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ᑭᓄᓐᓂᓐ 2017

HOUSING AND DRINKING WATER

QANUILIRPITAA? 2017

Nunavik Inuit Health Survey



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



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RÉGIE RÉGIONALE DE LA NUNAVIK REGIONAL
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In memory of Audrey Flemming and Linda Shipaluk.

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INSPQ	Institut national de santé publique du Québec
KMHB	Kativik Municipal Housing Bureau
PPH	People per house
PPR	People per room

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 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, Innuitsivik 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. This 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

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

would remain in each community – a situation that 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 et Gagnon, 2020).

2 INTRODUCTION

Across Canada Indigenous populations experience disparities in access to adequate and appropriate housing, a situation recognized as a chronic source of social and health inequities (Inuit Tapiriit Kanatami, 2019; National Collaborating Centre for Aboriginal Health, 2017). While patterns of land use and dwelling began to change with the arrival of Europeans in the 18th century, it was not until the Second World War that most communities in their current form started to develop in the North. In the 1950s and 1960's, the Canadian government intensified the relocation and settlement process of Inuit into permanent communities. The houses people were provided with were often made of poor quality materials that deteriorated rapidly in the harsh climate. They were uncomfortable to live in, unsuitable to family life and poorly suited to traditional activities (Dawson, 2006; Tester, 2009). The coercive transition into settlement living without adequate resources fostered the conditions of overcrowded and poor quality housing that are today commonplace in many communities across Inuit Nunangat. This situation compromises the health of the population and the capacity of communities for social and economic development (Knotsch & Kinnon, 2011; Inuit Tapiriit Kanatami, 2019; National Collaborating Centre for Aboriginal Health, 2017).

Across Inuit Nunangat, the housing market is largely subsidized. In Nunavik, 86% of the population lives in social housing (Statistics Canada, 2017a). There are provisions for housing and municipal development in the James Bay and Northern Quebec Agreement. Subsidized housing in Nunavik is thus a negotiated benefit of the land claim agreement rather than a form of social welfare as in other parts of the province and the country. Demographic and population changes maintain a strong demand for the construction of new housing. The annual residential construction, limited by the short construction season and the high cost of materials, does not keep up with the demand for housing.

In Canada, a dwelling is considered acceptable if it is in adequate condition, i.e. that it does not require major repairs, is suitable in size to accommodate the composition of the household (an indicator of overcrowding), and is affordable (Canada Mortgage and

Housing Corporation, 2018). At the 2016 Canadian census, 32% of the population in Inuit Nunangat were living in a dwelling needing major repairs and over half (52%) in a dwelling with at least a one-bedroom shortfall (Statistics Canada, 2017b). In general, the housing situation in Nunavik is comparable to that of Inuit Nunangat: 24% of Nunavimmiut reported living in dwellings needing major repairs and 52% in a dwelling not suitable in size (Statistics Canada, 2017b). These proportions are much higher than for the rest of Canada where 7% of the population lives in dwellings needing major repairs and 5% in dwellings with at least a one-bedroom shortfall (Statistics Canada, 2017a). Overcrowding, housing shortages and challenging socioeconomic conditions contributes to housing insecurity in the region. Many move houses often or struggle to find a place to call home (Perreault et al., 2020). While the prevalence of homelessness in Nunavik is not known, hidden homelessness probably best characterizes the situation, as extreme cold temperatures prevent people from sleeping outdoors (Inuit Tapiriit Kanatami, 2014; Knotsch & Kinnon, 2011).

Housing is a human right and a fundamental determinant of health (Inuit Tapiriit Kanatami, 2014; National Collaborating Centre for Aboriginal Health, 2017). In Inuit communities, inadequate housing conditions and overcrowding have been associated with food insecurity (Ruiz-Castell et al., 2015), chronic stress (Riva et al., 2014), poor mental health outcomes (Gray, Richer, & Harper, 2016), and infectious diseases such as tuberculosis (Khan et al., 2016). Inuit children suffer the highest hospitalization rate for lower respiratory tract infection in the world, a condition that has been associated with overcrowding and poor ventilation in the house (Kovesi et al., 2007). With an average age of 27.7 years in 2016 (Statistics Canada, 2018), the Inuit population is the youngest in the country, putting the health of children and youth at the center of the housing crisis.

Closely tied to housing conditions and infrastructure is the question of water. In all communities in Nunavik, with the exception of Kuujuaapik, permafrost makes it too costly for municipalities to use an underground water supply system (Allard, Lemay, Barrette, L'Herault, & Sarrazin, 2012; Société d'habitation du Québec, 2014). Water is

delivered to households by truck and stored in tanks that are regularly filled by municipal services. Water tank cleaning for social housing units is the responsibility of the Kativik Municipal Housing Bureau (KMHB) and is done periodically (KMHB, 2016).

Using data from *Qanuilirpitaa? 2017*, this report describes the housing conditions in Nunavik in 2017. The report is organized in three sections: household size, composition

and overcrowding; structural dimension of house, including repairs needed and drinking water; and hidden homelessness and residential mobility. Variation in housing indicators by participants' sex, age group, coast of residence, community size and socioeconomic circumstances are also examined. When possible, results are compared to those from the 2004 *Qanuipitaa? 2004* survey.



3 METHODOLOGICAL ASPECTS

Nunavimmiut 16 years and over answered questions about housing conditions and household composition. The questions were included in the psychosocial and sociodemographic questionnaires of *Qanuilirpitaa?* 2017. The questions used to collect the data are listed in Appendix A. Most questions had multiple choice answers. In some cases, similar categories with a small number of answers and a high coefficient of variation were grouped together.

The first section presents information on household size, composition and overcrowding. Respondents reported the total number of people usually living in their house (household size), and the number of children (under 5 years old and 5 to 17 years old) and adults (18 to 54 years old and 55 years and over). From this information a household composition variable was created to compare households with: adults only, one adult with children, two adults with children, and more than two adults with children. Information about the dwelling, such as the number of rooms and bedrooms, area size, type of dwelling (detached unit, duplex, unit in a multiplex) was provided by the KMHB. This information was merged to the *Qanuilirpitaa?* data file using the house number of respondents. To preserve confidentiality, the two databases were merged by staff at the Institut national de santé publique du Québec. The ratio of the number of people per room (PPR) is used as an indicator of overcrowding. This indicator is calculated by dividing household size by the number of rooms in a dwelling, excluding bathrooms, halls, vestibules, and rooms used solely for business purposes (Statistics Canada, 2017c). A household is considered overcrowded when the PPR ratio is above one. Nine percent (9%) of participants were missing information on their house number; information on overcrowding is thus missing for these participants.

The second section of the report concerns the structural aspects of dwellings, including the need for repairs, as perceived by respondents, and drinking water. Respondents reported whether their dwelling was in need of regular maintenance, only, or whether it needed minor or major repairs. Minor repairs include things such as missing or loose tiles and defective steps, railings or siding.

Major repairs are problems that involve the structure and major systems of a dwelling, including defective plumbing or electrical wiring, as well as structural repairs to walls, floors and ceilings (Statistics Canada, 2017c). With regards to drinking water, people were asked about their main source of drinking water, in winter and summer. Possible responses included: tap water at home, tap directly at the water plant, bottled water, and water sourced from lakes, rivers, snow, or ice. Methods for water treatment used at home were also reported (boiling, filtering, or any other type of treatment). Participants reporting using bottled water or getting water from natural sources were asked to provide the main reason for not using municipal water as their main source of drinking water. People also reported the last time they were aware that their dwelling's water tank had been cleaned; responses included in the last month, in the last year, more than two years ago, and do not know.

Finally, results on hidden homelessness and residential mobility are presented. Hidden homelessness refers to people living temporarily with others (family, friends, and strangers), but without any guarantee of continued residency or any immediate prospect for accessing permanent housing (Canadian Observatory on Homelessness, 2012). It was assessed with the question "During the last 12 months, were there people living in your house for a certain period of time because they had nowhere else to live (excluding visitors)?" To assess residential mobility, people were asked how many times they had moved houses over the past 12 months.

