals experiencing this almost every month. Finally, more than 1 in 10 Nunavimmiut (12%) reported having to go a full day without eating because they did not have the resources to get more food, with 26% of these individuals reporting this occurred almost every month in the previous year (Table 2).

Table 2 Prevalence and 95-percent confidence intervals of responses to individual questions in the food security survey module among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

Individual Food Security Questions	%	95% CI	
Worried the food would run out			
Never	34.1	31.3	37.1
Sometimes	56.9	53.8	59.9
Often	9.0	7.2	11.0
Food in the house didn't last			
Never	37.1	34.2	40.0
Sometimes	54.7	51.7	57.8
Often	8.2	6.5	10.3
Not able to eat healthy food			
Never	45.1	42.2	48.1
Sometimes	47.0	44.1	49.9
Often	7.9	6.3	9.7
Had to cut the size or skip meals			
No	73.7	71.0	76.3
Yes (affirmative)	26.3	23.7	29.0
How often had to cut size or skip meals?$^{\phi}$			
Only every 1 or 2 months	27.9	22.4	34.2
Some months but not every month	45.5	39.1	52.0
Almost every month	26.6	21.7	32.2
Ate less than felt you should			
No	74.6	71.8	77.3
Yes	25.4	22.7	28.2
Was hungry but didn't eat			
No	76.8	74.0	79.4
Yes	23.2	20.6	26.0
Lost weight			
No	86.6	84.1	88.8
Yes	13.4	11.2	15.9
Did not eat for a whole day			
No	87.6	85.4	89.5
Yes (affirmative)	12.4	10.5	14.6
How often did not eat for whole day?$^{\phi}$			
Only every 1 or 2 months	22.8*	15.7	31.8
Some months but not every month	51.8	42.5	60.9
Almost every month	25.5*	18.1	34.5

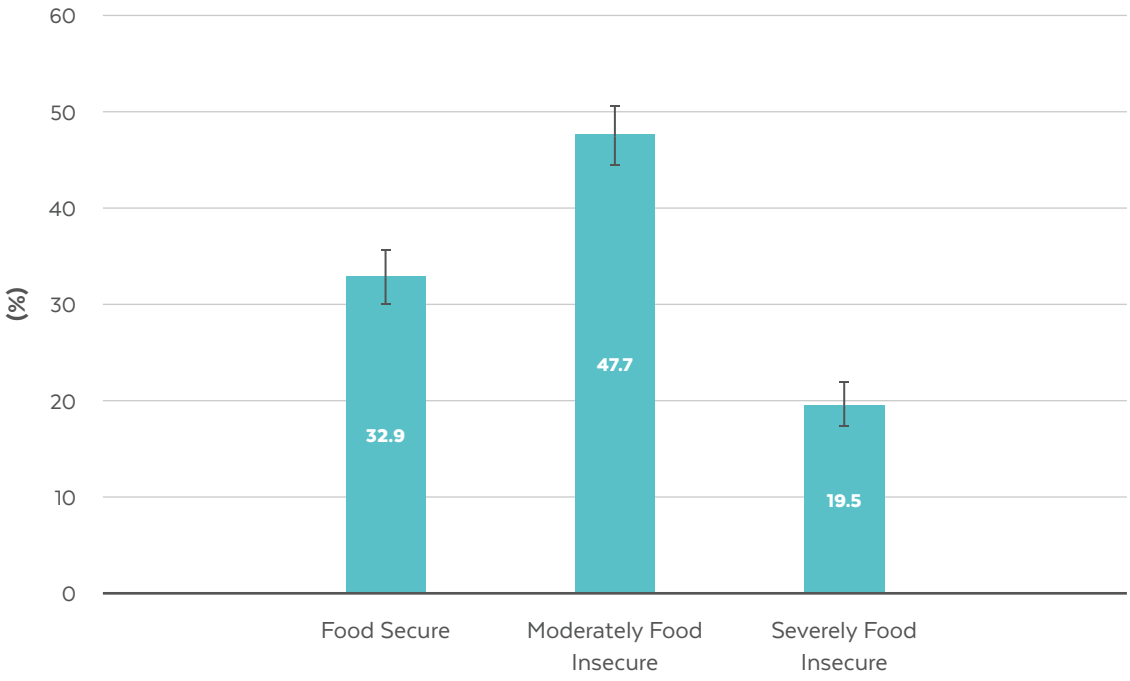
* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who had answered the preceding question affirmatively.

Comparisons of food insecurity status with other regions

A 3-point scale classification of food insecurity status using the modified USDA food insecurity questions adapted for this survey was generated following the same approach as used in the International Polar Year Inuit Health Survey in Nunavut, the Inuvialuit Settlement Region (ISR) and Nunatsiavut in 2007-08 (Rosol et al., 2011). In Nunavik, while 33% classified as food secure, 67% of Nunavimmiut reported having experienced some degree of food insecurity in the year prior to the 2017 survey with just under half (48%) having to compromise the quality or quantity of food they ate (moderately food insecure) and 1 in 5 (20%) having to compromise the quality and quantity of food they ate (severely food insecure; Figure 2).

Figure 2 Prevalence and 95-percent confidence intervals of 3-point food security status among Nunavimmiut, population aged 16 years and over, Nunavik, 2017



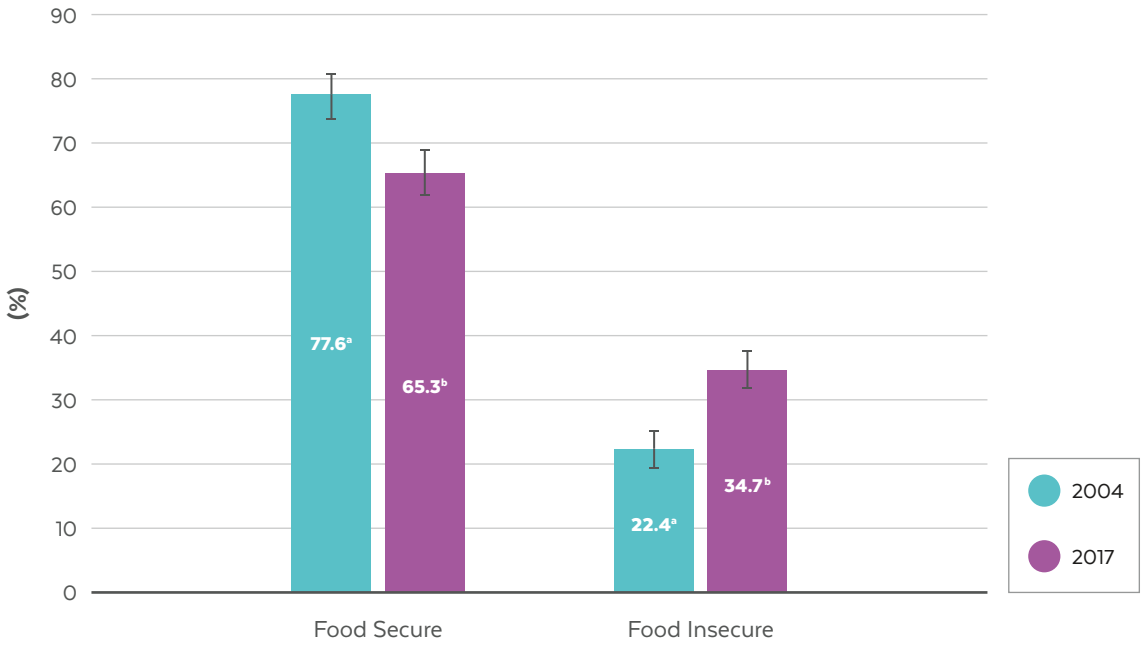
The prevalence of food insecurity in Nunavik in 2017 (67%) seems comparable to that measured among adults in Nunavut in the 2007-08 Inuit Health Survey (68%), and appears to be higher than that reported in the ISR (43%) and Nunatsiavut (46%) in the 2007-08 Inuit Health Survey (Rosol et al., 2011). However, a greater proportion of Nunavimmiut tended to be classified as moderately food insecure in 2017 (48%) as compared to adults in the other regions in 2007-08 (Nunavut: 36%, ISR: 31%, Nunatsiavut: 31%). Conversely, a greater proportion of Inuit in Nunavut (32%) tended to be classified as severely food insecure in 2007-08 compared to the other regions involved in that survey (ISR in 2007-08: 12%, Nunatsiavut in 2007-08: 15%), and compared to Nunavik in 2017 (20%). It should be noted that these comparisons are qualitative only rather than direct comparisons, given the slight differences in the food security tools used in the *Qanuippitaa?* 2017 survey and the 2007-08 Inuit Health Survey.

Similarly, the 2012 and 2017 Aboriginal Peoples Survey (Arriagada, 2017; ITK, 2021) used an abbreviated version of the USDA food security survey module, without the adaptations to questions made in the present survey. The APS found that, in Inuit Nunangat, 52% of Inuit 25 years of age and older lived in households that were classified as food insecure in 2012, and 76% of Inuit 15 years of age and older lived in those circumstances in 2017. In 2012, regional estimates indicated that 56% of individuals 25 years of age and older in Nunavut, 55% in Nunavik, 42% in Nunatsiavut and 33% in the ISR lived in food insecure households (Arriagada, 2017). More recently, in the 2017 version of this survey, it was reported that 77% of Inuit 15 years of age and older in Nunavik and Nunavut, 69% in the ISR and 68% in Nunatsiavut lived in food insecure homes (ITK, 2021).

Comparisons with *Qanuippitaa 2004?* results

The prevalence of Nunavimmiut reporting that there was a time when there was not enough to eat in their house in the month prior to the survey was greater in 2017 than in 2004 (Figure 3). Using this Single-Item Measure of Food (In) Security, significantly more individuals in 2017 (35%) versus 2004 (22%) were classified as being food insecure. Similar results to those obtained in 2004 were reported using this same question in the region in 1992 (Blanchet and Rochette, 2008). When compared to the questions used in the 3- and 4-point scale food insecurity classification schemes (Figures 1, 2, 3), an affirmative response to this question appears to represent a situation indicative of a respondent being moderately or perhaps, severely food insecure. While direct comparisons cannot be made because of the differences between these tools, this single item assessment appears to indicate that food insecurity was greater among Nunavimmiut in 2017 than 2004.

Figure 3 Prevalence and 95-percent confidence intervals of food insecurity status of Nunavimmiut aged 16 years and over as measured using the Single-Item Measure of food insecurity in the 2004 *Qanuippitaa?* Nunavik Inuit Health Survey and the 2017 *Qanuilirpitaa?*



a, b Estimates with different letters are statistically different on food security/food insecurity ($p < 0.05$).

Socio-demographic characteristics and food insecurity in Nunavik

Associations between individual characteristics and food security status

A number of socio-demographic characteristics were associated with food security status in the region (Tables 3,4,5). Nunavimmiut youth (aged 16-19) were more likely to be food insecure (87%) than young adults aged 20-30 (80%), adults aged 31-54 (78%) and elders aged 55 and over (68%; Table 3). A smaller proportion of elders were moderately food insecure (39%) compared to the other age groups, while a greater proportion of youth aged 16-19 years old were severely food insecure (25%) than older youth aged 20-30 years old (16%).

No significant differences were seen in food security status among men (80% insecure) and women (76% insecure) in the region, but Nunavimmiut women who reported being pregnant in the year prior to the survey were more likely to be food insecure (89%) than Nunavimmiut women of childbearing age (16-49 years old) who had not been pregnant (75% insecure) and Nunavimmiut women not of childbearing age (50 years and older, 70% insecure; Table 3). Also, a smaller proportion of women of childbearing age who were not pregnant in the year prior to the survey reported severe food insecurity (13%) than women who had been pregnant in the year prior to the survey (24%) and women who were not of childbearing age (20%).

A greater proportion of Nunavimmiut living in Hudson Bay communities were food insecure (84%) than those living in Hudson Strait (77%) or Ungava Bay (71%) communities. Similarly, a greater proportion of Nunavimmiut living along Hudson Bay were moderately food insecure (55%) than those living in communities in the other two ecological regions in Nunavik.

Individuals with a personal income of $40,000 or more were less likely to be food insecure (67%) than those with a personal income between $20,000 to $40,000 (79% insecure) and individuals with a personal income of less than $20,000/year (85%; Table 3). Further, a smaller proportion of individuals earning $40,000/year or more experienced moderate food insecurity (41%) than those in the two other income categories ($< $20,000: 51%, $20-$40,000: 52%).

Food insecurity was less common among Nunavimmiut whose highest level of formal education was beyond secondary school (60%) than those individuals whose highest level of education was completing secondary school (76%) or was less than secondary school completed (82% insecure; Table 3).

Individuals that were employed full-time were less likely to be food insecure (71%) than those who were employed part-time (84%) or unemployed (83%). Full-time employed respondents were also less likely to be moderately food insecure (45%) than those who were employed occasionally (seasonal, contract, on call, 62%) or unemployed (55%). Finally, full-time employed individuals were less likely to be severely food insecure (15%) than those who were only employed part-time (22%).

Table 3 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to age group, sex, pregnancy status, ecological region, personal income, education, and employment status, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Age Groups												
Youth (16-19 years old)	13.3[a*]	9.1	19.1	8.1*	4.9	12.9	53.7[a]	45.8	61.4	25.0[a]	19.0	32.1
Young adults (20-30 years old)	20.3[b]	15.9	25.5	13.3*	9.4	18.5	50.5[a]	44.3	56.5	15.9[b]	11.9	21.0
Adults (31-54 years old)	22.4[b]	18.5	26.8	11.4*	8.4	15.4	48.4[a]	43.4	53.4	17.8	14.3	21.9
Elders (55 years and up)	31.8[c]	25.5	38.9	11.5*	7.9	16.4	38.5[b]	32.1	45.3	18.2	13.6	24.0
Sex												
Male	20.0	16.2	24.4	10.6*	7.7	14.4	48.6	43.4	53.8	20.8	17.0	25.2
Female	24.1	21.1	27.4	12.4	10.2	14.9	47.7	43.9	51.5	15.9	13.4	18.7
Pregnancy Status												
Pregnant	10.6[a**]	6.1	17.8	12.7*	7.9	19.6	53.0[a]	44.3	61.6	23.7[a*]	16.9	32.2
Non-pregnant women of childbearing age	24.5[b]	20.7	28.8	12.4	9.6	15.9	50.3[a]	45.6	55.1	12.8[b]	10.1	16.0
Women of non-childbearing age	31.4[b]	24.8	38.8	11.3*	7.4	16.7	37.8[b]	30.9	45.1	19.6[a*]	14.2	26.3
Ecological region												
Hudson Bay	15.7[b]	12.2	20.0	9.5[b*]	6.8	13.2	55.2[b]	49.8	60.5	19.5	16.0	23.7
Hudson Strait	22.7[a]	17.5	29.0	15.8[a*]	11.3	21.6	42.1[a]	35.6	48.9	19.4	14.5	25.3
Ungava Bay	29.3[a]	25.1	33.8	10.9	8.5	13.7	43.6[a]	39.1	48.3	16.2	13.1	20.0
Personal Income												
Less than $20,000	15.2[a]	12.1	19.0	9.7[a*]	7.1	13.1	51.1[a]	46.0	56.1	24.0[a]	20.4	28.0
$20,000 to less than $40,000	21.4[a]	15.8	28.4	12.0*	7.9	17.8	51.9[a]	44.1	59.6	14.7[b*]	10.2	20.9
$40,000 or more	33.5[b]	27.7	39.7	16.0[b*]	11.7	21.5	41.0[b]	34.9	47.5	9.5[b*]	6.3	14.1
Education												
Less than secondary completed	17.9[a]	15.1	21.0	10.4	8.2	13.1	51.2[a]	47.4	55.0	20.5[a]	17.8	23.7
Secondary completed	24.0[a]	17.7	31.7	16.2*	10.4	24.3	44.0	36.1	52.2	15.8*	10.9	22.3
More than secondary completed	39.8[b]	32.0	48.1	11.0*	7.3	16.2	38.0[b]	30.4	46.3	11.3[b**]	6.7	18.2
Employment Status												
Employed full-time	28.7[a]	25.1	32.7	12.2	9.4	15.8	44.5[a]	40.0	49.1	14.5[a]	11.6	18.0
Employed part-time	16.3[b*]	11.4	22.8	16.4*	10.5	24.8	45.2	37.2	53.4	22.1[b*]	16.0	29.7
Employed occasionally (seasonal, contract, on call)	13.9[b**]	5.9	29.4	7.6**	3.4	16.2	61.5[b]	45.7	75.2	17.0**	8.2	31.9
Unemployed	17.0[b]	12.6	22.6	9.7*	6.7	13.8	55.1[b]	49.0	61.1	18.1	14.4	22.6

a, b, c Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Associations between household characteristics and food security status

While no association was found between single-headed household status versus households with more than one head of household (e.g., married couple, couple living in common law relationship, etc.) and food insecurity status, nor between the sex of a single-headed household individual and food insecurity status, the number of children in a household was associated with food insecurity status in the region (Table 4). Nunavimmiut living in a house with 5 or more children were more likely to be food insecure (89%) compared to households with 2 or fewer children (71-77%; Table 4). Nunavimmiut living in large communities were less likely to be food insecure (75% insecure) compared to those living in small communities (82% insecure).