Results are presented for Nunavik, and for sub-groups of the population using cross-tabulation by sex and age groups (16 to 30 years, 31 to 54 years and 55 years and over). Results are also cross-tabulated by coast (Hudson: Kuujjuarapik, Umiujaq, Inukjuak, Puvirnituaq, Akulivik, Ivujivik, and Salluit; Ungava: Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq, Kuujjuaq, and Kangiqsualujjuaq), and community size (large communities: Kuujjuaq, Salluit, Puvirnituaq and Inukjuak; small communities: Kuujjuarapik, Umiujaq, Akulivik, Ivujivik, Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq and Kangiqsualujjuaq). Finally, results are cross-

tabulated by annual personal income (<\$20 000 vs. ≥\$20 000) and employment status (employed vs. not employed). “Employed” includes full-time, part-time and occasional work or self-employment, whereas “not employed” includes hunter support program, housework, retired/pension, employment insurance, parental leave, income support, student or other sources of income. In stratifying by income, respondents who did not know their income level (12%) were excluded. For selected variables, stratification by household overcrowding (presence vs. absence) was examined.

Comparison tests were performed with a global chi-square test for categorical variables to examine whether any proportion was different across categories. In the presence of a significant result ($p < 0.05$), two-by-two comparisons were performed to further identify statistically significant differences between categories. These tests involved the construction of a Wald statistic based on the difference between the logit transformations of the estimated proportions. Only significant differences at the 5% threshold are reported in the text. Full results are presented in the tables in Appendix B. Significant differences between categories are denoted in the tables and figures using superscripts. A response category “Do not know/No response/Refused to answer” (DK/NR/R) is included in the results only when the combined response rate for these options is above 10%.

Results of the 2017 survey are compared to those of the 2004 *Qanuillirpita?* survey for variables that were measured similarly in the two surveys. In the 2004 survey, information on housing conditions was collected at the household level; therefore, participants from the same household were attributed the same value. This allowed for comparison of the data with 2017, where information on housing conditions was collected at the individual level. Statistical tests were performed to see if the differences observed between 2004 and 2017 are due to demographic changes; they are discussed when relevant.

All of the percentages presented in this report are estimates yielded from a sample and produced using weights generated by the INSPQ. The variance of estimates is expressed using 95% confidence intervals and coefficients of variation, calculated using “bootstrap” weights. Coefficients of variation (CV) represent the accuracy of an estimate. Estimates with a CV with values lower than 15% are reliable. Estimates with a CV between 15% and 25% show high sampling variability, meaning that the estimates are less reliable; such estimates are accompanied by an asterisk * and should be interpreted with caution. Estimates with a CV greater than 25% are unreliable; they are accompanied by a double asterisk ** and are presented for information purposes only. An estimate generated with fewer than five observations is replaced by NP (data not presented) to prevent identification of participants. Finally, considering the different percentages of completion for all blocks of the interview, different weights were given to different blocks to ensure that the results would be as representative as possible of the whole population.

4 RESULTS

4.1 HOUSEHOLD SIZE, COMPOSITION AND OVERCROWDING

(5.0 PPH). Average household size was larger on the Hudson coast (5.0 PPH) compared to the Ungava coast (4.4 PPH), but no variation was observed by community size. Overcrowded households were twice as large as non-overcrowded households (7.3 vs. 3.6 PPH).

4.1.1 HOUSEHOLD SIZE

On average, there were 4.8 people per house (PPH) in *Qanuilirpitaa?* 2017 compared to 5.6 PPH in *Qanuippitaa?* 2004 (Table 1). Average household size was lower for Nunavimmiut aged 55 years and over (4.1 PPH) compared to those aged 31 to 54 (4.8 PPH) and 16 to 30 years old

Table 1 Household size (mean) by survey year, sex, age, coast of residence, and overcrowding, population aged 16 years and over, Nunavik, 2004 and 2017

Total		Sex		Age group			Coast of residence		Overcrowding ^a	
2004	2017	Men	Women	16-30	31-54	≥55	Hudson	Ungava	Yes	No
5.6	4.8 ¹	4.7	4.9	5.0	4.8	4.1 ¹	5.0 ¹	4.4	7.3 ¹	3.6

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

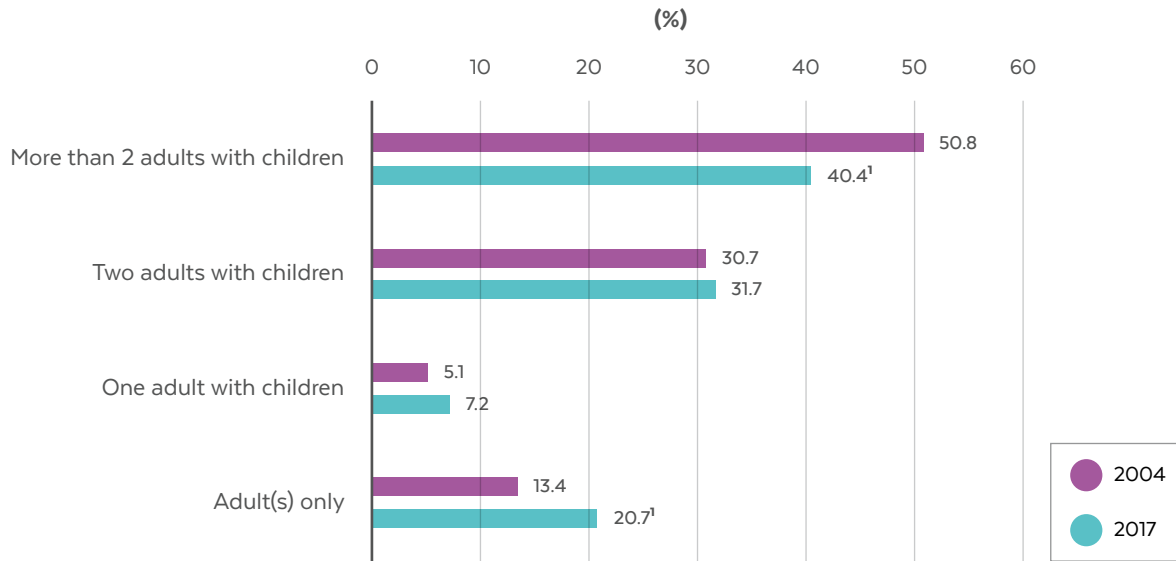
1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

4.1.2 HOUSEHOLD COMPOSITION

One in five households (21%) were composed of adults only. This is a marked increase from the 2004 survey, where only 13% of Nunavimmiut lived in adult-only households (Figure 1). Most households were composed of two adults with children (32%), or of more than two adults with children (40%). There were fewer households with more than two adults in 2017 compared to 2004 (51%).

In comparison to women, more men were living in adult-only households (17% vs. 25%, respectively, Figure 2). Living in adult-only households was also significantly higher for individuals aged 55 years and older, in comparison to other age groups (Table C, Appendix B). Women were more likely than men to be single parents (10% vs. 4%). The proportion of households composed of more than two adults with children was higher on the Hudson coast compared to the Ungava coast (45% vs. 34%). This household composition was also more prevalent among Nunavimmiut with an annual income lower than \$20 000 (44% vs. 34% for those with an income of \$20 000 or more) and living in overcrowded dwellings (70%) (Table D, Appendix B).

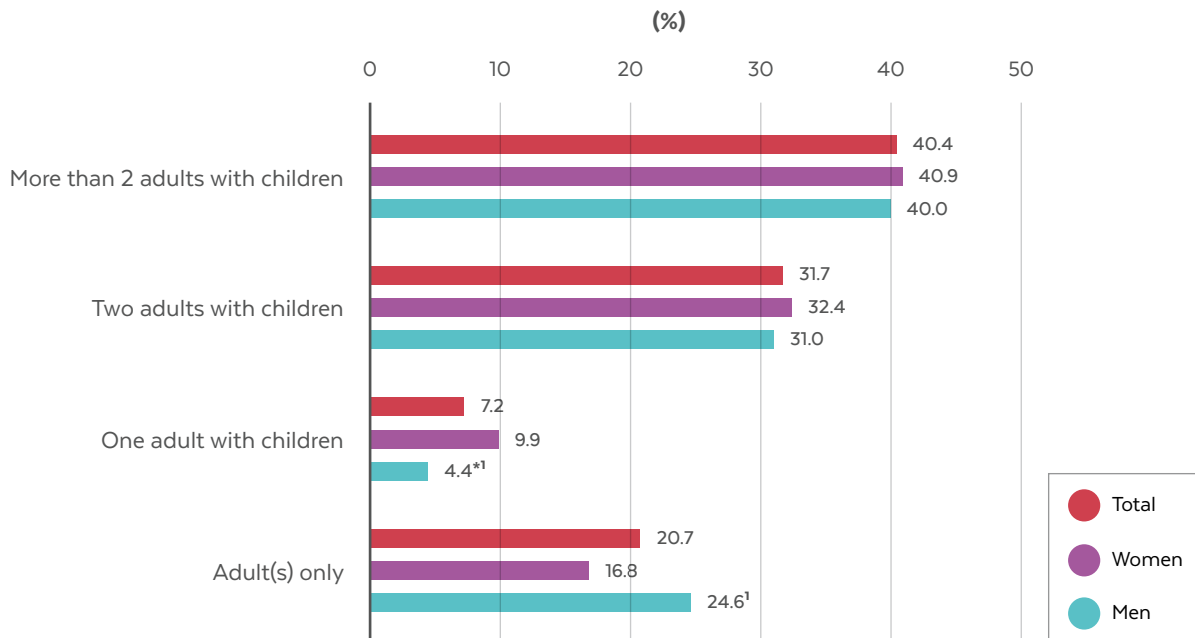
Figure 1 Household composition (%) by survey year, population aged 16 years and over, Nunavik, 2004 and 2017



NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group (comparisons between 2004 and 2017).