Table 4 **Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to single-headed household status, sex of single-headed household member, number of child(ren) in the household, and community size for the population aged 16 years and over, Nunavik, 2017**

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Single-Headed Household												
No	22.3	19.7	25.3	11.9	9.8	14.3	47.9	44.4	51.4	17.9	15.6	20.6
Yes	21.4*	15.3	29.1	9.5**	5.1	17.1	47.0	38.5	55.5	22.1*	15.9	29.9
Sex of Single-Headed Household Member												
Male	19.3**	10.0	33.8	NP			41.8*	28.0	57.0	29.6*	18.2	44.3
Female	23.4*	16.2	32.5	9.8**	5.3	17.3	51.7	41.8	61.5	15.1*	9.5	23.2
Number of Children in Household												
No children	28.9[a]	23.5	35.0	15.8*	10.8	22.5	37.2[a]	30.8	44.1	18.1*	13.3	24.1
1 or 2 children	23.4[a,b]	19.6	27.6	10.8	8.0	14.4	47.6[b]	42.9	52.4	18.1	15.0	21.7
3 or 4 children	18.3[b,c]	14.2	23.3	9.7*	6.7	13.9	52.4[b,c]	46.7	58.0	19.6	15.3	24.6
5 or more children	11.4[c]**	5.8	21.1	10.2**	5.7	17.7	60.8[c]	48.9	71.5	17.6**	10.0	29.1
Community Size												
Large	24.6[a]	21.0	28.7	10.7	8.2	13.8	47.9	43.5	52.4	16.8	13.7	20.4
Small	18.5[b]	15.6	21.8	12.6	9.9	16.0	48.4	44.1	52.8	20.5	17.1	24.4

a, b, c Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

Associations between access to transportation and food security status

The association between access to a vehicle (car, truck, ATV, snowmobile) for movement in town and food security status was examined with the understanding that physical access to stores, food support programs and other ways of getting food are likely facilitated by access to and use of a vehicle. While some individuals reported using the 'bus' in their community, this was not accessible in all communities and therefore these responses were not included in the analysis (Table 5).

Access to transportation was significantly associated with food security status among Nunavimmiut (Table 5). Individuals who typically used a vehicle to move around town were less likely to be food insecure (71%) than Nunavimmiut who usually received rides from friends or family (80% insecure) and those who usually walked or biked to get around town (88% insecure; Table 5). A lower proportion of those using a vehicle were also severely food insecure (13%) compared to individuals getting rides from friends and family (26%) or walking or using a bike (26%). When examining this issue among elders, a similar association was found. elders who usually walked or used a bike to get around town were more likely to be classified as food insecure (83%) than elders reporting using a vehicle (62% insecure). As well, a smaller proportion of elders using a vehicle were severely food insecure (13%) as compared with those walking or using a bike (30%). Among heads of single-headed households, those that reported usually getting rides from friends or family as their primary means of moving around town were more likely to be food insecure (94%) than those that had access to and used a vehicle (69% insecure; Table 5).

Table 5 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status according to usual way of getting around town for all Nunavimmiut aged 16 years and over (transportation, excluding bus), for Nunavimmiut aged 55 and over (Elders only), and for Nunavimmiut living in a single-headed household (Single-headed households only), Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Transportation (excluding bus)												
Vehicle	28.9[a]	25.4	32.7	14.6[a]	11.9	17.9	44.0[a]	39.7	48.4	12.5[a]	9.9	15.7
Rides from friends/family	19.7[b]*	12.7	29.1	7.5[b]**	4.0	13.4	47.4	37.7	57.2	25.5[b]*	18.2	34.4
Walk or Bike	12.0[b]*	8.8	16.3	7.8[b]*	5.1	11.6	54.1[b]	48.4	59.7	26.1[b]	21.6	31.2
Transportation (Elders only, excl. bus)												
Vehicle	38.4[a]	29.6	48.0	14.1[a]*	8.8	21.9	34.4	26.4	43.4	13.1[a]*	8.3	20.1
Rides from friends/family	46.4**	23.2	71.3	NP			31.1**	12.6	58.6	NP		
Walk or Bike	17.0[b]**	9.5	28.6	5.1[b]**	2.2	11.6	48.1	36.0	60.5	29.7[b]*	19.7	42.1
Transportation (Single-headed households only, excl. bus)†												
Vehicle	31.1*	20.6	43.9	17.0**	8.7	30.6	37.3*	24.8	51.7	14.6**	7.6	26.5
Rides from friends/family	NP			NP			53.1*	32.3	72.8	41.1**	22.3	62.9
Walk or Bike	16.8**	8.0	31.9	NP			55.4	39.8	70.0	22.9**	12.2	38.9

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).
* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.
** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.
NP Data not presented ($n < 5$).
† Could not run significance test because of 0 frequencies.

Associations between socio-demographic characteristics and individual food insecurity questions

Table 6 presents the results of responses to individual food security questions by age of participant. A larger proportion of youth aged 16-19 in Nunavik experienced food not lasting in their house (Sometimes-65%) than young adults aged 20-30 (Sometimes-53%) and adults aged 31 to 54 (Sometimes-57%). Elders (55 years and older) were the least likely to report experiencing this challenge in their access to food (Sometimes-43%; Table 6). Around 19% of youth aged 16-19 and 16% of young adults aged 20-30 reported losing weight because of a lack of access to resources to get food, with both of these proportions being significantly larger than among elders (9% reported losing weight; Table 6).

Table 6 Prevalence and 95-percent confidence intervals of responses to individual questions in the food security survey module among Nunavimmiut by age group, population aged 16 years and over, Nunavik, 2017

Individual Food Security Questions	Youth 16-19			Young adults 20-30			Adults 31-54			Elders 55+		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Worried the food would run out												
Never	32.2	25.6	39.5	33.0	27.8	38.8	31.6	27.0	36.6	44.0	37.3	51.0
Sometimes	57.4	50.0	64.4	59.2	53.2	64.9	58.4	53.1	63.5	48.9	42.0	55.8
Often	10.5*	6.5	16.4	7.7*	5.3	11.1	10.0*	7.0	14.1	7.1*	4.3	11.5
Food in the house didn't last												
Never	27.1[a]	21.3	33.7	38.9[b]	33.2	45.0	34.2[a,b]	29.6	39.0	49.7[c]	43.2	56.3
Sometimes	65.4[a]	58.5	71.7	53.1[b]	46.9	59.3	56.7[b]	51.5	61.7	43.3[c]	36.8	50.0
Often	7.5*	4.7	11.8	7.9*	5.1	12.2	9.1*	6.3	13.0	7.0*	4.4	11.0
Not able to eat healthy food												
Never	36.6	29.9	43.9	44.1	38.2	50.2	46.5	41.5	51.5	51.1	44.2	57.9
Sometimes	52.7	45.1	60.2	49.0	43.1	55.0	46.6	41.9	51.3	39.5	32.9	46.5
Often	10.7*	7.0	16.0	6.8*	4.5	10.2	6.9*	4.6	10.3	9.4*	6.0	14.3
Had to cut size or skip meals												
Yes (affirmative)	32.4	25.9	39.7	22.5	17.5	28.5	25.9	21.9	30.4	28.2	22.6	34.6
How often had to cut size or skip meals?ϕ												
Only 1 or 2 months	37.3*	24.5	52.2	25.5*	16.1	37.9	25.7*	17.9	35.4	26.4**	15.5	41.3
Some months but not every month	42.1*	29.7	55.7	49.9	36.9	63.0	45.8	36.2	55.7	42.1*	29.6	55.7
Almost every month	20.6**	11.8	33.4	24.5*	15.5	36.6	28.5*	20.0	38.9	31.5*	21.2	44.0
Ate less than felt you should												
Yes	33.0	26.7	39.9	23.0	18.4	28.3	24.1	20.0	28.8	25.6	20.2	32.0
Was hungry but didn't eat												
Yes	30.1	23.7	37.3	25.0	20.1	30.7	21.1	17.1	25.8	19.0	14.3	24.9
Lost weight												
Yes	18.6[a]*	13.1	25.7	16.0[a]*	11.6	21.5	11.4	8.5	15.1	9.3[b]*	6.1	13.8
Did not eat for a whole day												
Yes (affirmative)	17.3*	12.3	23.8	11.0*	7.7	15.4	11.7	8.8	15.3	12.1*	8.2	17.6
How often did not eat for whole day?ϕ												
Only 1 or 2 months	29.4**	15.3	49.0	22.3**	10.6	41.0	22.4**	11.2	39.6	NP		
Some months but not every month	47.8*	31.7	64.3	53.0*	35.4	70.0	50.7*	35.3	66.0	57.9*	36.1	77.0
Almost every month	22.8**	10.1	43.6	24.7**	12.2	43.6	26.9**	15.4	42.7	27.0**	13.2	47.4

a, b, c Estimates with different letters are statistically different between age groups on that food security scale question response option ($p < 0.05$). This table reads slightly differently than the other tables in this report in that comparisons are made across rows rather than down columns.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

ϕ Only among Nunavimmiut who answered the preceding question affirmatively.

When comparing responses to individual food security questions by sex, a larger percentage of men (30%) than women (23%) reported having to cut the size of their meals or skip meals because of a lack of resources to get food (Table 7). Similarly, males were more likely to indicate that they had experienced a time that they were hungry but didn't eat (27%), had lost weight (18%), or did not eat for a whole day because of a lack of access to food (16%) as compared to females (was hungry but didn't eat-19%, lost weight-9%, did not eat for a whole day-9%; Table 7)

Table 7 Prevalence and 95-percent confidence intervals of responses to individual questions in the food security survey module among Nunavimmiut by sex, population aged 16 years and over, Nunavik, 2017

Individual Food Security Questions	Males			Females		
	%	95% CI		%	95% CI	
Worried the food would run out						
Never	33.3	28.7	38.3	35.0	31.6	38.5
Sometimes	57.3	52.2	62.2	56.5	53.0	60.0
Often	9.4*	6.6	13.2	8.5	6.8	10.6
Food in the house didn't last						
Never	34.5	29.9	39.4	39.7	36.4	43.2
Sometimes	56.8	51.7	61.9	52.6	49.0	56.1
Often	8.7*	6.0	12.4	7.7	6.0	9.8
Not able to eat healthy food						
Never	43.2	38.2	48.4	47.1	43.3	50.8
Sometimes	49.9	44.9	54.8	44.1	40.4	47.8
Often	6.9*	4.6	10.1	8.9	7.0	11.2
Had to cut size or skip meals						
Yes (affirmative)	29.6[a]	25.2	34.4	23.0[b]	20.1	26.1
How often had to cut size or skip meals?[ϕ]						
Only 1 or 2 months	28.7*	20.5	38.7	26.8	21.1	33.3
Some months but not every month	43.2	33.9	53.1	48.5	41.3	55.7
Almost every month	28.0	20.8	36.6	24.8	19.1	31.5
Ate less than felt you should						
Yes	27.8	23.4	32.7	22.9	20.1	25.9
Was hungry but didn't eat						
Yes	27.3[a]	22.8	32.4	19.1[b]	16.5	21.9
Lost weight						
Yes	17.8[a]	14.0	22.3	9.0[b]	7.2	11.3
Did not eat for a whole day						
Yes (affirmative)	15.8[a]	12.5	19.9	9.0[b]	7.2	11.1
How often did not eat for whole day?[ϕ]						
Only 1 or 2 months	27.9*	17.6	41.1	14.0**	7.7	24.0
Some months but not every month	50.1	37.0	63.2	54.6	43.7	65.1
Almost every month	22.0**	12.8	35.1	31.4*	22.3	42.3

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

ϕ Only among Nunavimmiut who answered the preceding question affirmatively.

When examining pregnancy status and responses indicating specific experiences of food insecurity it was seen that women who were pregnant at some time in the 12 months prior to the survey were more likely to worry that the food they had access to would run out before they could get more (Never: 19%, Sometimes: 67%, Often 14%) when compared with women of childbearing age that were not pregnant in the year prior to the survey (Never: 37%, Sometimes: 57%, Often: 7%) and when compared with women of non-childbearing age (Never: 42%, Sometimes: 50%; Table 8).

Women who were pregnant more commonly reported a time in the year prior to the survey when the food didn't last in their house (Never-28%; Sometimes-63%) than women of childbearing age that were not pregnant in the year prior to the survey (Never-39%) and women of non-childbearing age (Never-49%; Sometimes-41%). Women who were pregnant were also more likely to report not being able to eat healthy foods because of a lack of resources (Never-37%, Sometimes-50%, Often-13%) than women of childbearing age who were not pregnant (Often-7%), and women of non-childbearing age (Never-51%, Sometimes-36%).

A larger proportion of women who were pregnant in the 12 months prior to the survey reported having to cut the size of their meals or skip meals (32%) than women of childbearing age that were not pregnant in the 12 months prior to the survey (19%). The proportion of pregnant women reporting having to cut the size of their meals or skip meals (32%) was similar to that reported among women of non-childbearing age (28%). It was also more common for pregnant women to report having been hungry and not having food to eat (28%) than non-pregnant women of childbearing age (18%) and women of non-childbearing age (18%). Similarly, women who were pregnant were more likely to report having lost weight because they didn't have the resources to get more food (16%) than women of childbearing age (8%) and women of non-childbearing age (8%; Table 8).

Table 8 Prevalence and 95-percent confidence intervals of responses to individual questions in the food security survey module among Nunavimmiut by pregnancy status, population aged 16 years and over, Nunavik, 2017

Individual Food Security Questions	Pregnant in last 12 months			Women of childbearing age-not pregnant			Women of Non-Childbearing Age		
	%	95% CI		%	95% CI		%	95% CI	
Worried the food would run out									
Never	18.8[a]*	12.8	26.6	36.6[b]	32.2	41.3	41.6[b]	34.4	49.2
Sometimes	67.1[a]	58.3	74.9	56.7[b]	51.9	61.3	50.1[b]	42.8	57.3
Often	14.1[a]*	8.7	22.1	6.7[b]*	4.8	9.3	8.3*	5.4	12.6
Food in the house didn't last									
Never	27.9[a]	20.9	36.3	38.6[b]	34.2	43.3	48.9[c]	41.3	56.6
Sometimes	63.0[a]	54.9	70.5	54.9[a]	50.2	59.4	40.9[b]	33.8	48.4
Often	9.0**	5.2	15.3	6.5*	4.6	9.1	10.2*	6.5	15.5
Not able to eat healthy food									
Never	37.3[a]	28.8	46.6	47.2	42.6	51.9	51.1[b]	43.7	58.5
Sometimes	49.6[a]	41.1	58.1	46.1[a]	41.7	50.6	36.3[b]	29.8	43.4
Often	13.1[a]*	8.3	20.1	6.6[b]*	4.7	9.3	12.6*	7.9	19.4
Had to cut size or skip meals									
Yes (affirmative)	31.5[a]	24.0	40.1	18.7[b]	15.5	22.3	28.3[a]	22.0	35.5
How often had to cut size or skip meals?ϕ									
Only 1 or 2 months	28.3*	16.9	43.6	25.1*	17.2	35.1	26.9*	16.5	40.7
Some months but not every month	44.1*	30.7	58.5	53.7	43.4	63.7	42.0*	29.2	55.9
Almost every month	27.5**	16.1	42.9	21.2*	13.7	31.3	31.1*	19.6	45.6
Ate less than felt you should									
Yes	27.2	20.2	35.5	20.6	17.3	24.4	27.8	21.7	34.8
Was hungry but didn't eat									
Yes	27.7[a]	20.6	36.2	17.6[b]	14.3	21.5	17.6[b]*	12.8	23.7
Lost weight									
Yes	16.0[a]*	10.6	23.3	7.6[b]*	5.5	10.3	8.3[b]*	5.1	13.4
Did not eat for a whole day									
Yes (affirmative)	13.5*	8.4	20.7	7.8*	5.8	10.5	10.0*	6.3	15.5
How often did not eat for whole day?ϕ									
Only 1 or 2 months	NP			17.6**	7.9	34.7	NP		
Some months but not every month	71.1	47.8	86.8	45.1*	29.9	61.3	56.3*	33.0	77.0
Almost every month	NP			37.3*	23.2	54.0	33.4**	15.9	57.2

a, b, c Estimates with different letters are statistically different between pregnancy status groups on that food security scale question response option ($p < 0.05$). This table reads slightly differently than the other tables in this report in that comparisons are made across rows rather than down columns.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

ϕ Only among Nunavimmiut who answered the preceding question affirmatively.

Worry about food running out before they could get more was more common among residents living in Hudson Bay communities than in communities along Ungava Bay (Hudson Bay: Never worried-29%, Often worried-12% vs. Ungava Bay: Never worried-41%, Often worried-7%; Table 9). A similar pattern of responses existed in individuals' experience with food in their house not lasting in that this was more commonly reported among residents along the Hudson Bay as compared to the Ungava Bay (Hudson Bay: Never-29%, Sometimes-63% vs. Ungava Bay: Never-46%, Sometimes-47%), as well as compared to residents of the Hudson Strait (Never-40%, Sometimes-51%). These percentages on food not lasting were similar for residents of the Ungava Bay and residents of the Hudson Strait (Table 9). No other responses to the individual food security questions were significantly different between regions within Nunavik.