Figure 2 Household composition (%) by sex, population aged 16 years and over, Nunavik, 2017



NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group (comparisons between men and women).

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

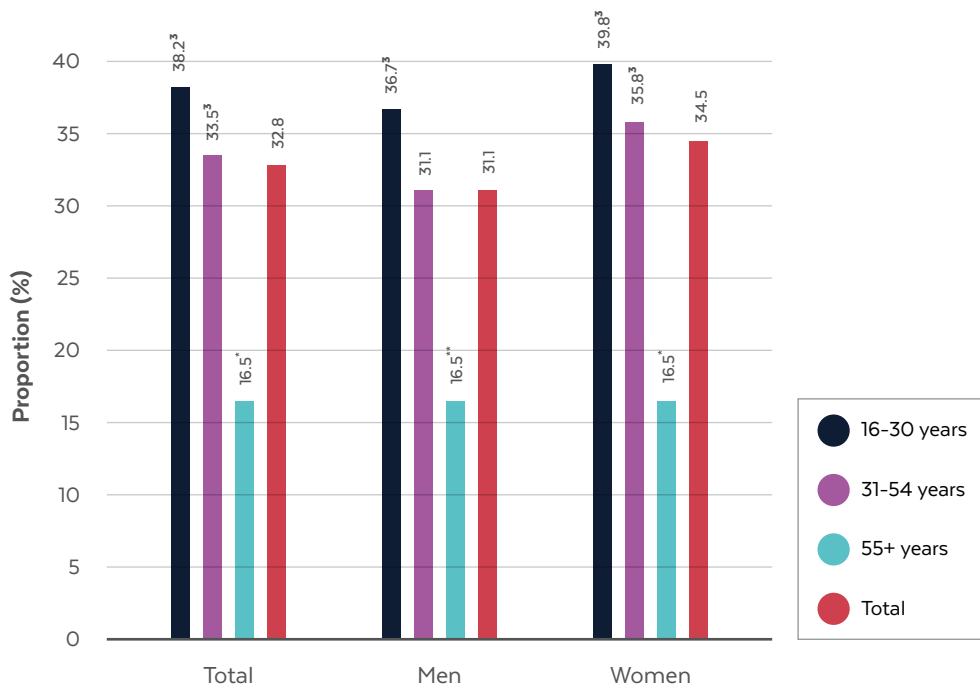
4.1.3 DWELLING SIZE AND OVERCROWDING

Information on the area size of units (dwellings) and buildings (in the case of multi-unit buildings) is presented in Table A, Appendix B. No differences were observed in area size of dwelling units, between women and men or across age groups; however, women and people aged 55 years and older lived in smaller buildings. Younger women (16 to 30 years) lived in smaller units and in units with fewer rooms compared to women aged 31 and over. There were no differences in unit size across age categories for men. No differences were observed in either unit or building area size according to coast of residence, community size, or socioeconomic variables (Tables A-B, Appendix B).

On average, there were 3.0 bedrooms per dwelling. One third of Nunavimmiut lived in an overcrowded dwelling (defined as a dwelling with more than one person per room). While this proportion is significantly lower than that observed at the time of the 2004 survey (41%) (Table E, Appendix B), the measure of overcrowding differs between the two surveys.

Overall, a greater proportion of Nunavimmiut aged 16 to 54 years lived in overcrowded households compared to those aged 55 years and over (38% for youth; 34% for adults aged 31 to 54 years; 17%* for those aged 55 years and older) (Figure 3). No statistically significant difference was observed in the distribution of overcrowding between men and women (Appendix B, Table E). The prevalence of overcrowding was higher on the Hudson coast than on the Ungava coast (35% vs. 29%) (Figure 4). More than one third (36%) of Nunavimmiut with a personal annual income below \$20 000 lived in overcrowded dwellings. Overcrowding did not vary by employment status (Table F, Appendix B).

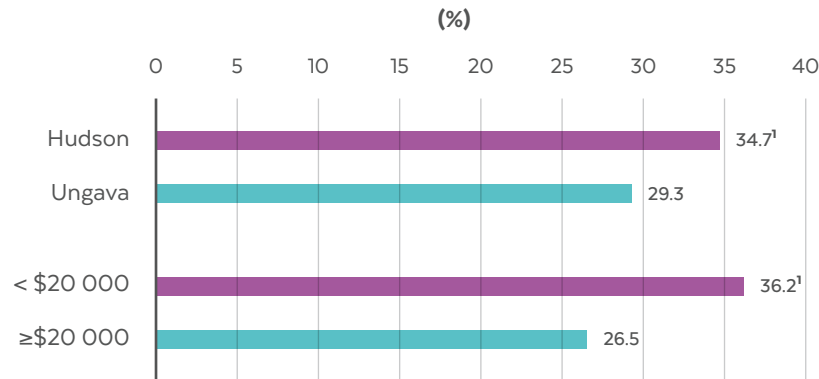
Figure 3 Proportion (%) of Nunavimmiut living in overcrowded dwellings (>1 PPR), by age and sex, population aged 16 years and over, Nunavik, 2017



NOTES

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.
 * The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.
 ** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Figure 4 Proportion (%) of Nunavimmiut living in overcrowded dwellings (>1 PPR), by coast of residence and annual personal income, population aged 16 years and over, Nunavik, 2017



NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group.

4.2 STRUCTURAL DIMENSION OF DWELLINGS

4.2.1 REPAIRS NEEDED

Overall, nearly one in five Nunavimmiut (19%) reported living in a dwelling that needed major repairs, about one third (31%) in a dwelling needing minor repairs, and half (50%) in a dwelling requiring only regular maintenance

(Table 2). The proportions were similar between sex and age groups (Table G, Appendix B). In comparison to Nunavimmiut with an annual personal income of \$20 000 or more, living in a dwelling needing minor repairs was lower for those with an annual income below \$20 000 (40% vs. 24%; Table 2). The need for repairs did not vary by coast of residence, community size, employment status, or crowding conditions (Table H, Appendix B).

Table 2 Repairs needed for dwellings (%) by annual personal income, population aged 16 years and over, Nunavik, 2017

	Total	Annual personal income ^a	
		< \$20 000	≥ \$20 000
Major repairs needed (defective plumbing or electrical wiring, structural repairs to walls, floors, ceilings, etc.)	19.1	22.6	15.5
Minor repairs (missing or loose floor tiles, defective steps, railings or siding, etc.)	31.4	24.4 ¹	39.5
Only regular maintenance needed (painting, cleaning)	49.5	53.0	45.0

NOTES

a. Nunavimmiut who did not know/refused to report their annual personal income (13.2%) were not included.

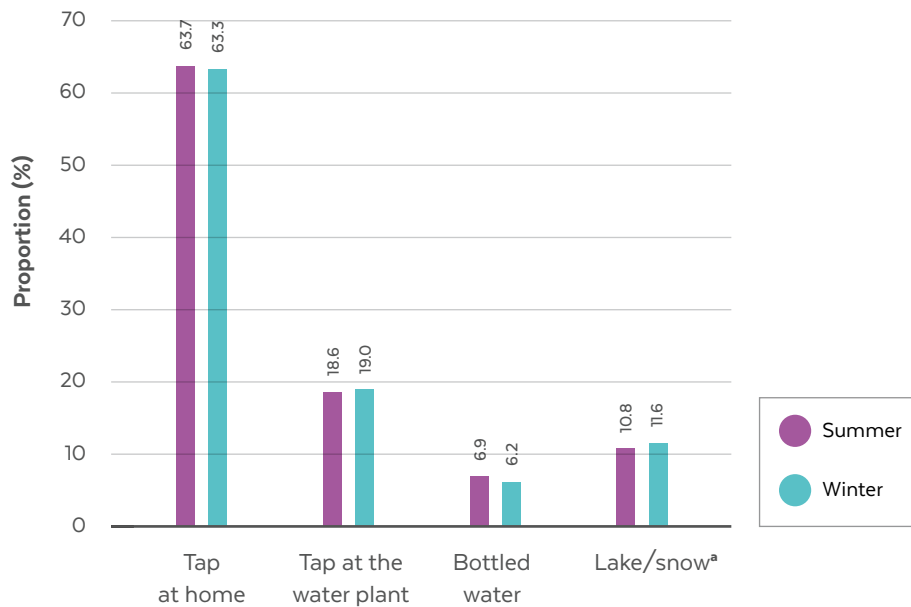
1. Statistically significant difference observed using the 5% threshold compared to the other group.