Table 9 Prevalence and 95-percent confidence intervals of responses to individual questions in the food security survey module among Nunavimmiut by ecological region, population aged 16 years and over, Nunavik, 2017

Individual Food Security Questions	Hudson Bay			Hudson Strait			Ungava Bay		
	%	95% CI		%	95% CI		%	95% CI	
Worried the food would run out									
Never	28.9[a]	24.5	33.7	33.8	27.6	40.7	40.8[b]	36.2	45.6
Sometimes	59.3	54.0	64.4	59.3	52.4	65.8	52.3	47.3	57.2
Often	11.8[a]*	8.7	15.7	6.9**	4.1	11.3	6.9[b]*	4.9	9.7
Food in the house didn't last									
Never	28.6[b]	24.4	33.3	39.6[a]	33.1	46.6	45.7[a]	41.1	50.3
Sometimes	63.2[b]	58.1	68.0	50.6[a]	43.4	57.8	47.2[a]	42.7	51.8
Often	8.2*	5.7	11.7	9.8*	6.2	15.0	7.1*	4.9	10.1
Not able to eat healthy food									
Never	41.0	36.1	46.1	47.6	40.8	54.5	48.4	43.6	53.2
Sometimes	49.0	44.2	53.9	45.6	39.0	52.4	45.6	40.8	50.4
Often	10.0*	7.2	13.6	6.8*	4.3	10.8	6.0*	4.3	8.4
Had to cut the size or skip meals									
Yes (affirmative)	24.9	20.8	29.4	29.8	23.7	36.7	25.5	21.7	29.7
How often had to cut size or skip meals?ϕ									
Only every 1 or 2 months	27.7*	19.3	37.9	30.9*	19.9	44.6	25.7*	18.2	34.9
Some months but not every month	39.9	30.5	50.1	47.0	34.1	60.3	51.2	41.4	60.8
Almost every month	32.5*	23.3	43.1	22.1*	13.9	33.2	23.2*	16.3	31.9
Ate less than felt you should									
Yes	25.7	21.7	30.3	25.3	19.6	31.8	25.0	21.2	29.2
Was hungry but didn't eat									
Yes	25.0	20.9	29.7	21.8	16.6	28.1	22.0	18.3	26.3
Lost weight									
Yes	11.9	9.0	15.6	17.1*	12.3	23.2	12.6	9.8	16.2
Did not eat for a whole day									
Yes (affirmative)	13.5	10.6	17.0	15.1*	10.5	21.1	9.2	6.8	12.2
How often did not eat for whole day?ϕ									
Only 1 or 2 months	27.0*	16.6	40.9	21.5**	9.1	42.7	16.8**	8.7	29.9
Some months but not every month	44.4	32.1	57.5	60.0*	40.7	76.6	55.0	39.8	69.3
Almost every month	28.5*	17.8	42.3	18.5**	7.8	38.0	28.2*	16.7	43.4

a, b Estimates with different letters are statistically different between ecological regions on that food security scale question response option ($p < 0.05$). This table reads slightly differently than the other tables in this report in that comparisons are made across rows rather than down columns.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

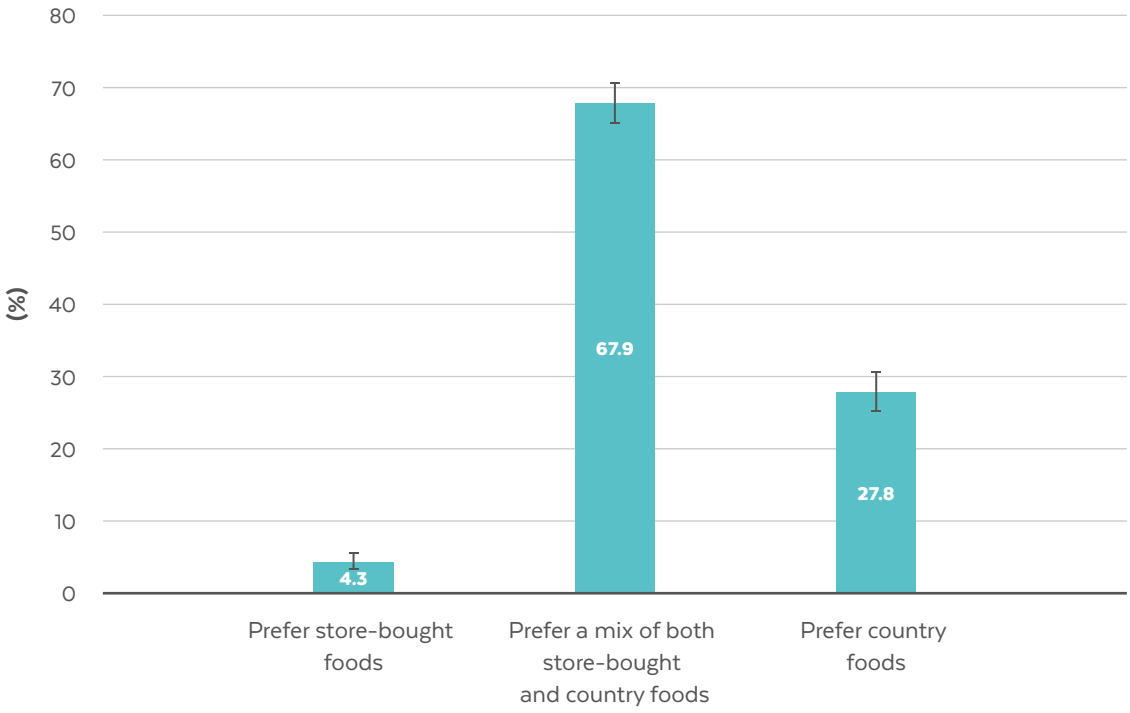
ϕ Only among Nunavimmiut who answered the preceding question affirmatively.

FOOD PREFERENCES

Prevalence

The majority of Nunavimmiut reported preferring a mix of both store-bought and country food items in their diet (Figure 4).

Figure 4 Prevalence and 95-percent confidence intervals of food preference among Nunavimmiut, population aged 16 years and over, Nunavik, 2017



Associations with socio-demographic characteristics

Differences existed in food preferences between Nunavimmiut of different ages (Table 10). Elders tended to prefer a mix of store and country foods (60%) less than young adults (aged 20-30) and adults (aged 31-54; 74% and 68% respectively). More young adults (aged 20-30) preferred a mix of store and country foods than elders and youth (aged 16-19). Elders were the most likely to report preferring country foods (40%), followed by adults (29%) and youth (aged 16-19, 28%), and finally young adults (aged 20-30, 19%; Table 10).

Table 10 Prevalence and 95-percent confidence intervals of food preference among Nunavimmiut by age group, sex, pregnancy status, and ecological region, population aged 16 years and over, Nunavik, 2017

	Prefer store-bought foods			Prefer a mix of both store-bought and country foods			Prefer country foods		
	%	95% CI		%	95% CI		%	95% CI	
Age Groups									
Youth 16-19	7.7[a]*	4.9	11.8	64.8[a,c]	57.4	71.5	27.5[a]	21.5	34.5
Young adults 20-30	6.5*	3.9	10.4	74.2[b]	69.0	78.8	19.3[b]	15.2	24.3
Adults 31-54	3.0[b]**	1.8	5.1	68.0[a,b]	62.9	72.7	29.0[a]	24.5	34.0
Elders 55+	NP			59.8[c]	53.3	66.1	39.6[c]	33.4	46.2
Sex									
Male	4.0**	2.4	6.6	66.6	61.7	71.2	29.3	24.9	34.2
Female	4.5	3.4	6.1	69.2	66.0	72.2	26.3	23.4	29.4
Pregnancy Status									
Pregnant	6.2**	3.2	11.5	70.6	62.1	77.9	23.2[a]*	16.5	31.7
Not pregnant women of childbearing age	4.6*	3.1	6.7	72.3[a]	67.7	76.5	23.0[a]	19.2	27.4
Women of non-childbearing age	2.2**	0.9	5.2	62.5[b]	55.4	69.1	35.3[b]	28.8	42.4
Ecological Region									
Hudson Bay	5.0*	3.4	7.3	67.8	63.1	72.2	27.2	23.1	31.7
Hudson Strait	4.5**	2.3	8.5	65.1	58.4	71.2	30.4	24.6	36.9
Ungava Bay	3.2**	1.9	5.3	70.1	65.6	74.2	26.7	22.8	30.9

a, b, c Estimates with different letters are statistically different on that food preference option ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

Association with food security status

Nunavimmiut who prefer just store-bought foods in their diet were more likely to be food insecure (89%) than those who preferred a diet of both store-bought foods and country foods (76%; Table 11).

Table 11 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status according to food preference among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Food Preference												
Prefer store-bought foods	10.6[a]**	5.2	20.6	NP			58.9	44.9	71.6	28.2*	17.5	42.1
Prefer a mix of both store-bought and country foods	23.9[b]	20.9	27.2	13.2[b]	10.7	16.2	45.0[a]	41.2	48.8	18.0	15.3	20.9
Prefer country foods	19.5	15.0	24.9	8.8[c]*	6.2	12.3	54.3[b]	48.0	60.5	17.4	13.1	22.7

a, b, c Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

HUNTING, FISHING AND HARVESTING ACTIVITIES

Overview

Spending time on the land can provide access to hunting, fishing, collecting shellfish and berry picking opportunities throughout the year in Nunavik. It is central to identity, mental and physical health, and access to country foods for Nunavimmiut. The majority of Nunavimmiut went out on the land and hunted, fished, harvested seafood and/or picked berries at least once – and for many, several times – in the year prior to the survey. Detailed analyses of the responses to the questions regarding frequency of going on the land and participation in hunting, fishing and gathering activities are presented in the *Qanuilirpitaa? 2017* thematic report '*Hunting, Fishing, Collecting…*'.

Prevalence and associations with food security status

Associations between going out on the land and food security status

Table 12 presents the results of the analysis between frequency of going on the land in the year prior to the survey and individual food security status. The 'going on the land' variable that is used in this analysis is a composite variable with the response options (and prevalence rates) of never go out on the land (13% of Nunavimmiut), go out on the land occasionally or often for day trips (42% of Nunavimmiut), go out on the land occasionally or often for a couple of days (36% of Nunavimmiut), and go out on the land occasionally or often for a week or more (9% of Nunavimmiut). While no association was seen between the frequency of going on the land and the general classification of being food secure or insecure, individuals that reported never going out on the land were more likely to be severely food insecure (31%) than individuals who went out occasionally or often for day trips (17% severely food insecure) and individuals who went out for a couple of days at a time (16%; Table 12).

Table 12 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to frequency of time going on the land, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Time spent on the land												
Never	18.0*	11.7	26.8	10.0**	6.0	16.4	41.5[a]	32.8	50.7	30.5[a]	23.2	39.0
Went out occasionally or often on day trips	20.9	17.4	24.9	9.9	7.5	13.0	51.7[b]	47.0	56.4	17.4[b]	14.2	21.3
Went out occasionally or often for a couple of days	23.8	19.6	28.6	12.8	9.7	16.8	47.0	41.8	52.3	16.3[b]	12.8	20.6
Went out occasionally or often for a week or more	25.8*	16.8	37.5	16.4**	9.5	26.8	44.2	33.1	55.9	13.6[b]**	8.0	22.2

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Associations between participating in land-based activities and food security status

The survey asked participants to report how often they participated in land-based activities (hunting, fishing, harvesting seafood) each season. To examine the association with participation in these activities throughout the year and food security status, a composite 'hunting, fishing, harvesting seafood' variable was created[6]. Berry picking was excluded from this composite variable since the berry-picking question differed slightly from the hunting, fishing and harvesting seafood questions. Individuals were categorized on this composite variable as not having participated in any activities in any of the seasons (8% of Nunavimmiut), having participated in at least 1 activity in 1 or 2 seasons (17% of Nunavimmiut), or having participated in at least 1 activity in 3 or 4 seasons (75% of Nunavimmiut). In this way, the regularity and frequency of participation in these country food harvesting activities were classified. No associations were found between the frequency and regularity of participation in harvesting and being food secure or insecure; however, participating in harvesting activities more frequently (i.e. in 3 or 4 seasons) versus only 1 or 2 seasons did decrease the likelihood of individuals reporting food access challenges that would classify them as being severely food insecure (e.g. skipping meals or going for a full day without eating; Table 13).

Table 13 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to participation in land-based activities (hunting, fishing, harvesting seafood) across seasons, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Hunting, Fishing, Harvesting Seafood Composite												
No activities in any season	18.5*	11.9	27.8	16.3**	9.2	27.3	44.3	33.5	55.6	20.9*	13.5	30.8
At least 1 activity in 1 or 2 seasons	19.6*	14.3	26.3	8.0*	5.0	12.4	42.8	35.8	50.1	29.7[a]	23.5	36.7
At least 1 activity in 3 or 4 seasons	23.0	20.1	26.3	11.8	9.7	14.3	49.6	46.0	53.2	15.6[b]	13.2	18.3

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

6. The association between access to harvesting and food security was examined through the questions on individual's participation in harvesting activities and frequency of going out on the land. Data was not gathered in 2017 identifying if individuals lived in a household that simply had a hunter as was the case in 2004.

Associations between hunting challenges and food security status

There has been growing concern about the impacts that climate and other forms of environmental change may have on Nunavimmiut's ability to locate, access and harvest country food species in the local environment, and therefore on food security status. Individuals that reported going hunting at least once in the year prior to the survey and who use a firearm (herein referred to as 'hunters' for simplicity) were asked if there were species that they found harder to find, catch or hunt in the same season over the last five years. Two composite variables were created – challenges hunting land species (caribou and/or goose) and challenges hunting marine species (seal, beluga and/or walrus) – each with the response options that none of those species were harder to hunt in the last five years or that at least 1 of those species were harder to hunt in the last five years. Around 50% of hunters found that at least one of land species (caribou and/or goose) was harder to hunt in the last five years, and around 60% of hunters found that at least one marine species (seal, beluga and/or walrus) was harder to hunt in the last five years. More detailed results are presented in the *Qanuilirpitaa? 2017* thematic report '*Hunting, Fishing, Collecting…*'.

The association between these two composite variables with food security status are presented in Tables 14 (land species) and 15 (marine species) below. Contrary to what might be expected, hunters who hunted goose or caribou and reported that neither species was harder to hunt in the five years prior to the survey were more likely to be food insecure (81%) than hunters who reported goose and/or caribou were as harder to hunt in the previous five years (70% insecure). No significant differences in food security status were seen between individuals that reported difficulties harvesting marine species (seal, beluga and/or walrus) and those that did not (Table 15).

Table 14 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut hunters aged 16 years and over who use a firearm, according to difficulty hunting land species (caribou and/or goose) compared to the same season since 2011, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Hunting Difficulty – Land Species												
No land species listed were harder to hunt	19.3[a]*	13.6	26.7	13.9*	8.9	20.9	48.1	40.3	56.0	18.7*	12.7	26.6
At least 1 land species listed was harder to hunt	30.4[b]	24.4	37.1	12.3*	8.1	18.2	43.2	35.8	50.9	14.1*	10.0	19.6

No significant differences between hunting difficulty groups on any of the food (in)security statuses. The chi-square test of the association between hunting difficulty (land species) and 4-point food (in)security status is non-significant, and therefore no follow-up 2x2 tests were run.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

Table 15 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut hunters aged 16 years and over who use a firearm, according to difficulty hunting marine species (seal, beluga, and/or walrus) compared to the same season since 2011, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Hunting Difficulty – Marine Species												
No marine species listed were harder to hunt	24.8*	18.2	33.0	12.1**	7.2	19.7	46.3	37.4	55.4	16.7*	10.2	26.3
At least 1 marine species listed was harder to hunt	23.3	17.8	29.9	14.6*	10.1	20.7	45.4	38.2	52.9	16.6*	12.2	22.1

No significant differences between hunting difficulty groups on any of the food (in)security statuses.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

FOOD PROGRAM USE

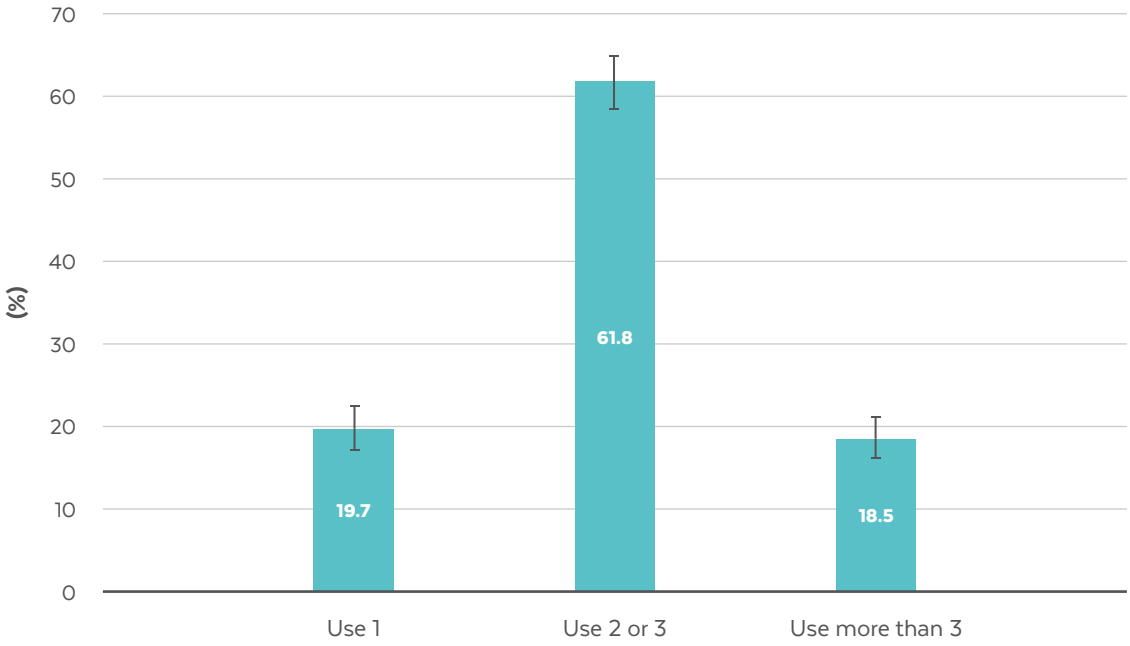
General food program use

Prevalence

A number of food support programs exist in Nunavik communities to support individuals' access to both store-bought and country foods.

Among Nunavimmiut that indicated using at least one food program in the year prior to the survey (93%), the majority said they used 2-3 programs (62%; Figure 5). Around 7% of Nunavimmiut did not use any of the listed food programs, and were excluded from the analyses shown in Figure 5, Table 16, and Table 17.

Figure 5 Prevalence and 95-percent confidence intervals of number of food programs used in the last 12 months among Nunavimmiut$^{\phi}$, population aged 16 years and over, Nunavik, 2017



ϕ Only among Nunavimmiut who used at least one food access program in the last 12 months.

Associations with socio-demographic characteristics

Use of food programs varied with age (Table 16). Individuals belonging to the three youngest age groups were more likely to use only 1 program (youth-26%; young adults-20%; adults-20%) than elders (13%), while elders were more likely to use more than 3 programs (25%) than young adults (aged 20-30, 15%). Women of child bearing age who had not been pregnant in the year before the survey were more likely to report using 2-3 food support programs (63%) than Nunavimmiut who had been pregnant in the year before the survey (53%), whereas the opposite was true for reported use of more than 3 programs (pregnant women: 29%; not pregnant women of child bearing age: 12%). Women not of childbearing age were less likely to use only 1 food program (17%) than women of childbearing age who had not been pregnant in the year before the survey (25%), whereas the opposite was true for reported use of more than 3 programs (women not of childbearing age: 19%; not pregnant women of childbearing age: 12%; Table 16).

Table 16 Prevalence and 95-percent confidence intervals of number of food access programs used in the last 12 months among Nunavimmiut$^{\phi}$ by age group, sex, pregnancy status, and ecological region, population aged 16 years and over, Nunavik, 2017

	Use 1 Food Program			Use 2 or 3 Food Programs			Use more than 3 Food Programs		
	%	95% CI		%	95% CI		%	95% CI	
Age Groups									
Youth 16-19	26.4[a]	19.5	34.6	54.2	45.9	62.3	19.5*	14.1	26.3
Young adults 20-30	20.2	15.3	26.3	64.3	57.9	70.2	15.4[a]	11.5	20.5
Adults 31-54	19.9[a]	16.1	24.4	62.5	57.2	67.5	17.6	13.8	22.2
Elders 55+	13.4[b]*	9.4	18.8	61.7	54.3	68.6	25.0[b]	19.3	31.7
Sex									
Male	18.0	14.0	22.7	61.8	56.4	67.0	20.2	16.2	24.8
Female	21.5	18.5	24.9	61.7	57.9	65.3	16.8	14.1	19.8
Pregnancy Status									
Pregnant	18.8*	12.8	26.6	52.7[a]	44.0	61.2	28.6[a]*	20.9	37.8
Not pregnant women of childbearing age	24.9[a]	20.9	29.3	63.1[b]	57.9	68.0	12.0[b]	9.1	15.8
Women of non-childbearing age	17.2[b]*	11.8	24.2	64.0	56.3	71.0	18.9[a]	14.2	24.6
Ecological Region									
Hudson Bay	22.1	18.1	26.8	59.9	54.2	65.4	17.9	14.0	22.7
Hudson Strait	17.2*	12.3	23.5	62.1	54.8	68.9	20.7	15.5	27.0
Ungava Bay	18.6	14.9	22.9	63.6	58.8	68.2	17.8	14.6	21.6

a, b Estimates with different letters are statistically different on that food program use group ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who used at least one food access program in the last 12 months.

Associations with food security status

The associations between the use of these programs and individuals' food security status are examined here. No significant differences were found in basic food security status (food secure vs. food insecure) between individuals that reported 1, 2-3, or more than 3 support programs in the year prior to the survey (Table 17). However, a smaller proportion of individuals using 1 or 2-3 programs were classified as experiencing moderate food insecurity (1 program: 43%, 2-3 programs: 48%) than those using 3 or more programs (59%; Table 17).

Table 17 **Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut aged 16 years and over who used at least one food access program in the last 12 months, according to number of food access programs used in the last 12 months, Nunavik, 2017**

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Food Program Use												
Use 1	25.6	19.6	32.6	13.6[a]*	8.7	20.7	43.0[a]	35.9	50.3	17.8*	13.0	23.8
Use 2 or 3	19.3	16.3	22.7	13.1[a]	10.3	16.5	48.2[a]	43.9	52.5	19.4	16.4	22.9
Use more than 3	17.0*	11.5	24.4	5.0[b]**	2.8	8.7	59.3[b]	51.4	66.7	18.7*	13.3	25.6

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Individual food program use

Prevalence

When considering the specific food programs that Nunavimmiut used, the most commonly used program was the community freezer, with a majority of Nunavimmiut reporting they used their community freezer at some point in the 12 months prior to the survey (82%). Hunter support programs were also used by the majority of Nunavimmiut in the 12 months prior to the survey (65%). Around one third of Nunavimmiut reported using a meal distribution program (34%), and around one quarter reported using food coupons (26%) and cooking programs (25%), in the 12 months prior to the survey ('Nunavik' percentages in Figure 7 later in this section).

Associations with socio-demographic characteristics

Individual food program use varied by respondent age and sex as presented in Tables 18-22. Community freezer use was more common among elders (90%), followed by adults (84%) and young adults (aged 20-30, 81%), and less frequently used among youth (aged 16-19, 69%; Table 18).

Table 18 Prevalence and 95-percent confidence intervals of community freezer use in the last 12 months among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

	Community Freezer Use		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	68.6[a]	61.4	75.1
Young adults 20-30	81.1[b]	75.7	85.5
Adults 31-54	84.1[b]	80.3	87.3
Elders 55+	89.7[c]	84.7	93.2
Sex			
Male	82.3	77.9	86.0
Female	81.5	78.6	84.1

a, b, c Estimates with different letters are statistically different ($p < 0.05$).

A greater proportion of elders used Hunter Support Programs (77%) than did adults (68%), followed by young adults (aged 20-30, 61%) and youth (aged 16-19, 52%; Table 18). A greater proportion of males than females (73% vs. 58%) reported use of Hunter Support Programs (Table 19).

Table 19 Prevalence and 95-percent confidence intervals of hunter support program use in the last 12 months among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

	Hunter Support Program Use		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	52.4[a]	45.4	59.3
Young adults 20-30	60.5[a,b]	54.0	66.6
Adults 31-54	68.1[b]	63.3	72.5
Elders 55+	77.4[c]	71.0	82.7
Sex			
Male	72.5[a]	67.8	76.8
Female	57.6[b]	54.2	60.9

a, b, c Estimates with different letters are statistically different ($p < 0.05$).

No significant differences in the use of cooking programs were found by age or sex. Approximately 20-30% of all four age groups and males and females reported use of Cooking Programs in the year prior to the survey (Table 20).

Table 20 Prevalence and 95-percent confidence intervals of cooking program use in the last 12 months among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

	Cooking Program Use		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	26.5	20.7	33.2
Young adults 20-30	21.8	17.3	27.2
Adults 31-54	24.1	20.1	28.7
Elders 55+	28.7	22.7	35.7
Sex			
Male	25.6	21.2	30.5
Female	23.6	20.9	26.5

No significant group differences for any of the subpopulation variables.

A larger proportion of males than females reported using meal or food distribution programs (38% vs. 30%, respectively; Table 21).

Table 21 Prevalence and 95-percent confidence intervals of meal or food distribution program use in the last 12 months among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

	Meal or food Distribution Program Use		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	32.4	25.4	40.1
Young adults 20-30	31.1	25.9	36.9
Adults 31-54	33.1	28.2	38.3
Elders 55+	41.1	34.6	47.9
Sex			
Male	38.0[a]	33.0	43.3
Female	29.5[b]	26.4	32.8

a, b Estimates with different letters are statistically different ($p < 0.05$).

No significant differences between age groups or sexes in the use of Food Coupons were reported among Nunavimmiut. Approximately 25-30% of all four age groups and males and females reported use of Food Coupons in the year prior to the survey (Table 22).

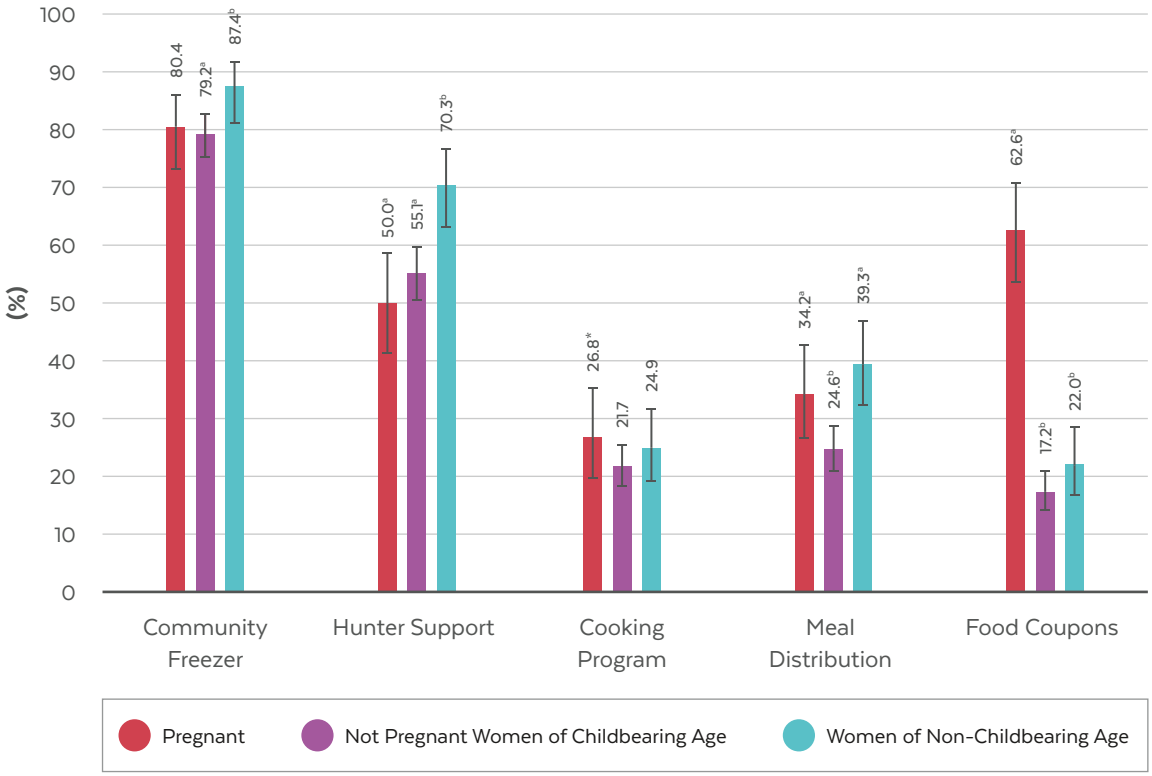
Table 22 Prevalence and 95-percent confidence intervals of food coupon use in the last 12 months among Nunavimmiut, population aged 16 years and over, Nunavik, 2017

	Food Coupons Use		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	27.3	21.5	34.0
Young adults 20-30	26.5	21.3	32.5
Adults 31-54	24.6	20.2	29.6
Elders 55+	29.3	23.2	36.3
Sex			
Male	25.9	21.6	30.7
Female	26.8	23.7	30.2

No significant group differences for any of the subpopulation variables.

Hunter support programs were more likely to be accessed by women of non-childbearing age (70%) than by pregnant women (50%) and by non-pregnant women of childbearing age (55% Figure 6). Meal distribution programs were less likely to be accessed by non-pregnant women of childbearing age (25%) than by pregnant women (34%) and by women of non-childbearing age (39%). Community freezers were more likely to be accessed by women of non-childbearing age (87%) than by non-pregnant women of childbearing age (79%). Food coupons were more commonly accessed by pregnant women (63%) than by women of child bearing age who were not pregnant (17%) and by women of non-childbearing age (22%; Figure 6).

Figure 6 **Prevalence and 95-percent confidence intervals of food program use among Nunavimmiut by pregnancy status, population aged 16 years and over, Nunavik, 2017**

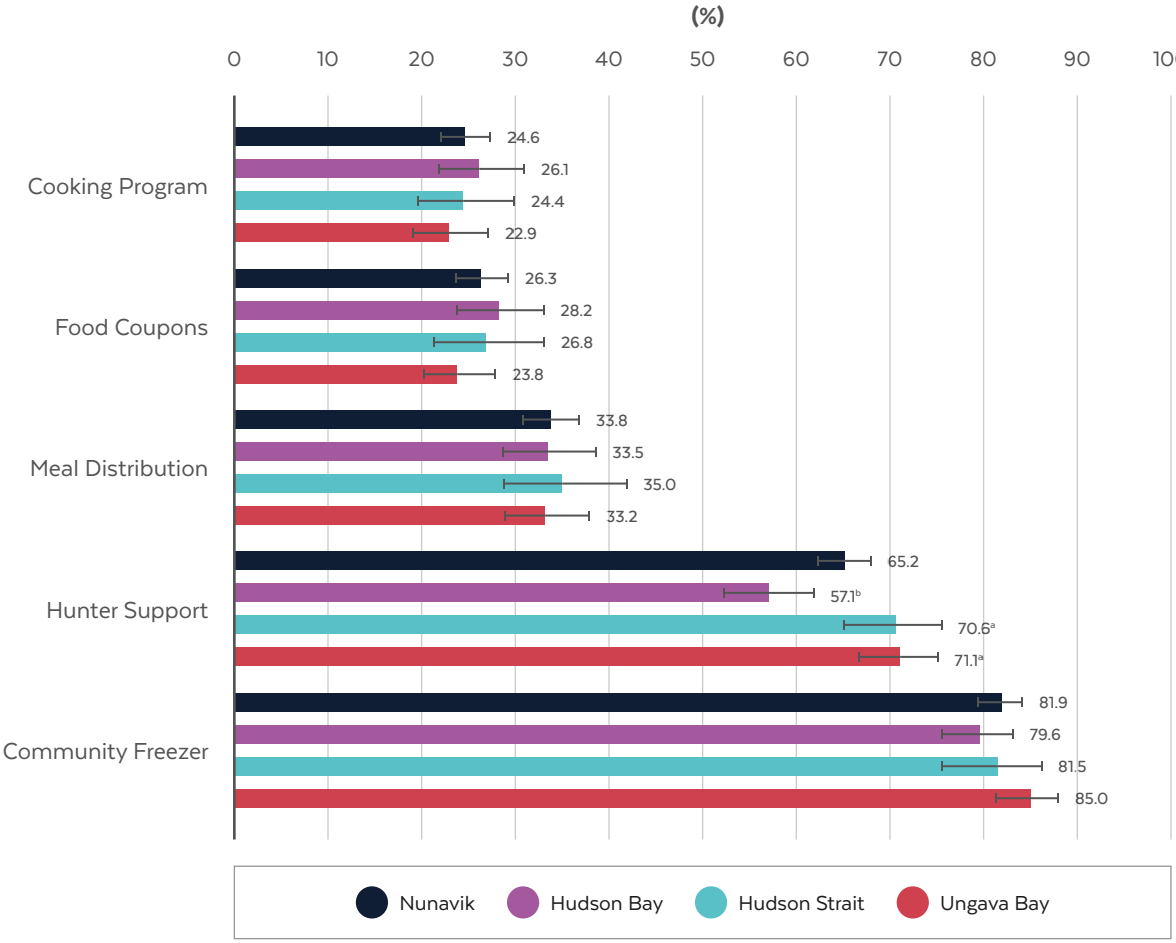


a, b, c Estimates with different letters are statistically different ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

Community freezers were the most commonly accessed support program in all ecological regions in Nunavik (Figure 7). This was followed by hunter support programs, meal distribution programs and then similar levels of use of both cooking programs and food coupons were reported. A greater proportion of Ungava Bay and Hudson Strait residents reported using their Hunter Support programs (71% and 71% respectively) than residents living in Hudson Bay communities (57%; Figure 7).

Figure 7 **Prevalence and 95-percent confidence intervals of food program use among Nunavimmiut by ecological region, population aged 16 years and over, Nunavik, 2017**



a, b Estimates with different letters are statistically different by ecological regions ($p < 0.05$).