4.2.2 DRINKING WATER

Main source of drinking water

Most Nunavimmiut reported that their main source of drinking water was tap water at home (64%) or at the water plant (19%) (Figure 5). Bottled water was used as the main source of drinking water by about 7%. About 12% of Nunavimmiut reported that water from a nearby lake or from snow/ice was their main source of drinking water. These proportions were similar in the summer and winter.

Figure 5 Main source of drinking water in summer and winter (%), population aged 16 years and over, Nunavik, 2017



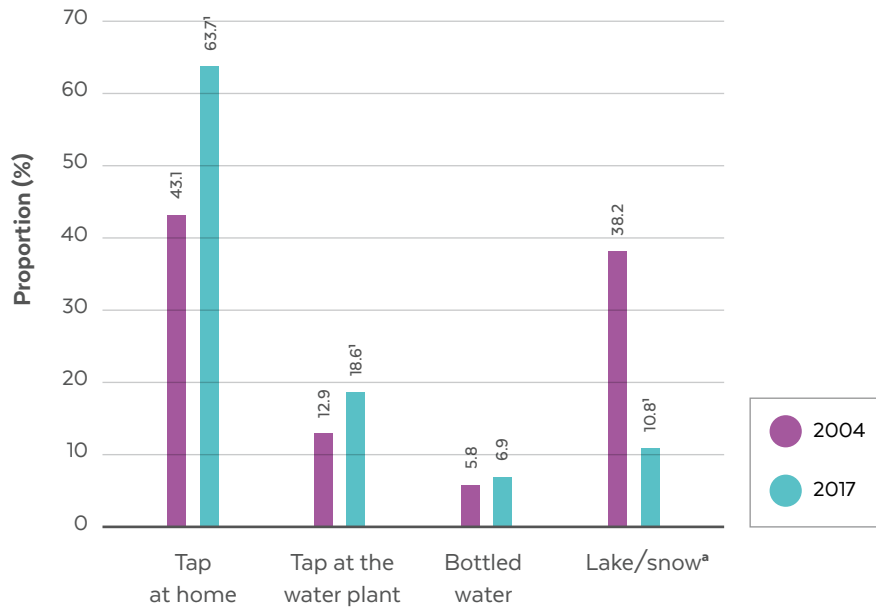
NOTES

a. This category sums the two responses “From nearby lake, river or stream” and “Melted snow, ice or iceberg”.

Figure 6 illustrates the proportion of main source of drinking water in summertime for *Qanuippitaa? 2004* and *Qanuilirpitaa? 2017* (the proportions for winter are similar and are presented in Appendix B, Table I.) In *Qanuippitaa? 2004*, 43% of Nunavimmiut drank water from the tap at home in the summer, significantly less than the proportion observed in *Qanuilirpitaa? 2017* (64%). A greater proportion

of Nunavimmiut used water from the tap directly at the water plant in *Qanuilirpitaa? 2017* compared to *Qanuippitaa? 2004* (Table I, Appendix B.). Moreover, 38% reported using water from a nearby lake, river or stream as their main source of water in *Qanuippitaa? 2004*, a proportion significantly greater than that observed in *Qanuilirpitaa? 2017*, i.e., 11%.

Figure 6 Main source of drinking water in summer (%) by survey year, population aged 16 years and over, Nunavik, 2004 and 2017



NOTES

- a. This category sums the two responses “From nearby lake, river or stream” and “Melted snow, ice or iceberg”.
- 1. Statistically significant difference observed using the 5% threshold compared to the other group (comparisons between 2004 and 2017).

Using bottled water as the main source of drinking water was more common among Nunavimmiut aged 16 to 30 years compared to other age groups (Table 3). There were differences by community size for most sources of drinking water, except for bottled water. In both winter and summer, a lower proportion of residents of small communities reported drinking tap water at home, while a larger proportion reported getting their water from the tap

directly at the water plant or from natural sources. Fewer people on the Hudson coast used the tap directly at the water plant as their main source of drinking water compared to those on the Ungava coast (16% vs. 23%, Appendix, Table J). The main source of drinking water did not vary by overcrowding conditions, employment status, or annual personal income (Table J, Appendix B).

Table 3 Main source of drinking water in summer and winter (%) by age and coast of residence, population aged 16 years and over, Nunavik, 2017

Source of drinking water	Age			Community size	
	16-30	31-54	≥55	Small	Large
Summer					
Tap water at home	62.7	65.0	63.3	56.0 ¹	69.5
Tap at water plant	16.6	19.7	21.5	23.3 ¹	15.1
Bottled water	11.3 ¹	4.0*	1.9**	4.7*	8.5
Lake/snow ^a	9.4	11.2	13.3*	16.0 ¹	6.9*
Winter					
Tap water at home	62.6	64.7	61.6	54.4 ¹	69.9
Tap at water plant	16.3	21.3	20.7	23.4 ¹	15.7
Bottled water	10.0 ¹	3.8*	1.9**	3.9* ¹	7.9
Lake/snow ^a	11.1	10.3	15.7*	18.3 ¹	6.5*

NOTES

a. This category sums the questionnaire categories “From nearby lake, river or stream” and “Melted snow, ice or iceberg”.

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

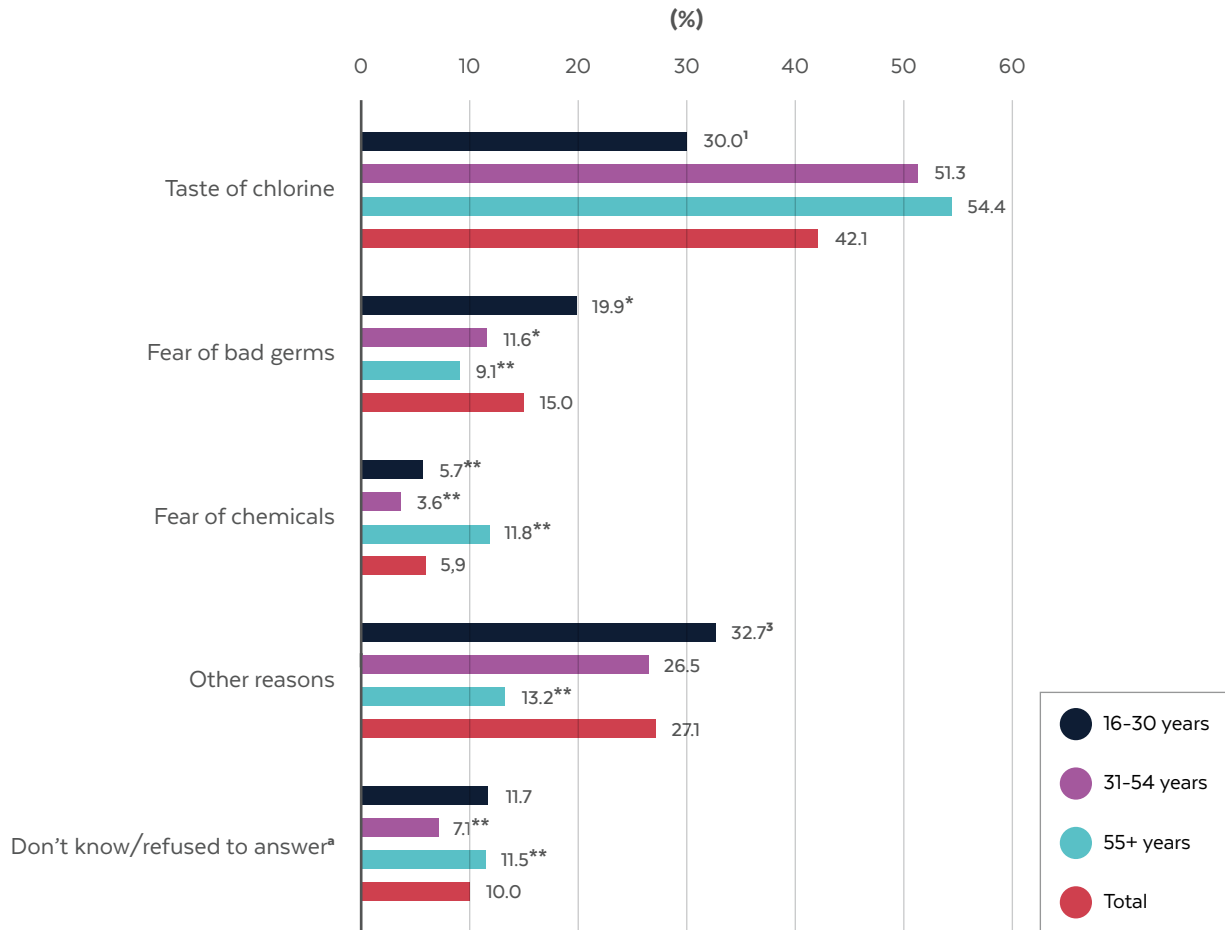
** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Reasons for not using municipal water