Associations with food security status

When examining the associations between food security status and individual program use, differences existed among individuals that reported using the community freezer versus those that did not, and those that reported using food coupons versus those that did not (Table 23). Nunavimmiut who used their community freezer were more likely to have been classified as food insecure (81%) than Nunavimmiut who did not use their community freezer (65% insecure). Concordantly, a larger proportion of individuals using their community freezer were classified as moderately or severely food insecure (50% and 20% respectively) than those that did not use their community freezers (38% moderately insecure and 13% severely insecure). Similarly, a larger proportion of Nunavimmiut who used food coupons to support their access to food in the 12 months prior to the survey were food insecure (85%) than those that did not use food coupons (76% insecure), and, more specifically, a larger proportion were moderately food insecure (55% of Nunavimmiut who used food coupons versus only 46% of Nunavimmiut who did not use food coupons; Table 23). To the contrary, a smaller proportion of individuals using cooking programs in their community were marginally food secure (6%) than those who did not use these programs (13%).

Table 23 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to food access program use in the last 12 months, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Community Freezer												
No	34.6[a]	27.8	42.1	13.9*	9.1	20.8	38.2[a]	30.6	46.4	13.3[a]*	9.0	19.2
Yes	19.2[b]	16.7	22.0	11.0	9.0	13.4	50.3[b]	46.7	53.8	19.5[b]	17.0	22.4
Hunter Support												
No	23.8	19.8	28.3	11.2*	8.2	15.0	44.7	39.3	50.2	20.3	16.3	25.1
Yes	21.0	17.7	24.8	11.7	9.3	14.5	49.7	45.7	53.7	17.6	14.8	20.8
Cooking Program												
No	23.3	20.4	26.5	13.1[a]	10.8	15.8	46.5	42.8	50.1	17.2	14.7	19.9
Yes	18.4	13.8	24.0	6.2[b]*	4.0	9.5	53.6	47.2	59.8	21.8	16.9	27.6
Meal Distribution												
No	23.6	20.7	26.8	12.6	10.1	15.4	46.9	43.0	50.9	16.9	14.3	19.9
Yes	18.1	14.1	23.0	9.9*	6.9	14.0	50.8	45.2	56.5	21.1	17.0	26.0
Food Coupons												
No	24.5[a]	21.6	27.7	12.1	9.9	14.8	45.5[a]	41.7	49.2	17.9	15.4	20.8
Yes	15.4[b]*	11.2	20.7	9.9*	6.7	14.4	55.1[b]	48.9	61.1	19.7	15.3	24.9

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

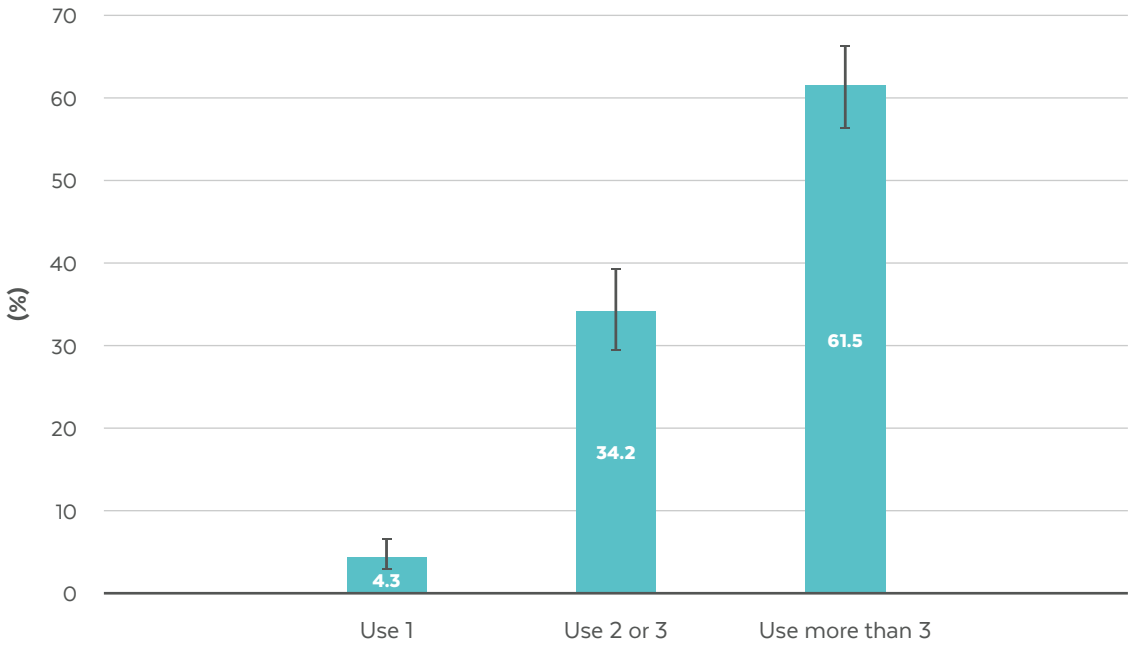
FOOD COPING STRATEGIES AND FOOD INSECURITY

General coping strategies

Prevalence

Nunavimmiut who reported experiencing a time when there was a clear shortage of food accessible to them were asked about the coping strategies they used. Specifically, Nunavimmiut who responded to the survey indicating that there was a time in the month prior to the survey that there was not enough to eat in their house (the single-item *Qanuippitaa?* 2004 question), or that they had gone a full day without eating because of a lack of resources to get food in the year before the survey (one of the USDA questions used in the calculation of food (in)security status), were asked questions about coping strategies they used to gain access to food. Among those that indicated they used at least one coping strategy (98%), the majority reported they used more than 3 different strategies to gain access to food when there was not enough to eat in the house (62%; Figure 8). A small percentage (2%) of Nunavimmiut did not use any of the listed strategies, and were excluded from the analyses shown in Figure 8, Table 23, and Table 24.

Figure 8 Prevalence and 95-percent confidence intervals of number of coping strategies used when not enough to eat in household among Nunavimmiut$^{\phi}$, population aged 16 years and over, Nunavik, 2017



* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who had used at least one coping strategy and who did not have enough to eat in their household in the last month or who had gone a whole day without food because of a lack of resources in the last 12 months.

Associations with socio-demographic characteristics

No significant differences were seen between groups by age, sex or pregnancy status in terms of the number of coping strategies an individual used when needing to get access to food. However, the number of different strategies used differed between ecological regions and household composition (Table 24). A greater proportion of residents in Hudson Bay communities reported using 2-3 strategies (40%) than residents in Ungava communities (29%). However, a smaller proportion of Hudson Bay residents (54%) reported using more than 3 different strategies than residents in Hudson Strait (70%) and Ungava Bay (68%; Table 23). A greater proportion of individuals living in multi-headed households reported using more than 3 strategies (64%) when compared to individuals living in single headed households (45%; Table 24).

Table 24 Prevalence and 95-percent confidence intervals of number of coping strategies used when not enough to eat in the house or individuals had gone a whole day without eating among Nunavimmiut$^{\phi}$ by age group, sex, pregnancy status, ecological region and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Use 1 Coping Strategy			Use 2 or 3 Coping Strategies			Use more than 3 Coping Strategies		
	%	95% CI		%	95% CI		%	95% CI	
Age Groups									
Youth 16-19	6.1**	2.8	12.8	45.5	34.9	56.5	48.4	37.6	59.3
Young adults 20-30	5.2**	2.3	11.2	34.8*	25.0	46.1	60.0	49.2	69.9
Adults 31-54	3.7**	1.8	7.3	26.2*	19.2	34.6	70.2	61.7	77.4
Elders 55+	NP			39.7*	27.6	53.2	58.0	45.1	69.9
Sex									
Male	3.1**	1.4	6.7	32.1	25.1	40.0	64.9	57.1	71.9
Female	6.0**	3.6	9.9	37.0	31.1	43.2	57.0	50.6	63.2
Pregnancy Status									
Pregnant	NP			36.8*	25.5	49.8	57.8	44.7	69.9
Not pregnant women of childbearing age	6.0**	2.9	12.0	38.5	30.6	47.0	55.5	47.0	63.7
Women of non-childbearing age	NP			33.3*	22.1	46.8	59.9	46.5	72.1
Ecological Region									
Hudson Bay	5.8**	3.4	9.7	40.2[a]	33.1	47.9	53.9[b]	46.4	61.3
Hudson Strait	NP			28.1*	17.7	41.5	69.9[a]	56.6	80.6
Ungava Bay	3.7**	1.5	9.0	28.8[b]	21.4	37.5	67.6[a]	58.8	75.2
Single-Headed Household									
No	4.4*	2.7	7.0	31.2[b]	26.3	36.6	64.4[a]	59.0	69.5
Yes	NP			51.9[a]	37.3	66.2	45.4[b]*	31.4	60.2
Sex of Single-Headed Household Member									
Male	NP			59.0*	37.4	77.6	38.4**	20.3	60.4
Female	NP			41.4*	26.1	58.5	55.9*	39.2	71.3

a, b Estimates with different letters are statistically different on that coping strategy use group ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

ϕ Only among Nunavimmiut who used at least one coping strategy and who did not have enough to eat in their household in the last month or who had gone a whole day without food because of a lack of resources in the last 12 months.

Association with food security status

When examining the association between the number of different coping strategies individuals reported using and their food security status[7], we found no significant associations (Table 25).

Table 25 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut$^{\phi}$ according to number of coping strategies used, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Coping Strategies												
Use 1	NP			NP			42.8**	22.4	66.0	34.6**	16.2	59.1
Use 2 or 3	8.0**	3.8	16.2	7.6**	3.4	16.4	45.5	36.8	54.4	38.8	30.9	47.4
Use more than 3	2.5**	0.8	7.2	NP			48.1	40.5	55.9	48.3	40.9	55.8

No significant differences between number of coping strategies groups on any of the food (in)security statuses.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

ϕ Only among Nunavimmiut who used at least one coping strategy when there was not enough to eat in the household and who did not have enough to eat in the house in the last month or who went a whole day without food because of a lack of resources to access food in the last 12 months.

7. A small number of Nunavimmiut who were asked the coping strategies questions were classified as 'food secure'. These individuals responded affirmatively to either the single-item *Qanuippitaa?* 2004 food security question (i.e. not enough food in the house to eat in the month before the survey), which was not used in calculation of 4-point food (in)security status, or they responded affirmatively to the USDA food security question about going a full day without food due to a lack of resources – a question that all participants were asked in this survey even they answered non-affirmatively to earlier USDA food security questions (see *Methodological Aspects* section of this report for details).

Individual food security coping strategies

Prevalence

Nunavimmiut use a range of specific coping strategies. Individuals responding to questions indicating that there was a time when there was not enough to eat in their house in the last month, or that they did not eat for a whole day because they didn't have the resources to get food in the last year, were asked about their use of seven different coping strategies to find out what they did to access food. The most commonly reported coping strategy was going to a family or friends house to get something to eat or ask for food (family or friends house; 81%) while the least common strategies reported were asking for more store credit (24%) and asking for help from a health worker (14%; 'Nunavik' percentages shown in Figure 10 later in this section).

Other coping strategies mentioned by participants that were not represented in the categories in the survey included: bootlegging alcohol, getting food from the Church, babysitting or performing other work, praying to God, selling carvings for money, or simply staying patient and waiting.

Associations with socio-demographic characteristics

Specific coping strategies use differed among Nunavimmiut by age, sex, and household composition. The results of these analyses for each individual coping strategy are presented in Tables 26-32. The results of analyses comparing the use of each coping strategy between females of differing pregnancy statuses and between ecological regions are presented in Figures 9 and 10 respectively.

Going to a family member or friend's house to eat or ask for food was less commonly reported by youth (aged 16-19; 68%) than other age groups (82-85%). It was also reported by proportionately more individuals that lived in single-headed households than those in multi-headed households (91% vs. 80%; Table 26).

Table 26 Prevalence and 95-percent confidence intervals of going to family or friend's house to eat or asking for food from family or friends when not enough to eat in household among Nunavimmiut$^{\phi}$ by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Family/Friends House		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	68.3[a]	57.4	77.5
Young adults 20-30	81.8[b]	71.6	88.9
Adults 31-54	85.3[b]	77.9	90.5
Elders 55+	84.4[b]	72.9	91.6
Sex			
Male	80.6	73.4	86.2
Female	81.7	76.9	85.7
Single-Headed Household			
No	79.5[a]	74.3	84.0
Yes	91.1[b]	81.1	96.1
Sex of Single-Headed Household Member			
Male	93.3	74.8	98.5
Female	87.9	73.9	94.9

a, b Estimates with different letters are statistically different ($p < 0.05$).

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

Asking the store manager for more credit to buy food was most commonly reported by adults (31%) and elders (30%), followed by young adults (aged 20-30; 18%) and youth (aged 16-19; 12%; Table 27).

Table 27 Prevalence and 95-percent confidence intervals of asking the store manager for more credit when not enough to eat in household among Nunavimmiut$^{\phi}$ by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Store Credit		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	12.0[a**]	6.5	21.0
Young adults 20-30	17.9[a,c*]	11.5	26.8
Adults 31-54	31.2[b]	23.5	40.2
Elders 55+	29.6[b,c*]	19.8	41.8
Sex			
Male	25.5	19.4	32.8
Female	21.1	16.4	26.6
Single-Headed Household			
No	24.1	19.7	29.2
Yes	21.8**	11.1	38.1
Sex of Single-Headed Household Member			
Male	23.6**	8.8	49.6
Female	19.0**	9.2	35.1

a, b, c Estimates with different letters are statistically different ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

Borrowing money for food from friends or family (borrow money) was more commonly reported by adults (70%) than youth (aged 16-19; 49%) and elders (46%). Among those living in a single headed household, borrowing money was more commonly used by females (71%) than males (43%; Table 28).

Table 28 Prevalence and 95-percent confidence intervals of borrowing money for food from family or friends when not enough to eat in household among Nunavimmiut$^{\phi}$ by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Borrow Money		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	49.4[a]	39.0	59.8
Young adults 20-30	62.3	51.3	72.2
Adults 31-54	69.5[b]	60.2	77.4
Elders 55+	46.2[a]	34.3	58.5
Sex			
Male	56.7	48.7	64.4
Female	64.9	58.8	70.6
Single-Headed Household			
No	61.5	55.9	66.8
Yes	53.9	39.4	67.8
Sex of Single-Headed Household Member			
Male	42.6[a*]	24.3	63.2
Female	71.1[b]	52.9	84.4

a, b Estimates with different letters are statistically different ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

Buying the cheapest food that feeds the most people (buy cheapest food) as a strategy to cope when there was not enough to eat in the household, did not differ significantly among Nunavimmiut by age, sex, or household composition (Table 29).

Table 29 Prevalence and 95-percent confidence intervals of buying the cheapest food that feeds the most people in the household when not enough to eat in household among Nunavimmiut$^{\phi}$ by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Buy Cheapest Food		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	54.8	44.1	65.1
Young adults 20-30	65.0	54.9	74.0
Adults 31-54	66.9	57.7	75.0
Elders 55+	72.5	59.4	82.6
Sex			
Male	64.3	56.1	71.7
Female	66.1	60.0	71.8
Single-Headed Household			
No	64.7	59.0	70.0
Yes	70.9	55.5	82.6
Sex of Single-Headed Household Member			
Male	65.1*	41.5	83.0
Female	79.6	62.5	90.1

No significant group differences for any of the subpopulation variables.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

Personally gathering country food as a coping strategy was reported by proportionately more men (77%) than women (42%; Table 30).

Table 30 Prevalence and 95-percent confidence intervals of going hunting/fishing/gathering country food myself when not enough to eat in household among Nunavimmiut[ϕ] by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	I Gather Country Food		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	54.3	43.7	64.5
Young adults 20-30	57.4	47.3	66.8
Adults 31-54	66.7	58.1	74.3
Elders 55+	66.3	54.8	76.1
Sex			
Male	76.6[a]	69.5	82.4
Female	42.2[b]	36.4	48.3
Single-Headed Household			
No	63.1	58.0	67.9
Yes	54.0	39.2	68.2
Sex of Single-Headed Household Member			
Male	62.1*	39.4	80.4
Female	41.8*	26.1	59.4

a, b Estimates with different letters are statistically different ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

Relying on someone else in the house to gather country food when there is not enough to eat was less commonly reported among individuals living in single headed households (53%) than individuals living in multi-headed households (77%; Table 31).

Table 31 Prevalence and 95-percent confidence intervals of someone else in the house going hunting/fishing/gathering country food when not enough to eat in household among Nunavimmiut$^{\phi}$ by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Someone Gathers Country Food		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	79.0	68.9	86.4
Young adults 20-30	68.0	58.1	76.5
Adults 31-54	75.4	66.8	82.3
Elders 55+	73.7	62.5	82.5
Sex			
Male	72.1	64.5	78.7
Female	75.4	70.1	80.1
Single-Headed Household			
No	76.9[a]	72.0	81.1
Yes	53.0[b]	37.8	67.7
Sex of Single-Headed Household Member			
Male	50.0*	28.9	71.1
Female	57.5*	39.6	73.7

a, b Estimates with different letters are statistically different ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

Finally, when examining the reports of who asked for assistance from a health worker to help them cope when there was not enough to eat in their household, no differences were seen among Nunavimmiut based on age, sex, or household composition (Table 32).