Among the 36% of Nunavimmiut reporting not using tap water at home as their main source of drinking water, 42% said it was because the water taste of chlorine; 15% mentioned a fear of bad germs; 6% mentioned a fear of chemicals; 27% mentioned “other reasons”; and 10% did not answer the question or did not know the reason (Figure 7). Fewer Nunavimmiut aged 16 to 30 mentioned “taste of

chlorine” (30%) compared to those aged 31 to 54 (51%) and those aged 55 and over (54%) (Figure 7). More people aged 16 to 30 mentioned not using tap water at home because of “other reasons” compared to those aged 55 years and over. No additional information is available on these other reasons (Figure 7). No variations were observed according to socioeconomic variables (Table L, Appendix B).

Figure 7 Main reason for not using tap water from home as the main source of drinking water (%) in the past 12 months by age group, population aged 16 years and over, Nunavik, 2017



NOTES

a. Participants who answered “Don’t know” or who refused to answer the questions, are presented since their percentage is equal to or greater than 10%.

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Water treatment method

About 75% of Nunavimmiut reported treating their drinking water using at least one method. This is a large increase from *Qanuippitaa?* 2004, when less than half reported treating their water. Treating water was more prevalent on the Ungava coast compared to the Hudson coast (Table 4). Among those who reported treating their water, 50% either boiled or filtered, and an additional 8% used another (unspecified) treatment method (the proportions do not total 100% because some people reported using more than one method). Overall, fewer people aged 55 and over

filtered their water compared to the youngest age group (16 to 30 years old) (38% vs. 56%). Fewer people on the Hudson coast filtered their water (43% vs. 57% on the Ungava coast), while the prevalence of boiling was similar on both coasts. Boiling water varied by overcrowding conditions, being more prevalent among Nunavimmiut living in overcrowded dwellings compared to non-overcrowded dwellings (58% vs. 48%). No differences were observed in water treatment by community size or other socioeconomic variables (Tables M-N, Appendix B).

Table 4 Treatment method for water at home (%) by age and coast, population aged 16 years and over, Nunavik, 2017

	Total	Age			Coast		Overcrowding ^a	
		16-30	31-54	≥55	Hudson	Ungava	Yes	No
Treatment (% yes)	74.6	76.8	73.0	72.6	71.2 ¹	79.0	78.9	73.2
Boiling	50.0	48.2	50.5	53.4	48.9	51.8	57.6 ¹	47.5
Filtering	49.5	56.1 ³	47.1	37.7	43.4 ¹	56.9	54.1	47.8
Other	7.9	7.2*	7.4*	10.9*	9.4*	5.9*	10.9*	6.3*

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

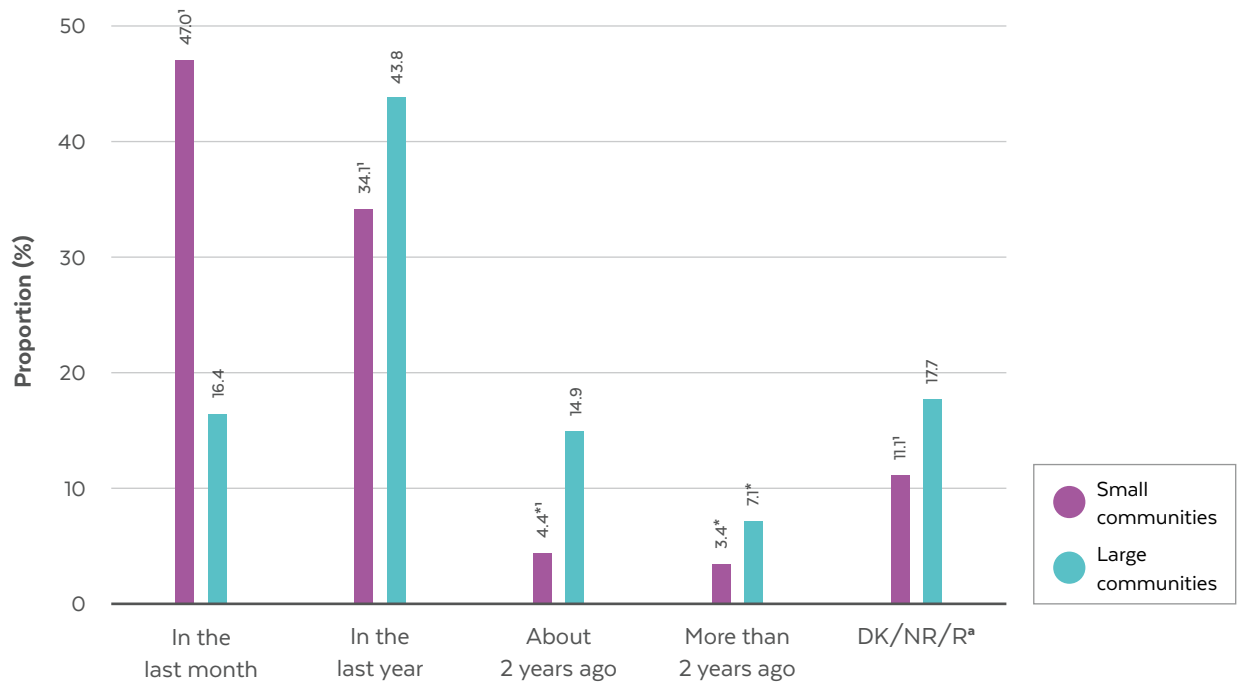
* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

Water tank cleaning

Most people reported having had their water tank cleaned either in the last month (29%) or in the last year (40%, Table O, Appendix B). Fifteen percent (15%) did not know when their water tank was last cleaned. More Nunavimmiut aged 16 to 30 (23%) did not know when their water tank

was last cleaned compared to older people (10%* for 31 to 54 and 7%** for 55 and over). Differences were observed by community size: 47% of Nunavimmiut in small communities reported that their water tank had been cleaned in the past month, compared to 16% of those living in large communities (Figure 8).

Figure 8 Last time water tank was cleaned (%) by community size, population aged 16 years and over, Nunavik, 2017



NOTES

- a. Participants who answered “Do not know” or who refused to answer the questions are presented since their percentage is equal to or exceeds 10%.
- 1. Statistically significant difference observed using the 5% threshold compared to the other group.
- * The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

4.3 HIDDEN HOMELESSNESS AND RESIDENTIAL MOBILITY

4.3.1 HIDDEN HOMELESSNESS

One third (33%) of Nunavimmiut reported having offered shelter to people for a certain period of time because they had nowhere else to live. This provides an indication of the extent of hidden homelessness in the region. No differences were observed by sociodemographic or socioeconomic variables (see Tables Q-R, Appendix B).

4.3.2 RESIDENTIAL MOBILITY

Concerning residential mobility, Nunavimmiut moved houses an average of 0.6 times in the past year (Tables Q-R, Appendix B). Residential mobility was slightly higher for men compared to women (0.6 times vs. 0.5 times); for youth (16 to 30 years old, 0.7 times) compared to adults (31 to 54 years old, 0.5 times) and older adults (55 years and over, 0.4 times); and for Hudson coast residents (0.7 vs. 0.5 for Ungava coast residents). Residential mobility was lower for those in employment, who had moved on average of 0.5 times in the last 12 months, compared to 0.7 for those not in employment. Residential mobility did not vary by community size, overcrowding, or annual personal income.

5 DISCUSSION

This report presents the most recent information on housing conditions and household composition in Nunavik. On average, there were 4.8 people per household, significantly lower than the figure reported in *Qanuippitaa? 2004*, i.e., 5.6. The reduction in household size is further reflected in the lower prevalence of overcrowding observed in *Qanuillirpita? 2017* compared to *Qanuippitaa? 2004* (41% vs. 33%). Still, in 2017, 33% of Nunavimmiut lived in an overcrowded dwelling, defined as a dwelling with more than one person per room. At the 2016 Census, 52% of the Inuit Nunangat population was reported to live in a dwelling with at least a one-bedroom shortfall. The person-per-room ratio and the bedroom shortfall are two indicators of the suitability of housing, each providing different information on overcrowded living conditions. The bedroom shortfall is based on the Canadian National Occupancy Standard (CNOS) which computes the number of bedrooms needed to accommodate the sex, age, and relationship between household members. The cultural relevance of using either the person-per-room or CNOS measures to assess overcrowding in the Arctic has been criticized. Yet both measures clearly show that the prevalence of overcrowding is several times higher among Nunavimmiut than among the general Canadian population (Statistics Canada, 2017b). Living in an overcrowded household was less prevalent among Nunavimmiut aged 55 years and older, those living on the Ungava coast, and those with an annual income of \$20 000 or more, which speaks to the inequalities in the distribution of housing conditions in the region.

In addition to overcrowding, the results of *Qanuillirpita? 2017* show that one in five (19%) Nunavimmiut reported living in a dwelling needing major repairs, which is considerably higher than the national prevalence (Statistics Canada, 2017b). Overall, the need for major repairs did not significantly vary by sociodemographic and economic variables.

Qanuillirpita? 2017 provides a first look at hidden homelessness in Nunavik. One third of Nunavimmiut reported having offered shelter to people who had nowhere else to live in the last year. Many who experience a precarious housing

situation, such as homelessness or high residential mobility, are at increased risk of health problems.

Sources of drinking water were also considered in the housing component of *Qanuillirpita? 2017*. Most Nunavimmiut (82%) primarily used water from the municipal system (tap at home or tap directly at the water plant) as their main source of drinking water during summer and winter. This proportion is significantly higher than that observed in the *Qanuippitaa? 2004* survey (56% in summer and 60% in winter; Messier et al., 2007). Additionally, 75% of Nunavimmiut treated their water at home with at least one method in 2017; in 2004 less than 50% treated their water (Messier et al., 2007). Significant differences were noted between the Ungava and Hudson coasts, suggesting different practices and perceptions. Households on the Ungava coast were more likely to use drinking water from the tap at the water plant; they were also more likely to treat their water at home.

Between *Qanuippitaa? 2004* and *Qanuillirpita? 2017*, water from lakes, rivers, snow or ice as a main water source decreased in favour of using municipal water. However, 36% of Nunavimmiut still did not use tap water at home. As a reason for not drinking tap water at home, participants mostly mentioned disliking the taste of chlorine, but this response varied by age. Nunavimmiut above the age of 31, who might have been more used to drinking natural water, more frequently cited the taste of chlorine, compared to younger ones (16 to 30 years old). Youth were also more likely to use bottled water as their main source of drinking water. Overall, these results show variations in water consumption and preferences by age group, community size and region.

Addressing housing needs in the region has the potential to help close the gap in health disparities between Inuit and the general Canadian population. Over the past decade, there have been large-scale investments in the construction of social housing in Nunavik. A study investigating the impacts of social housing construction in Nunavik and Nunavut reported significant improvements in housing conditions for those who were rehoused, such

as a reduction in overcrowding and in repairs needed, and improvements in thermal comfort and sense of home (Riva et al., 2020a). This study also reported a statistically significant reduction in asthma-related symptoms, psychological distress and perceived stress for adults who were rehoused to newly built or pre-existing houses in the community (Riva et al., 2020b). A sustained commitment to housing is needed to improve living conditions and the health of the population. Successful housing initiatives are also essential to eliminate tuberculosis in Inuit Nunangat, a goal set by the federal government (Inuit Tapiriit Kanatami, 2019).

In addition, investments for renovating houses to improve their structural integrity and energy efficiency are required to improve living conditions. There is also a need to explore other modes of tenure such as rent-to-own and homeownership. Nevertheless, cost considerations and chronic underinvestment remain important barriers to the construction of more sustainable and culturally adapted housing in Inuit Nunangat (Inuit Tapiriit Kanatami, 2019).



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APPENDIX A
QUESTIONS ON HOUSING
AND DRINKING WATER

HOUSEHOLD SIZE, COMPOSITION AND OVERCROWDING

8. ᐃᓚᐅᑎᓚᑎᓐ, ᖃᓕᓯᐅᓯᖅᐅᓂᓐ ᐃᓕᓕᓯᓂᓯᐅᓂᓐ?
ᐃᓯᓂᓯᓂᓯᓐ ᐃᓂᓕᓂᓐ ᐃᓕᓕᓯᓂᓯᐅᓂᓐᐅᓂᓐ,
ᐋᐅᓕᓕᓯᓂᓯᓂᓯᓐᐅᓂᓐᐅᓂᓐᐅᓂᓐ. ᓯᓯᓂᓯᓂᓯᓐ ᐃᓂᐃᓐ
ᐋᓂᖃᖃᓂᓐ ᐋᓯᐋᓂᓐ.

- ᖃᓕᓯᐅᓂᓯᓐ ᐃᓂᐃᓐ: _____
- 99- ᖃᐅᓯᓂᓯᓂᓯᓐ/ᓯᐅᓂᓯᓂᓯᓐ/ᓯᐅᓂᓯᓂᓯᓐ

8.1. ᖃᓕᓯᐅᓂᓯᓐ ᐱᐋᓂᓐ/ᓂᓂᓂᓐ:

- ᐋ) 5 ᐋᓂᓂᓯ ᐅᓯᐅᓂᓐ: _____
- ᐋ) 5-17ᓂᓯ ᐅᓯᐅᓂᓐ: _____
- 99- ᖃᐅᓯᓂᓯᓂᓯᓐ/ᓯᐅᓂᓯᓂᓯᓐ/ᓯᐅᓂᓯᓂᓯᓐ

8.2 ᖃᓕᓯᐅᓂᓯᓐ ᐃᓂᓂᓂᓐ?

- ᐋ) 18-54ᓂᓯ ᐅᓯᐅᓂᓐ: _____
- ᐋ) 55ᓂᓯ ᐅᓯᐅᓂᓐ ᐋᓂᓂᓂᓐ: _____
- 99- ᖃᐅᓯᓂᓯᓂᓯᓐ/ᓯᐅᓂᓯᓂᓯᓐ/ᓯᐅᓂᓯᓂᓯᓐ

8. [4] Including you, how many people usually live in your home?

Think about all persons who usually live in your home, even if they are temporarily away. Do not count people who have a usual home elsewhere.

- Number of people: _____
- 99-DK/NR/R

8.1. [4A] How many are children :

- a) Under 5 years old: _____
- b) 5-17 years old: _____
- 99-DK/NR/R

8.2. [4B] How many are adults:

- a) 18-54 years old : _____
- b) 55 years and older: _____
- 99-DK/NR/R

**Data on number of rooms and building and unit size were taken from the KMHB

APPENDIX B

SUPPLEMENTARY RESULTS

HOUSEHOLD SIZE, COMPOSITION AND OVERCROWDING

Table A Mean household size, building and dwelling area size (m²) by survey year, sex, age and age group by sex, population aged 16 years and over, Nunavik, 2004 and 2017

	Total		Sex		Age			Men			Women		
	2004	2017	Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Household size	5.6	4.8 ¹	4.7	4.9	5.0	4.8	4.1 ¹	5.0	4.7	4.1 ²	5.0	5.0	4.0 ¹
Building area (m ²)	NA	188.2	198.1	178.5 ¹	192.9	193.0	164.2 ¹	206.0	201.0	171.2 ¹	180.0	185.4	156.7 ¹
Dwelling area (m ²)	NA	109.5	109.2	109.8	108.1	109.6	112.9	110.3	106.8	111.9	106.0	112.3	113.8

NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.
 2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.
- NA: Not available

Table B Mean household size, building and dwelling area size (m²) by coast of residence, community size, overcrowding, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Household size	5.0 ¹	4.4	4.7	4.8	7.3 ¹	3.6	4.8	4.8	4.9	4.4
Building area (m ²)	189.3	187.7	190.8	186.4	185.9	189.4	185.8	194.0	186.0	189.1
Dwelling area (m ²)	110.4	107.8	110.3	108.9	110.8	108.8	109.8	108.7	111.0	107.3

NOTES

- Overcrowding could not be calculated for 8.7% of the sample.
 - Nunavimmiut who did not know their annual personal income (13.2%) were not included.
1. Statistically significant difference observed using the 5% threshold compared to the other group.