Table 32 Prevalence and 95-percent confidence intervals of asking for help from a health worker when not enough to eat in household among Nunavimmiut$^{\phi}$ by age group, sex and household head characteristics, population aged 16 years and over, Nunavik, 2017

	Ask Health Worker		
	Prevalence	Lower 95% CL	Upper 95% CL
Age Groups			
Youth 16-19	11.1**	6.0	19.5
Young adults 20-30	18.1*	11.3	27.7
Adults 31-54	11.5*	7.1	18.1
Elders 55+	17.6**	10.3	28.5
Sex			
Male	15.9*	11.0	22.4
Female	12.3*	8.8	16.9
Single-Headed Household			
No	14.6	11.0	19.0
Yes	12.1**	5.4	25.0
Sex of Single-Headed Household Member			
Male	NP		
Female	14.1**	5.8	30.3

No significant group differences for any of the subpopulation variables.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

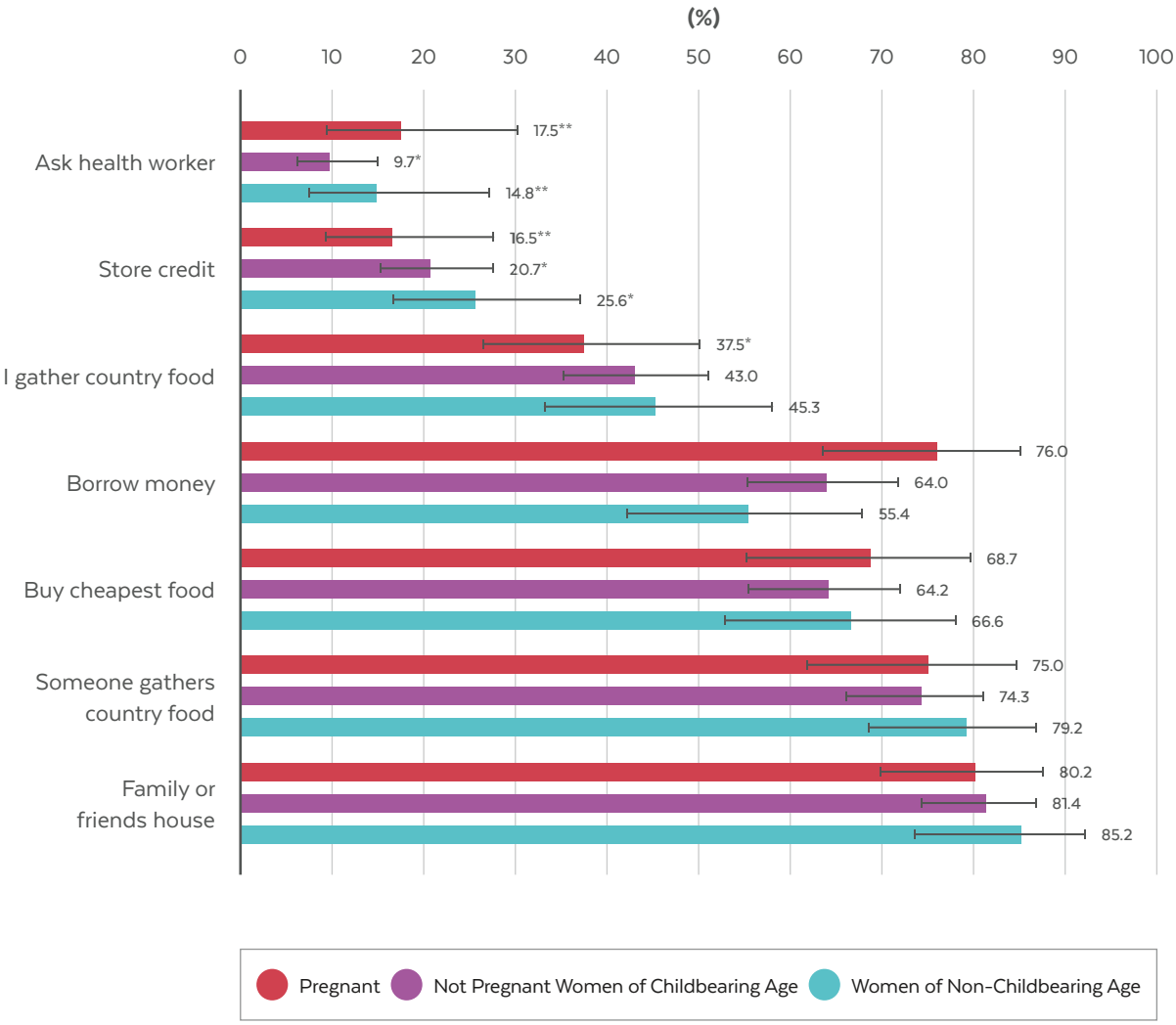
** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

ϕ Only among Nunavimmiut who did not have enough to eat in household in the last month or had gone a whole day without food because of a lack of resources in the last 12 months.

There were no statistically significant differences between women who were pregnant in the year before the survey (pregnant), women of childbearing age who were not pregnant in the year before the survey (not pregnant women of childbearing age), and women of non-childbearing age in terms of the individual coping strategies they used when there was not enough food to eat in the household (Figure 9).

Figure 9 Prevalence and 95-percent confidence intervals of coping strategies used when not enough to eat in household among Nunavimmiut$^{\phi}$ by pregnancy status, population aged 16 years and over, Nunavik, 2017



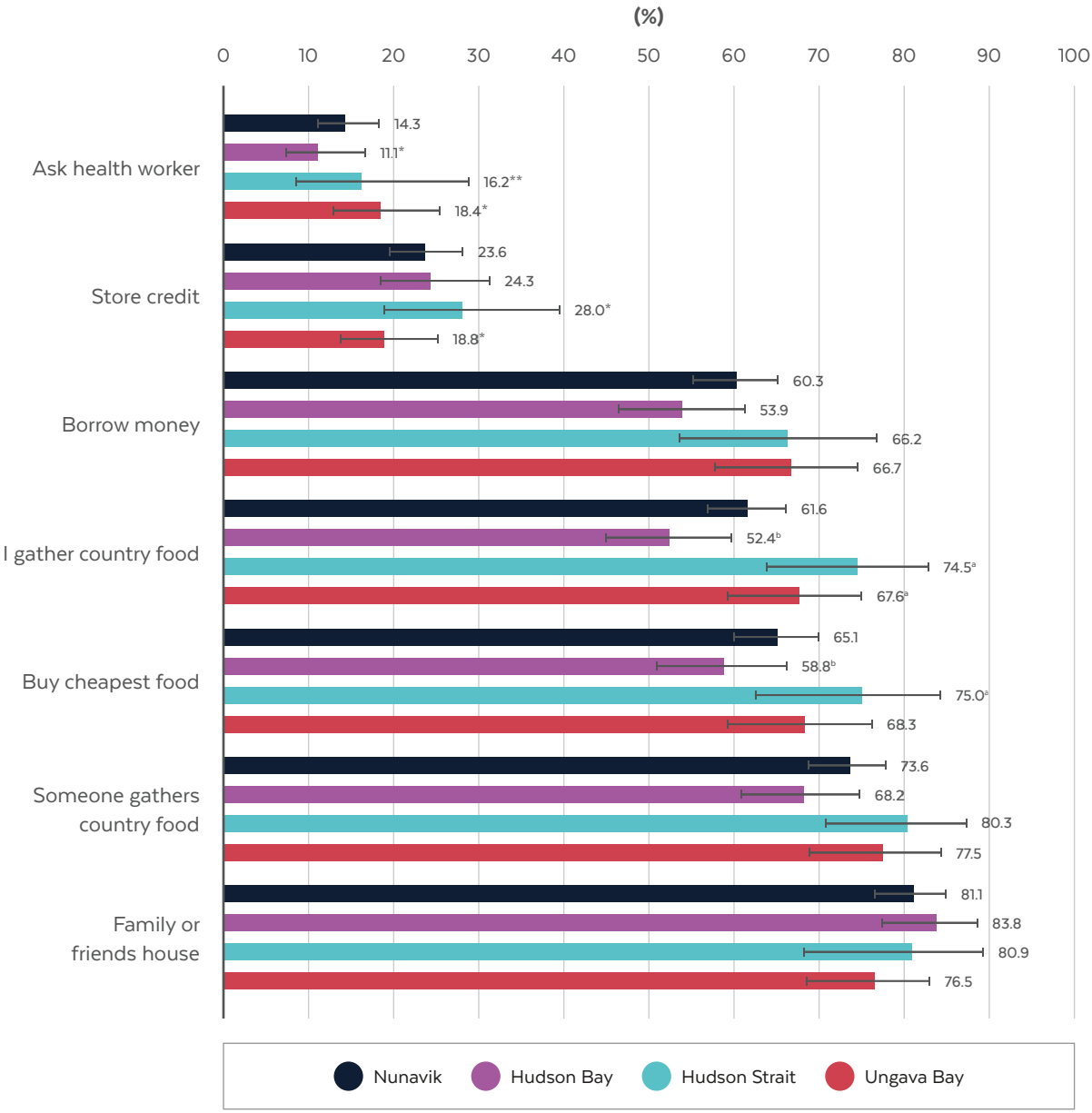
* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

ϕ Only among Nunavimmiut who did not have enough to eat in their household in the last month or who had gone a whole day without food because of a lack of resources in the last 12 months.

The use of each of the identified coping strategies to gain access to food did not differ between ecological regions in Nunavik with the exception of personally gathering country foods and buying the cheapest food that feeds the most people in the house (Figure 10). Personally gathering country foods (I gather country food) was mentioned by proportionately more residents of Ungava Bay (68%) and residents of Hudson Strait (75%) than Hudson Bay residents (52%; Figure 10). Buying the cheapest food that feeds the most people in the house (buy cheapest food) was mentioned by proportionately more residents of Hudson Strait (75%) than residents of Hudson Bay (59%; Figure 10).

Figure 10 Prevalence and 95-percent confidence intervals of coping strategies used when not enough to eat in household among Nunavimmiut$^{\phi}$ by ecological region, population aged 16 years and over, Nunavik, 2017



a, b Estimates with different letters are statistically different ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

ϕ Only among Nunavimmiut who did not have enough to eat in their household in the last month or who had gone a whole day without food because of a lack of resources in the last 12 months.

Association with food security status

Examining the association between food security status and use of individual coping strategies showed that Nunavimmiut who borrowed money when they did not have enough to eat in their house were more likely to be classified as moderately food insecure (52%) than those that didn't borrow money as a coping strategy to access food (38% moderately insecure). Those individuals that coped by choosing to buy the cheapest food that feeds the most people in the house as a strategy were more likely to be severely food insecure (52%) than those that did not use this strategy (28% severely insecure). Estimates of secure[8] and marginal food insecurity among individuals who used and did not use each coping strategy were either based on fewer than 5 participants and are therefore not reported (NP) or had unacceptable coefficients of variation and are therefore shown for illustrative purposes only (Table 33).

8. A small number of Nunavimmiut who were asked the coping strategies questions were classified as 'food secure'. These individuals responded affirmatively to either the single-item *Qanuippitaa?* 2004 food security question (i.e. not enough food in the house to eat in the month before the survey), which was not used in calculation of 4-point food (in)security status, or they responded affirmatively to the USDA food security question about going a full day without food due to a lack of resources – a question that all participants were asked in this survey even they answered non-affirmatively to earlier USDA food security questions (see *Methodological Aspects* section of this report for details).

Table 33 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut[ϕ] according to coping strategy used, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Family or Friends House												
No	7.5**	3.3	16.0	12.4**	4.5	29.6	45.6	33.5	58.2	34.6*	24.2	46.7
Yes	4.6**	2.4	8.8	2.7**	1.4	5.2	46.5	40.3	52.9	46.2	40.3	52.1
Ask Store Manager for More Credit[†]												
No	6.2**	3.5	10.8	6.1**	3.2	11.2	47.4	41.2	53.8	40.3	34.8	46.1
Yes	NP			NP			43.1	32.0	54.8	54.9	43.2	66.2
Borrow Money												
No	12.5**	7.2	20.8	8.6**	3.9	17.9	37.7[a]	29.2	47.0	41.2	33.1	49.9
Yes	NP			2.0**	0.9	4.8	51.8[b]	44.9	58.6	45.6	38.9	52.5
Buy Cheapest Food												
No	9.9[a]**	5.2	18.0	9.0**	4.7	16.6	53.0	43.2	62.5	28.1[a]	20.8	36.8
Yes	2.6[b]**	1.0	6.9	NP			43.1	36.3	50.2	52.0[b]	45.5	58.5
I Gather Country Food												
No	4.9**	2.5	9.5	5.3**	2.2	12.4	45.2	37.3	53.3	44.6	37.1	52.3
Yes	5.3**	2.5	11.0	4.1**	1.7	9.8	46.8	39.1	54.6	43.8	36.8	51.0
Someone Else Gathers Country Food												
No	NP			8.2**	3.5	17.8	42.8	32.8	53.5	45.0	35.1	55.3
Yes	5.6**	3.2	9.6	3.3**	1.3	8.0	47.8	41.3	54.3	43.4	37.6	49.4
Ask for Help from a Health Worker[†]												
No	6.0**	3.4	10.2	5.4**	2.8	10.0	47.8	41.8	53.9	40.8	35.2	46.6
Yes	NP			NP			38.2*	25.9	52.3	61.1	47.2	73.4

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

NP Data not presented ($n < 5$).

ϕ Only among Nunavimmiut who did not have enough to eat in the house in the month before the survey or who went a whole day without food because of a lack of resources in the 12 months before the survey.

† Could not run significance test because of 0 frequencies.

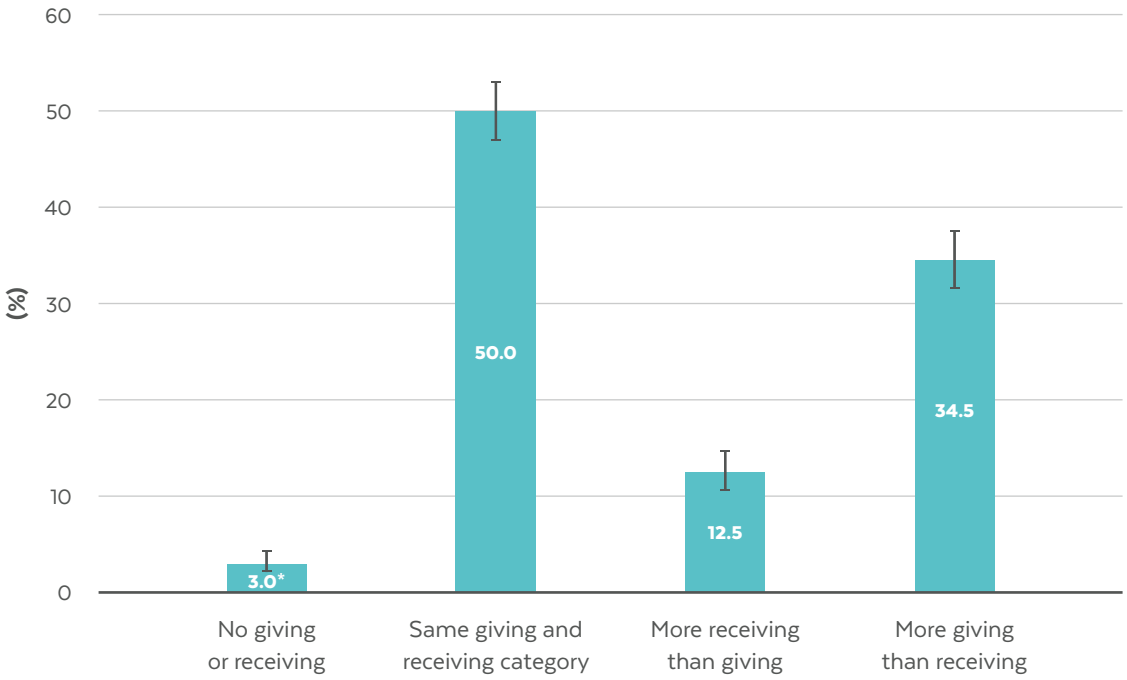
FOOD SHARING AMONG NUNAVIMMIUT

Balance between giving and receiving food

Prevalence

Sharing has always been an integral component of Inuit culture. Sharing food is a common means of access among individuals, between households and families and even between communities and regions. The *Qanuilirpitaa?* survey asked individuals how many households they typically received food from or gave food to in the past 12 months. Responses to each of these questions were examined individually but also combined to classify individuals as performing 'no giving or receiving', 'the same level of giving and receiving', 'more receiving than giving' or 'more giving than receiving' depending on the number of households they reported in each category. The large majority of Nunavimmiut participate in food sharing at some level (Figure 11). Half (50%) reported the same level of giving and receiving of food. The second most commonly reported category was 'more giving than receiving' (35%), followed by 'more receiving than giving' (13%), and finally 'no giving or receiving' (3%; Figure 11).