Table C Household composition (%) by survey year, sex, age and age group by sex, population aged 16 years and over, Nunavik, 2004 and 2017

	Total		Sex		Age			Men			Women		
	2004	2017	Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Adults only	13.4	20.7 ¹	24.6 ¹	16.8	13.2 ¹	20.9 ¹	40.1	16.3 ^{*3}	27.3	39.3	9.9	14.6	41.1 ¹
One adult with children	5.1	7.2	4.4 ^{*1}	9.9	7.3	8.3	4.2 [*]	4.2 [*]	4.6 [*]	4.8 ^{**}	10.4	12.0 [*]	3.4 ^{*1}
Two adults with children	30.7	31.7	31.0	32.4	35.6	34.0	16.3 ¹	33.9	34.2	16.6 ^{*1}	37.3	33.7	16.0 ^{*1}
More than 2 adults with children	50.8	40.4 ¹	40.0	40.9	44.0	36.9	39.4	45.6	33.9	39.3	42.4	39.7	39.5

NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Table D Household composition (%) by coast of residence, community size, overcrowding, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Adults only	18.2	24.8	22.8	19.2	2.2 ^{*1}	29.0	20.6	20.9	19.9	22.8
One adult with children	7.7	6.5	8.1	6.4	1.8 ^{*1}	10.3	7.0	7.6 [*]	7.5	7.2
Two adults with children	29.0	34.8	30.4	32.7	25.6 ¹	35.1	32.6	29.8	29.0	36.1
More than two adults with children	45.2 ¹	33.9	38.7	41.7	70.4 ¹	25.6	39.8	41.8	43.7 ¹	33.9

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Table E Overcrowding by survey year, sex, age and age group by sex, population aged 16 years and over, Nunavik, 2004 and 2017

	Total		Sex		Age			Men			Women		
	2004	2017	Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Number of bedrooms in the house (mean)	NA	3.0	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.0	2.9 ¹	3.1	3.1
Person per room (PPR) (mean)	1.0 ¹	1.0	1.0	1.0	1.0 ¹	1.0 ¹	0.8	1.0	0.9	0.8 ¹	1.0	1.0	0.8 ¹
Overcrowding (%)													
≤1 PPR	58.9 ¹	67.2	68.9	65.5	61.8	66.5	83.5 ¹	63.3 ³	68.9	83.5	60.2	64.2	83.5 ¹
>1 PPR	41.1 ¹	32.8	31.1	34.5	38.2	33.5	16.5 ^{*1}	36.7 ³	31.1	16.5 ^{**}	39.8	35.8	16.5 ^{*1}

NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully

NA: Not available

Table F Overcrowding by coast of residence, community size, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Number of bedrooms in the house (mean)	3.0	2.9	3.0	3.0	3.1	3.0	3.0	3.0	3.1	2.9
Person per room (PPR) (mean)	1.0 ¹	0.9	1.0	1.0	1.4 ¹	0.7	1.0	1.0	1.0 ¹	0.9
Overcrowding (%)										
≤1 PPR	65.3	70.7	67.0	67.4	NA	NA	66.8	67.8	63.8 ¹	73.5
>1 PPR	34.7 ¹	29.3	33.0	32.6	NA	NA	33.2	32.2	36.2 ¹	26.5

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

NA: Not available

STRUCTURAL DIMENSION OF DWELLINGS

Table G Dwellings in need of repairs (%) by sex, age and age group by sex, population aged 16 years and over, Nunavik, 2017

	Total	Sex		Age			Men			Women		
		Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Only regular maintenance needed	49.5	46.5	52.6	53.9	45.5	47.9	53.8	41.8	39.1	54.0	49.2	55.0
Minor repairs needed	31.4	33.5	29.2	28.2	35.2	30.5	26.7	37.8	40.7	29.7	32.7	18.8*
Major repairs needed	19.1	20.0	18.2	17.9	19.3	21.6	19.5*	20.4*	20.2*	16.4	18.2	23.2*

NOTES

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

Table H Dwellings in need of repairs (%) by coast of residence, community size, overcrowding, employment status and annual personal income(%), population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Only regular maintenance needed	50.8	47.5	51.4	48.2	50.0	48.9	46.4	53.8	53.0	45.0
Minor repairs needed	29.2	34.6	30.5	32.1	29.9	31.5	35.8	26.8	24.4 ¹	39.5
Major repairs needed	20.0	17.9	18.2	19.7	20.1	19.6	17.1	19.5	22.6	15.5

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

Table I Main source of drinking water at home in summer and winter (%) by survey year, sex, age and age group by sex, population aged 16 years and over, Nunavik, 2004 and 2017

	Total		Sex		Age			Men			Women		
	2004	2017	Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Summer													
Tap at home	43.1	63.7 ¹	65.6	61.9	62.7	65.0	63.3	64.9	66.2	65.8	60.4	63.9	60.4
Tap at water plant	12.9	18.6 ¹	18.2	19.1	16.6	19.7	21.5	15.5*	19.3*	22.2*	17.6	20.0	20.6*
Bottled water	5.8	6.9	5.6*	8.1	11.3 ¹	4.0*	1.9**	9.7**	2.9**	NP	13.0 ²	5.1*	NP
Lake/snow ^a	38.2	10.8 ¹	10.7	10.9	9.4	11.2	13.3*	9.9*	11.6*	10.6**	9.0*	10.9*	16.4*
Winter													
Tap at home	48.2	63.3 ¹	63.8	62.7	62.6	64.7	61.6	63.5	64.7	62.6	61.7	64.7	60.5
Tap at water plant	12.2	19.0 ¹	19.5	18.4	16.3	21.3	20.7	16.7*	22.1*	20.9*	15.8	20.4	20.6
Bottled water	5.0	6.2	4.5*	7.9	10.0 ¹	3.8*	1.9**	7.8**	NP	NP	12.3*	5.2**	NP
Lake/snow ^a	34.6	11.6 ¹	12.1	11.0	11.1	10.3	15.7*	12.0*	10.9*	15.1**	10.2	9.7*	16.4*

NOTES

a. This category sums the two responses "From nearby lake, river or stream" and "Melted snow, ice or iceberg".

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

NP: Data not presented (n < 5).

Table J Main source of drinking water at home in summer and winter (%) by coast of residence, community size, overcrowding, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Summer										
Tap at home	65.1	61.0	56.0 ¹	69.5	67.7	62.4	63.9	64.7	63.3	64.4
Tap at water plant	15.5 ¹	23.0	23.3 ¹	15.1	15.4	19.1	18.5	18.0	17.1	20.3
Bottled water	6.9	6.8	4.7*	8.5	6.7*	7.1	6.8	7.0*	7.7*	5.8*
Lake/Snow ^c	12.4	9.3	16.0 ¹	6.9*	10.2*	11.4	10.7	10.3	11.9	9.5
Winter										
Tap at home	65.2	60.1	54.4 ¹	69.9	68.7	61.0	63.9	63.2	63.2	63.9
Tap at water plant	16.1 ¹	22.9	23.4 ¹	15.7	14.7	20.3	18.8	18.8	17.4	20.5
Bottled water	6.1	6.2	3.9* ¹	7.9	5.9*	6.4	5.9	6.7*	6.6*	5.3*
Lake/snow ^c	12.6	10.8	18.3 ¹	6.5*	10.7*	12.4*	11.3	11.3	12.8	10.2

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

c. This category sums the two responses “From nearby lake, river or stream” and “Melted snow, ice or iceberg”.

1. Statistically significant difference observed compared to the other group.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Table K Main reason for not using the municipal system as the main source of water (%) by sex and age, population aged 16 years and over, Nunavik, 2017^a

	Total	Sex		Age			Men			Women		
		Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Taste of chlorine	42.1	46.5	37.7	30.0 ¹	51.3	54.4	32.6*	60.8 ²	53.0*	27.4 ³	42.3	55.9
Fear of bad germs	15.0	16.5*	13.4*	19.9*	11.6*	9.1**	23.8**	11.8**	NP	16.1*	11.4**	10.5**
Fear of chemicals	5.9	4.1**	7.7	5.7**	3.6**	11.8**	NP	NP	13.6**	8.2**	6.2**	9.9**
Other reasons	27.1	23.3	30.7	32.7 ³	26.5	13.2**	29.1*	20.2**	14.8**	36.2 ³	32.6 ³	11.5**
DK/NR/R	10.0	9.5**	10.5*	11.7	7.1**	11.5**	11.4**	NP	NP	12.1*	7.6**	12.3**

NOTES

a. Proportion computed excluding 62% of Nunavimmiut who reported using the municipal water system.