Figure 11 Prevalence and 95-percent confidence intervals of sharing food in the last 12 months among Nunavimmiut, population aged 16 years and older, Nunavik, 2017



* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

Associations with socio-demographic characteristics

A proportionately smaller number of youth (aged 16-19; 47%) and young adults (aged 20-30; 48%) reported the same level of giving and receiving of food compared to elders (58%; Table 34), whereas elders were less likely to report giving more food than they received (25%) compared to adults (aged 31-54; 35%), young adults (aged 20-30; 40%) and youth (aged 16-19; 34%; Table 34). No differences in any of the levels of food sharing were seen by sex, pregnancy status or ecological region of residents (Table 34).

Table 34 Prevalence and 95-percent confidence intervals of sharing food in the last 12 months among Nunavimmiut by ecological region, population aged 16 years and older, Nunavik, 2017

	No giving or receiving			Same giving and receiving			More giving than receiving			More receiving than giving		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Age Groups												
Youth 16-19	4.9**	2.6	9.2	46.6[a]	38.7	54.7	34.2[a]	27.3	41.8	14.2*	9.6	20.6
Young adults 20-30	NP			47.7[a]	41.4	54.1	39.9[a]	34.0	46.2	11.3*	8.0	15.8
Adults 31-54	4.3**	2.5	7.3	49.4	44.1	54.6	34.8[a]	30.1	39.9	11.4*	8.4	15.3
Elders 55+	1.8**	0.7	4.3	58.0[b]	51.2	64.5	24.8[b]	19.4	31.1	15.5*	11.0	21.3
Sex												
Male	4.1*	2.5	6.6	48.4	43.3	53.4	35.1	30.2	40.3	12.5	9.4	16.4
Female	2.0**	1.2	3.3	51.6	48.1	55.1	33.9	30.7	37.3	12.5	10.4	15.0
Pregnancy Status												
Pregnant	NP			43.5	34.8	52.7	40.0	31.7	49.0	13.0*	8.3	19.8
Not pregnant women of childbearing age	1.4**	0.6	3.0	53.0	47.9	58.0	35.3	30.6	40.3	10.3	7.7	13.8
Women of non-childbearing age	2.2**	1.0	5.0	56.1	48.7	63.3	26.5	20.6	33.4	15.1*	10.1	22.0
Ecological Region												
Hudson Bay	1.7**	0.7	4.2	50.9	45.7	56.1	33.7	29.0	38.7	13.8	10.7	17.6
Hudson Strait	3.8**	1.9	7.5	51.7	44.6	58.7	34.2	28.2	40.8	10.3*	7.0	14.8
Ungava Bay	4.1*	2.6	6.5	47.7	42.9	52.5	35.7	31.3	40.4	12.5	9.5	16.2

No significant differences between ecological regions for any of the sharing food groups.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Association with food security status

The relationship between sharing and food security status was examined. Nunavimmiut who gave food to more households than they received food from were less likely to be food insecure (72%) compared to those who received food from more households than they gave to (82% insecure) and those who gave and received food from a similar number of households (82% insecure; Table 35). Individuals who reported giving to more households than they received food from were less likely to be severely food insecure (11%) than individuals who received food from more households than they gave to (21% severely insecure), and individuals who gave and received food from a similar number of households (22% severely insecure; Table 35).

Table 35 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to sharing food status, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Balance in Sharing Food												
No giving or receiving – not engaged in sharing	31.6**	16.8	51.4	12.4**	4.6	29.4	33.5**	16.9	55.5	22.6**	10.8	41.4
Same giving and receiving category	18.5[a]	15.3	22.2	10.4	7.8	13.9	49.0	44.4	53.6	22.1[a]	18.4	26.2
More receiving than giving	18.3[a]*	11.6	27.6	6.5[a]**	3.6	11.5	54.0	44.9	62.8	21.1[a]*	15.2	28.7
More giving than receiving	27.7[b]	23.3	32.6	14.9[b]	11.4	19.3	46.0	40.8	51.3	11.4[b]	8.6	15.0

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

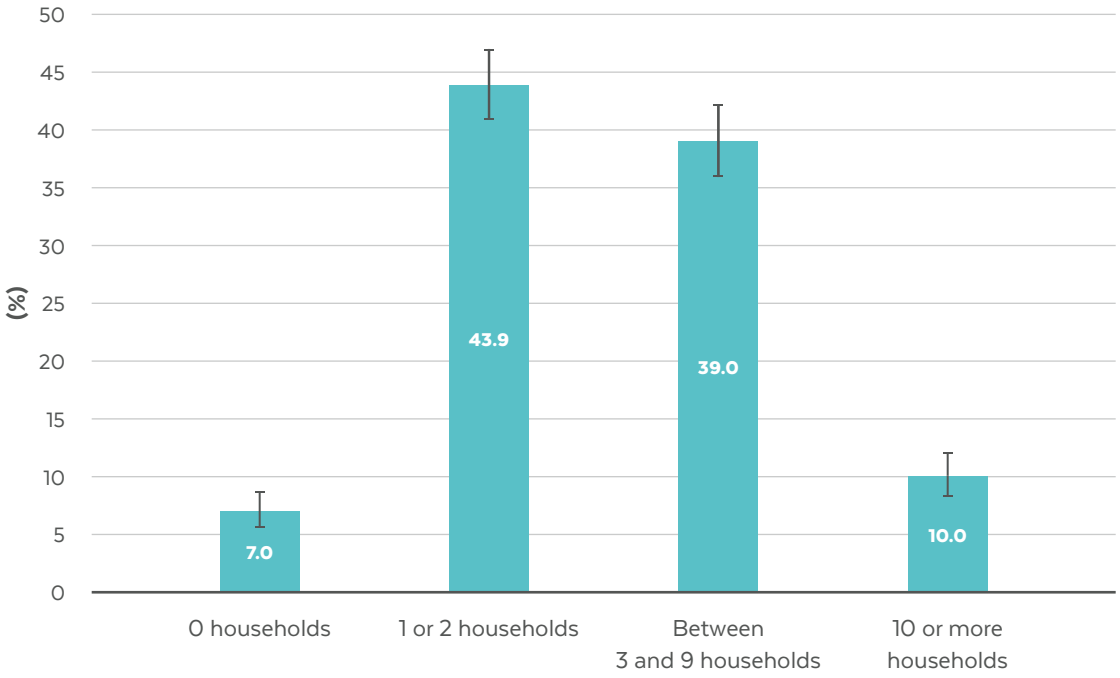
** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Giving food

Prevalence

Giving food to another household is prevalent in Nunavik with 93% of participants reporting having given food to 1 or more households in the 12 months prior to the survey (Figure 12).

Figure 12 Prevalence and 95-percent confidence intervals of the number of households Nunavimmiut gave food to in the last 12 months, population aged 16 years and older, Nunavik, 2017



Associations with socio-demographic characteristics

No differences were found in giving food for any of the socio-demographic characteristics (Table 36).

Table 36 Prevalence and 95-percent confidence intervals of the number of households Nunavimmiut gave food to in the last 12 months by age group, sex, pregnancy status, and ecological region, population aged 16 years and older, Nunavik, 2017

	0 households			1 or 2 households			Between 3 to 9 households			10 or more households		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Age Groups												
Youth 16-19	8.9*	5.7	13.6	44.9	37.3	52.8	38.7	31.2	46.7	7.5*	4.6	11.9
Young adults 20-30	6.1*	3.8	9.7	45.4	39.3	51.6	38.9	33.0	45.1	9.6*	6.4	14.1
Adults 31-54	7.0*	4.7	10.4	43.0	38.2	47.8	38.3	33.4	43.5	11.7*	8.6	15.6
Elders 55+	7.0**	4.2	11.5	42.8	36.1	49.9	41.2	34.7	48.0	9.0*	5.8	13.6
Sex												
Male	8.1*	5.8	11.4	40.9	36.2	45.8	40.7	35.7	45.9	10.2*	7.6	13.7
Female	5.9	4.5	7.8	47.0	43.5	50.5	37.3	33.9	40.8	9.8	7.8	12.2
Pregnancy Status												
Pregnant	8.3**	4.5	15.1	42.4	34.3	51.0	37.2	29.1	46.1	12.0**	7.0	19.9
Not pregnant women of childbearing age	4.6*	3.0	7.1	48.6	43.8	53.4	37.4	32.9	42.2	9.4	7.0	12.5
Women of non-childbearing age	5.6**	2.9	10.4	46.6	39.7	53.5	38.9	32.2	46.1	8.9*	5.5	14.3
Ecological Region												
Hudson Bay	5.6*	3.7	8.4	45.9	40.6	51.2	38.6	33.6	43.9	9.9*	7.0	13.8
Hudson Strait	6.5**	3.9	10.8	40.5	34.6	46.7	39.9	33.6	46.7	13.0*	9.2	18.1
Ungava Bay	9.1*	6.6	12.5	44.0	39.2	48.8	38.8	34.3	43.5	8.1*	5.8	11.1

No significant differences between ecological regions for any of the giving food groups.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Association with food security status

When examining the association between the number of households Nunavimmiut gave food to and food security status, those who gave food to 10 or more households were less likely to be classified as food insecure (66%) than individuals who gave to 1 or 2 households (82% insecure) and those who gave food to 3-9 households (79%; Table 37).

Table 37 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to number of households gave food to in the last 12 months, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Giving Food												
0 households	28.8*	18.5	42.0	6.4[a]**	2.7	14.2	46.5	34.7	58.8	18.2[a]*	11.1	28.4
1 or 2 households	18.5[a]	15.0	22.5	9.0[a,c]	6.8	11.7	50.9	46.2	55.6	21.6[a]	18.0	25.8
Between 3 and 9 households	21.3[a]	17.5	25.7	13.8[b]	10.4	18.1	47.8	42.4	53.3	17.0[a]	13.5	21.3
10 or more households	34.4[b]	25.5	44.4	17.2[b,c]**	10.2	27.5	40.1	30.9	50.2	8.3[b]**	4.3	15.5

a, b, c Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

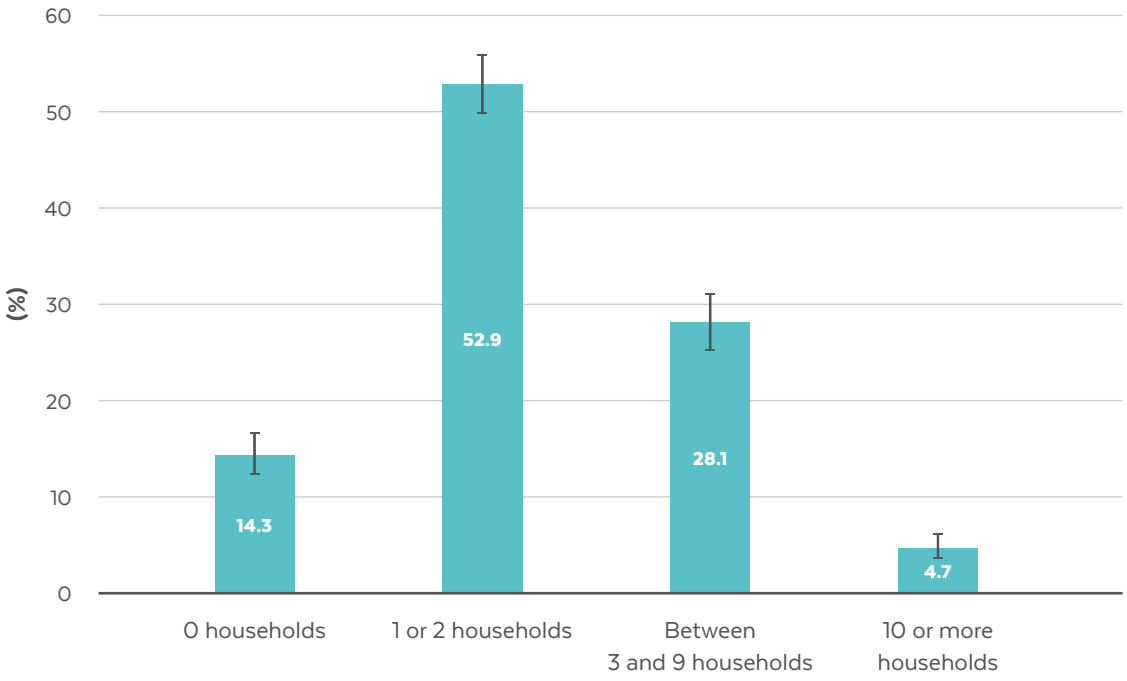
** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

Receiving food

Prevalence

Most Nunavimmiut reported receiving food from 1-2 other households (53%) while a smaller proportion received food from between 3 and 9 (28%) or 10 or more households (5%). Overall, 86% of Nunavimmiut reported receiving food from at least one other household in the year before the survey (Figure 13).

Figure 13 Prevalence and 95-percent confidence intervals of the number of households Nunavimmiut received food from in the last 12 months, population aged 16 years and older, Nunavik, 2017



Associations with socio-demographic characteristics

Similar to the reports of giving, no significant differences were seen in the number of households individuals reported receiving food from when looking at the data by age or sex (Table 38). However, a larger proportion of women of childbearing age who were not pregnant in the year prior to the survey received food from 1-2 households (54%) than women of non-childbearing age (45%), whereas the reverse pattern was observed for receiving food from 3-9 households (a smaller 25% of women of childbearing age who were not pregnant received food from 3-9 households compared to a larger 34% of women of non-childbearing age; Table 38). Also, elders were more likely to receive food from 10 or more households (10%) than adults (5%; Table 38).

Table 38 Prevalence and 95-percent confidence intervals of the number of households Nunavimmiut received food from in the last 12 months by age group, sex, pregnancy status, and ecological region, population aged 16 years and older, Nunavik, 2017

	0 households			1 or 2 households			Between 3 to 9 households			10 or more households		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Age Groups												
Youth 16-19	17.5*	12.6	23.9	50.7	43.7	57.7	29.0	22.6	36.3	2.8[a]**	1.4	5.4
Young adults 20-30	15.6	11.9	20.3	55.2	48.9	61.3	26.8	21.5	32.8	2.5[a]**	1.1	5.5
Adults 31-54	13.7	10.7	17.3	54.1	49.4	58.8	27.2	22.8	32.1	5.0[a]*	3.2	7.6
Elders 55+	11.0*	7.4	15.9	47.9	40.8	55.1	31.5	25.5	38.1	9.6[b]*	6.3	14.4
Sex												
Male	13.5	10.2	17.5	54.7	49.5	59.9	28.1	23.5	33.1	3.7*	2.3	6.0
Female	15.2	12.9	17.9	51.0	47.6	54.4	28.0	25.0	31.4	5.7*	4.2	7.8
Pregnancy Status												
Pregnant	17.7*	12.1	25.0	49.4	40.6	58.2	30.1	22.7	38.6	NP		
Not pregnant women of childbearing age	15.5	12.5	19.0	53.9[a]	49.4	58.4	25.3[a]	21.5	29.5	5.3*	3.3	8.3
Women of non-childbearing age	11.8*	8.0	17.0	44.7[b]	37.3	52.4	34.3[b]	27.6	41.8	9.2*	5.8	14.1
Ecological Region												
Hudson Bay	12.7	9.6	16.7	51.6	46.4	56.7	29.1	24.8	33.9	6.6*	4.5	9.5
Hudson Strait	13.9	10.4	18.3	51.2	44.3	58.1	31.0	24.6	38.2	3.9**	2.3	6.5
Ungava Bay	16.6	13.2	20.7	55.6	50.6	60.6	24.6	20.6	29.2	3.1**	1.9	5.1

No significant differences between ecological regions for any of the receiving food groups.

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution

Association with food security status

Nunavimmiut who received food from no other households were less likely to be classified as food insecure (67%) than Nunavimmiut who received food from 1 or 2 households (81% insecure) and individuals who received food from 3-9 households (79%; Table 39).

Table 39 Prevalence and 95-percent confidence intervals of 4-point scale food insecurity status among Nunavimmiut according to number of households received food from in the last 12 months, population aged 16 years and over, Nunavik, 2017

	Food Secure			Marginally Food Insecure			Moderately Food Insecure			Severely Food Insecure		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI	
Receiving Food												
0 households	32.6[a]	25.6	40.5	12.4*	8.5	17.7	43.0	35.2	51.1	12.0[a]*	7.9	17.9
1 or 2 households	19.5[b]	16.2	23.3	11.0	8.5	14.2	51.0	46.4	55.7	18.5[b]	15.2	22.2
Between 3 and 9 households	20.7[b]	16.3	26.0	12.3*	8.4	17.7	44.1	38.1	50.3	22.9[b]	18.3	28.1
10 or more households	28.3*	17.0	43.2	10.9**	4.7	23.4	52.1	38.6	65.3	8.6[a]**	3.9	18.2

a, b Estimates with different letters are statistically different on that food (in)security status ($p < 0.05$).

* Coefficient of variation is greater than 15% and lower than or equal to 25%. Estimate must be interpreted with caution due to the high sampling variability.

** Coefficient of variation is greater than 25%. Estimate is presented for illustrative purposes only and must be used with caution.