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

NP: Data not presented (n < 5).

DK/NR/R: Do not know/No response/Refused to answer

Table L Main reason for not using the municipal system as the main source of water (%) by coast of residence, community size, overcrowding, employment status and annual personal income, excluding 62% of Nunavimmiut who use the municipal system, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Taste of chlorine	39.5	46.1	45.3	38.4	37.4	45.6	43.7	37.0	38.3	49.5
Fear of bad germs	14.6	15.2	12.7*	17.5*	14.4*	14.0*	16.0	13.8*	14.2*	18.2*
Fear of chemicals	5.4	6.6	6.4*	5.4**	5.6**	6.7*	4.3*	9.5*	7.2*	4.7**
Other reasons	29.1	23.7	24.2	30.3	32.7	24.4	27.5	26.3	28.1	21.9
DK/NR/R	11.4*	8.4	11.4*	8.4**	9.9**	9.3*	8.5*	13.5*	12.2*	5.7**

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

DK/NR/R: Do not know/No response/Refused to answer

Table M Methods of water treatment (%) by sex, age and age group by sex, population aged 16 years and over, Nunavik, 2017

	Total	Sex		Age			Men			Women		
		Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Any treatment												
Yes	74.6	74.3	74.8	76.8	73.0	72.6	76.8	74.7	70.2	76.9	71.2	75.3
No	25.4	25.7	25.2	23.2	27.0	27.4	23.2*	25.3	29.8*	23.1	28.8	24.7*
Boiling												
Yes	50.0	50.3	49.7	48.2	50.5	53.4	45.4	53.0	52.7	50.9	48.2	54.2
No	50.0	49.7	50.3	51.8	49.5	46.6	54.6	47.0	47.3	49.1	51.8	45.8
Filtering												
Yes	49.5	49.3	49.7	56.1 ³	47.1	37.7	56.0	50.2	30.8 ^{*1}	56.3	44.1 ²	45.5
No	50.5	50.7	50.3	43.9 ³	52.9	62.3	44.0	49.8	69.2	43.7	55.9 ²	54.5
Other												
Yes	7.9	10.3*	5.5*	7.2*	7.4*	10.9*	11.0*	9.2**	10.9**	3.5**	5.6**	11.0**
No	92.1	89.7	94.5	92.8	92.6	89.1	89.0	90.8	89.1	96.5 ³	94.4	89.0

NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.
 2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.
 3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.
- * The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.
 ** The coefficient of variation is greater than 25%. The proportion is shown for information only.

Table N Methods of water treatment (%) by coast of residence, community size, overcrowding, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Any treatment										
Yes	71.2 ¹	79.0	73.2	75.6	78.9	73.2	74.7	74.0	74.7	73.4
No	28.8 ¹	21.0	26.8	24.4	21.1	26.8	25.3	26.0	25.3	26.6
Boiling										
Yes	48.9	51.8	52.1	48.4	57.6 ¹	47.5	48.3	52.9	53.3	45.9
No	51.1	48.2	47.9	51.6	42.4 ¹	52.5	51.7	47.1	46.7	54.1
Filtering										
Yes	43.4 ¹	56.9	48.4	50.3	54.1	47.8	52.3	43.6	45.4	53.4
No	56.6 ¹	43.1	51.6	49.7	45.9	52.2	47.7	56.4	54.6	46.6
Other										
Yes	9.4*	5.9*	8.5*	7.4*	10.9*	6.3*	6.9*	10.2*	9.9*	5.1*
No	90.6	94.1	91.5	92.6	89.1	93.7	93.1	89.8	90.1	94.9

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

Table O Water tank and water tank cleaning (%) by sex, age and age group by sex, population aged 16 years and over, Nunavik, 2017

	Total	Sex		Age			Men			Women		
		Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
Water tank in the house												
Yes	94.5	94.3	94.8	96.8 ³	94.3	89.1	96.1	94.5	89.3	97.6 ¹	94.2	88.9
No	5.5	5.7	5.2	3.2 ³	5.7	10.9	3.9**	5.5*	10.7**	2.4 ¹	5.8*	11.1**
Last time the water tank was cleaned (excl. 5% w/o water tank)												
In the last month	29.0	30.3	27.7	28.9	26.0	36.8	33.6	24.0	36.1	24.1 ³	28.0	37.6
In the last year	39.8	38.9	40.8	34.1	44.6 ²	44.1	33.8	43.7	41.2	34.4	45.4 ²	47.3
About 2 years ago	10.6	13.0	8.1	9.6*	12.0*	10.0*	9.1**	16.7*	15.1**	10.1*	7.4*	4.3**
More than 2 years ago	5.6	6.1*	5.0*	4.9*	7.6*	NP	5.6**	8.1**	NP	4.2*	7.2*	NP
DK/NR/R ^a	15.0	11.6	18.4 ^{*1}	22.5 ¹	9.8*	6.7**	17.9*	7.4**	NP	27.2	12.0 ^{*2}	9.2**

NOTES

a. Do not know/No response/Refused to answer

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.

2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.

3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

** The coefficient of variation is greater than 25%. The proportion is shown for information only.

NP: Data not presented (n < 5).

Table P Water tank and water tank cleaning (%) by coast of residence, community size, overcrowding, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
Water tank in the house										
Yes	93.1	96.3	91.3 ¹	97.0	96.9	93.5	95.3	92.9	93.8	95.6
No	6.9	3.7	8.7 ^{*1}	3.0 [*]	3.1 ^{**1}	6.5	4.7	7.1 [*]	6.2 [*]	4.4 [*]
Last time the water tank was cleaned (excl. 5% w/o water tank)										
In the last month	26.0 ¹	33.3	47.0 ¹	16.4	28.9	29.3	29.2	28.4	32.3	25.5
In the last year	41.0	37.3	34.1 ¹	43.8	38.4	41.8	40.9	37.8	36.3 ¹	47.0
About 2 years ago	11.1	10.0	4.4 ^{*1}	14.9	9.2	10.5 [*]	10.6	10.7 [*]	9.1	10.3 [*]
More than 2 years ago	7.3 [*]	4.0 [*]	3.4 [*]	7.1 [*]	5.2 [*]	5.5 [*]	4.9 [*]	6.5 [*]	6.9 [*]	4.7 [*]
DK/NR/R	14.7	15.3	11.1 ¹	17.7	18.3	12.9	14.5	16.6	15.4	12.5

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully

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DKNR: Do not know/No response/Refused to answer

HIDDEN HOMELESSNESS AND RESIDENTIAL MOBILITY

Table Q Hidden homelessness and residential mobility (%) by sex, age and age by sex, population aged 16 years and over, Nunavik, 2017

	Total	Sex		Age			Men			Women		
		Men	Women	16-30	31-54	≥55	16-30	31-54	≥55	16-30	31-54	≥55
People living in house because they have nowhere else to live												
Yes	33.0	33.5	32.4	36.2	31.7	27.7	34.2	34.6	29.6*	38.2	28.8	25.5*
No	67.0	66.5	67.6	63.8	68.3	72.3	65.8	65.4	70.4	61.8	71.2	74.5
Mean number of times people moved houses in the past year	0.6	0.6	0.5 ¹	0.7 ¹	0.5	0.4*	0.8 ³	0.6	0.4*	0.7	0.4 ²	0.4*

NOTES

1. Statistically significant difference observed using the 5% threshold compared to the other group for variables with two response categories, or compared to other groups for variables with more than two response categories.
2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.
3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.

* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

Table R Hidden homelessness and residential mobility (%) by coast of residence, community size, overcrowding, employment status and annual personal income, population aged 16 years and over, Nunavik, 2017

	Coast of residence		Community size		Overcrowding ^a		Employed		Annual personal income ^b	
	Hudson	Ungava	Small	Large	Yes	No	Yes	No	<\$20 000	≥\$20 000
People living in house because they have nowhere else to live										
Yes	33.5	32.0	29.6	35.5	32.3	33.5	33.1	33.5	34.2	31.5
No	66.5	68.0	70.4	64.5	67.7	66.5	66.9	66.5	65.8	68.5
Mean number of times people moved houses in the past year	0.7 ¹	0.5	0.5	0.6	0.6	0.6	0.5 ¹	0.7	0.7	0.4

NOTES

a. Overcrowding could not be calculated for 8.7% of the sample.

b. Nunavimmiut who did not know their annual personal income (13.2%) were not included.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