5 DISCUSSION

Food insecurity is increasingly recognized as a significant public health problem in many regions and countries around the world (FAO et al., 2020). In Canada, the prevalence of food insecurity varies considerably across jurisdictions, however, it is recognized that it is more common among individuals with a lower annual household income, single parent headed households, households with more children in them and among Indigenous populations and those in the North (Tarasuk and Mitchell, 2020). It is also recognized that it is a more challenging task to appropriately assess and understand the status and causes of food insecurity in Indigenous settings (Teh et al., 2017). In Nunavik, as in many other Indigenous regions, food comes from both the land and the store and is accessed through various means including economic (e.g., purchase of food or use of money to pay for supplies to go hunting), social (e.g., sharing, or use of a food support program), and physical (e.g., being able to go hunting, fishing, collecting country foods in the local environment, or simply getting to the local store). As a result, assessing the status of food insecurity in the Inuit food system can be challenging. At the same time, it is important to gather data that best describes food insecurity in the Inuit food system and can be compared with over time. This thematic report on food insecurity used a few different approaches to assessing and reporting on the topic. It adapted and applied a version of the widely accepted and commonly used USDA Food Security Survey Module. Adaptations were made to the tool to better capture the diversity of food types consumed in Nunavik and the different ways Nunavimmiut access food. Further, based on responses to questions asked in the survey, individuals' food security status was classified using the recognized 4-point, 3-point and 2-point scales to facilitate qualitative comparisons with reported prevalence estimates of food insecurity in other jurisdictions of interest. Finally, the same unique single question assessment used to classify an individual's food security status in 2004 was used again in this survey.

FOOD INSECURITY STATUS

The 4-point classification scheme of food insecurity recognizes the importance of identifying those individuals that are not yet compromising quality or quantity of food intake, but are often worried about their food access, and is now widely used today in Canada and elsewhere around the world (Tarasuk and Mitchell, 2020). Using this 4-point classification scheme with our modified questions to account for both store food and country food items and the many ways food is accessed by Nunavimmiut, it was found that greater than three-quarters (78%) of the Nunavik population was food insecure to a certain extent in the year prior to the survey. Nearly 12% were classified as being marginally food insecure, 48% were moderately food insecure and 18% were severely food insecure.

Using the unmodified USDA food security survey tool, which only refers to purchase of food from the store as a means of food access, it was found that 11% of households in the province of Quebec, 57% in Nunavut and 13% in Canada overall were food insecure in 2017-18 (Tarasuk and Mitchell, 2020). In that national survey, 28% of Indigenous households were also classified as being food insecure. A shortened version of the unmodified USDA tool was used in all Inuit regions as part of the Aboriginal Peoples Survey in 2012 and 2017. In 2012, that survey found that, 52% of Inuit in Inuit Nunangat, and 55% of Nunavimmiut over the age of 25 lived in food insecure homes (Arriagada, 2017). In 2017, the Aboriginal Peoples Survey document that 76% of Inuit 15 years and older in Inuit Nunangat, and 77% in Nunavik, lived in food insecure homes (ITK, 2021).

When using a 3-point classification scheme, which does not consider worrying about a lack of access to food as being an element of food insecurity, 67% of Nunavimmiut were considered to be food insecure. The 2007-08 International Polar Year Inuit Health Survey conducted in the 3 other Inuit regions used the unmodified USDA food security survey tool and a 3-point classifications scheme and reported 69%, 46% and 43% food insecurity in households in Nunavut, Nunatsiavut and the Inuvialuit Settlement region (ISR), respectively (Rosol et al., 2012).

When examining the responses to the same single food security question asked in the *Qanuippitaa*? 2004 Inuit Health Survey in Nunavik and in 2017, it was seen that the proportion of individuals reporting that there was a time in their house when there was not any food to eat was larger in 2017 (35%) than in 2004 (22%). While this single-item metric may be more indicative of a moderate to severe food insecurity experience of lacking food than an accurate assessment of overall food insecurity, the fact that a greater proportion of individuals reported experiencing this challenge in 2017 is of great concern. This is particularly concerning considering the attention that the issue of food insecurity has received over the last 10 years in Canada, and specifically among Indigenous populations (CCA, 2014).

Being classified as 'food insecure' in Nunavik under the *Qanuilirpitaa?* 2017 survey meant being worried 'sometimes' or 'often' that the food you had would run out before you could get more (66%). It also meant not being able to eat healthy meals (55%), having to cut the size of your meals or having to skip meals all together (26%), experiencing hunger and not being able to get food to eat (23%), or for 12% of Nunavimmiut, having to go for a full day without eating because of a lack of resources to get food. These results are noteworthy and consistent with experiences among other Inuit households reporting moderate, and in some cases, severe food insecurity (Rosol et al., 2011). These levels of food insecurity have also been associated with a number of negative health outcomes in Inuit and other populations (e.g., Bradette-Laplante et al., 2020; Lamoureux-Tremblay et al., 2020; Pirkle et al., 2014; Robert et al., 2022; Willow et al., 2011). Because of the ubiquitous nature of food insecurity in the population, further examination of the associations between specific experiences of food insecurity, rather than solely the global measure, such as those identified by affirmative responses to individual constructs in the tool as reported here, and health outcomes of interest may be more insightful (Rose, 2001) and are therefore being pursued in ongoing analyses.

SOCIO-DEMOGRAPHIC CHARACTERISTICS AND FOOD INSECURITY

In Nunavik, being food insecure was more common among Nunavimmiut who: were youth (aged 16-19; 87% insecure) as compared to young adults, adults or elders; had a salary of less than $20,000/year (85% insecure) or between $20 and $40,000/year (79% insecure) as compared to those reporting as salary of more than $40,000/year; had completed Secondary school (76% insecure) or less (82% insecure), as compared to those who had completed more than Secondary school; were unemployed or employed part-time or occasionally (83-86% insecure) compared to being employed full-time; lived in a Hudson Bay community (84% insecure) compared to living along Hudson Strait or on Ungava Bay; lived in a small community (82% insecure) compared to living in a large community; were pregnant (89% insecure) compared to non-pregnant women; lived in a house with 5 or more children (89% insecure) compared to households with 2 or fewer children; and who did not have access to a vehicle to move around town (88% insecure) compared to those who had a vehicle. No associations were seen between single or multi headed household status or sex; however, when considering specific questions, men reported experiencing hunger and not eating for a full day in higher proportions than women did.

Many of these factors identify individuals that are likely less independent, less able to find wage earning employment through which to earn money to purchase food or use to access country foods through various means, are living in households where there are more individuals to share food with, and who are perhaps less physically mobile in town. While these results originate from bivariate analyses only, and challenges to food access are very likely more complex than being driven by any one factor, the identification of very high prevalence estimates of food insecurity among groups such as youth and pregnant women is of significant concern considering the health outcomes that food insecurity has been associated with in Nunavik and elsewhere (e.g., shorter stature, poorer nutritional status, psychological distress, anxiety and depression, increased chronic disease risk, prematurity) (Bradette-Laplante et al., 2020; Duncan et al., 2018; Lamoureux-Tremblay et al., 2020; Pirkle, et al., 2014; Sandoval et al., 2020; see also other Thematic Reports in the *Qanuilirpitaa? 2017* series).

FOOD PREFERENCES

Most Nunavimmiut reported preferring a mix of country foods and store-bought foods (68%). Food preferences in Nunavik varied with age. Perhaps associated with habitual norms, a greater proportion of elders indicated that they prefer country foods compared to the other age groups. While this pattern of food preferences makes sense in terms of food norms and the many factors influencing a general transition towards the incorporation of more store food items in the Nunavimmiut diet and the Inuit throughout the North, preferences and behaviours should continue to be monitored as they have significant implications for our understanding of the availability and accessibility of healthy and safe foods, purchasing or hunting pressures on these foods, and therefore food security in the future.

HUNTING AND FISHING ACTIVITY AND FOOD INSECURITY

Access to country foods via hunting, fishing and harvesting seafood activities has often been argued to support food security among Inuit (CCA, 2014; Hoover et al., 2016; Huet et al., 2012). This was supported by findings from the present survey indicating that Nunavimmiut were more likely to be severely food insecure if they reported never spending time on the land (31%) versus those that reported going out occasionally or often on day trips (17%), for a couple of days (16%), or for a week or more at a time (14%). Access to country food species on the land is also reported to be increasingly challenged by the increasing costs associated with gas, equipment and supplies for hunting in the North, and climate and environmental change and variability (Beaumier et al., 2015; Guyot et al., 2006; CCA, 2014). Similarly, availability of country foods is influenced by climate change and variability and increasing human population numbers and pressure on species. However, hunters in this study who did not report either goose or caribou as being harder to hunt/find/catch in the 5 years prior to the survey were more likely to be food insecure (81%) than hunters who did not report these challenges (70% insecure; see *Hunting, Fishing, Gathering Thematic Report* for detailed analysis of participation in hunting, fishing and gathering). No association was seen between challenges in hunting any marine species and food security status either. It can be assumed that more frequent and longer duration participation in land-based activities is a marker for increased access to country foods and therefore less challenged access to food overall. Having a hunter in the household was associated with lower prevalence of food insecurity in other Inuit communities (Huet et al., 2012) and in Nunavik in the past, however we could not examine this relationship here as that information was not gathered in the current survey. It is important to note that while access to country foods appears to help reduce food insecurity, even among those with significant access to country foods, food insecurity remains high. Further, a decline in harvest of country foods for any reasons has been associated with a significant decrease in essential nutrient intake in other Inuit populations in the past (Rosol et al., 2016). Therefore, these associations are being examined further between harvesting, food security and nutritional status in this dataset.

FOOD PROGRAM USE

The use of community and regional food programs to support access to food and protect against food insecurity is common in the region. Most Nunavimmiut had used at least one food access program in the 12 months prior to the survey (93%). The most commonly used programs included community freezers (82%) and Hunter Support Programs in the communities (65%), illustrating the emphasis on the use of support programs to facilitate country food access in particular. Community food program use has received moderate attention in other Inuit regions previously (Ford et al., 2012, 2013; Kenny et al., 2018; Lardeau et al., 2011; Organ et al., 2014;). The data gathered under the *Qanuilirpitaa? 2017* survey provides valuable insights into use and users of these programs and their associations with food security in Nunavik.

Hunter Support Program use was less common among Nunavimmiut living along Hudson Bay (57%) than individuals living elsewhere (Hudson Strait and Ungava Bay: 71%). Community freezers were more commonly used by elders (90%) than adults (84%), young adults (aged 20-30; 81%) or youth (69%). The same pattern existed when examining the reported use of Hunter Support Programs (Elders: 77%, Adults: 68%; Young adults 20-30: 61%, Youth: 52%). Deliberate operations of some of these programs at the community level towards increasing access to certain groups (e.g. Community freezers and elders, Food coupon programs and pregnant women) likely explains the patterns seen. Accessing some food programs was associated with a greater likelihood of being food insecure. For example, Nunavimmiut who used the community freezer were more likely to have been food insecure (81%) than those who did not (65% insecure). Similarly, a larger proportion of Nunavimmiut who used food coupons were food insecure (85%) when compared with those that did not (76% insecure). While these data potentially signify the importance of these programs in supporting individuals' access to foods, temporal data on access and use is needed to better understand program contribution to individual food security status.

FOOD INSECURITY COPING STRATEGIES

Around one-third of Nunavimmiut reported that they had experienced a time in the month prior to the survey when they did not have enough to eat in their house (35%), and just over one in ten mentioned they went a full day without eating because they did not have the resources to get food in the last year. Among those that reported this, individuals identified a number of coping mechanisms they used to access food. Among the most frequent coping strategies mentioned were: gathering country food themselves (62%), having someone else in their household gather country foods (74%), asking for food from family/friends (81%), buying the cheapest food that would feed the most people in the house (65%), or borrowing money for food from family/friends (60%). Modifying eating habits and reducing the quantity or quality of food consumed, accessing institutional food programs, or relying on social networks for sharing were also the most commonly reported coping mechanisms cited in other Inuit and Indigenous studies (Beaumier and Ford, 2010; Gilbert et al., 2021; Tam et al., 2014).

Coping strategy use varied by age, region of residence but not by sex. Hudson Bay residents were less likely to gather country food themselves (52%) compared to those living along Hudson Strait (75%) or the Ungava Bay Bay (68%). Hudson Bay residents were also more likely to buy the cheapest food that would feed the most people (59%) compared to Hudson Strait (75%) or Ungava Bay (68%) residents. Nunavimmiut youth (16-19) were less likely to ask for food from family/friends (68%) than individuals of older age groups. Whether these patterns of coping strategy use mirror socio-economic, cultural or other characteristics of these sub-populations within Nunavik (see *Sociocultural Determinants of Health and Wellbeing Wellness Thematic Report* and *Hunting, Fishing and Gathering Thematic Report*) is the subject of ongoing analyses. A region-wide documentation and examination of such coping strategies has not been undertaken previously. The bivariate analyses reported here can help identify and target particularly vulnerable groups for prioritization when implementing future food support interventions.

FOOD SHARING AMONG NUNAVIMMIUT

Sharing has always been an integral value and practice within Inuit culture (Kishigami, 2000, 2004) and this still holds true today. Greater than 95% of Nunavimmiut reported that it is an important Inuit value (see the *Sociocultural Determinants of Health and Wellness* Thematic report). Sharing food (both store and country food items) is a common means of access among individuals, between households and families and even between communities and regions and is still widely practiced. The vast majority of participants in this survey reported giving food to (93%) or receiving food from (86%) at least one other household in the year prior to the survey. Sharing is associated with food security status as well. Nunavimmiut who gave food to more households than they received from were less likely to be food insecure (72%) than those who received from more households (82%) or gave and received from the same number (82%). Individuals that reported giving to more households than they received from were less likely to be severely food insecure (11%) than those who received from more houses than they gave to (21%) or than those that gave and received to the same number of homes (22%).

This pattern is reflected in the associations between food security status and the number of houses individuals reported giving food to or receiving food from in the year prior to the survey as well. Giving food to more households (10 or more) was associated with a lower likelihood of being food insecure (66%) than giving food to fewer households (1-2-82%, or 3-9-79%). Giving to 10 or more households was also associated with being less likely to be severely food insecure (8%). Finally, those who received food from no other households were less likely to be food insecure (67%) than those who received from 1-2 (81%) or 3-9 households (79%).

These patterns of sharing, and their association with food security status, likely reflect who has more food to give and who is in more need of receiving food through sharing, and are supported by other work on this topic elsewhere in the North (Collings et al., 2015; Ford & Beaumier, 2011; Ready, 2018). At the same time, the nature of sharing networks and behaviours, or their influence on store or country food access should not be over simplified as it has been shown to be quite complex and intertwined with other resources, socio-economic status, cultural practices and norms (e.g. Dombrowski et al., 2013; Moses et al., 2017; Newell et al., 2020; Quintal-Marineau, 2017). Examinations of these multivariate relationships are needed to better understand the nature of sharing and its role in supporting food security in the region.

LIMITATIONS

Food insecurity is a complex phenomenon influenced by many factors at different scales. While helpful in identifying the status of different groups in the population, and characterizing more vulnerable groups and individuals requiring attention, bivariate analyses can only shed limited light on this multi-factor issue. Further multivariate analyses are required on many of the topics reported here to show further insight.

This is the first-time food insecurity status has been calculated using this specific adapted version of the USDA scale in Nunavik. While comparisons between regions are interesting and valuable to make, it is important to note that direct comparisons should be made with caution. Differences in the scale at which participants were recruited (e.g. *Qanuilirpitaa?* – individual scale, IPY-IHS-household scale, Provincial and Canadian statistics-household scale), specific wording used in the questions (e.g. *Qanuilirpitaa?* 2017 reminded participants that "food" referred to both store food and country food items; the IPY-IHS survey did not; IPY – IHS and Provincial and Canadian statistics included the reasoning for challenges to access "…because of a lack of money to buy food" as compared to "because of a lack of resources to get food" as was included in this survey), the lower age limit of participants (IPY-HIS and Provincial and Canadian statistics-adults 18 and over versus *Qanuilirpitaa?* 2017-16 years and over), and a lack of age-adjustment between datasets reported in the different studies, are all potential reasons for differences that should be considered.

At the same time, we believe that the modifications made in this survey have resulted in an adapted tool that is the most inclusive of the different kinds of food and means of accessing food in the Inuit food system. Further analysis is underway to continue exploring the conceptual and analytical modifications of this tool, their implications on the prevalence estimates generated, and their applicability to the Inuit food system in the region.

6 CONCLUSION

The adapted food security assessment tool used in this survey has provided region-wide results we believe are more inclusive of the state of challenges in accessing the diversity of foods through the many ways Inuit access food in the region than has been reported before. Findings clearly indicate that food insecurity is an important crisis and a serious public health issue among Nunavimmiut and in particular, youth, pregnant women and Hudson Bay residents. Further, it appears that a greater proportion of the population are challenged in regard to their access to food in 2017 than was the case in 2004. More in-depth multivariate analyses are needed to better identify food security determinants as well as associations with country and market food consumption frequencies, nutritional status as well as physical and mental health outcomes among different groups, particularly youth, pregnant women and households with numerous children. In light of the growing socio-ecological, demographic and economic changes in the region, findings on food security associations with key socio-demographic characteristics, community food program use, coping strategies and food sharing demand continued attention. Mobilisation of multiple sectors is required to better understand and take action on this important topic across Nunavik and at the provincial and national levels. Food insecurity of this scale represents a significant social and environmental injustice.

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