

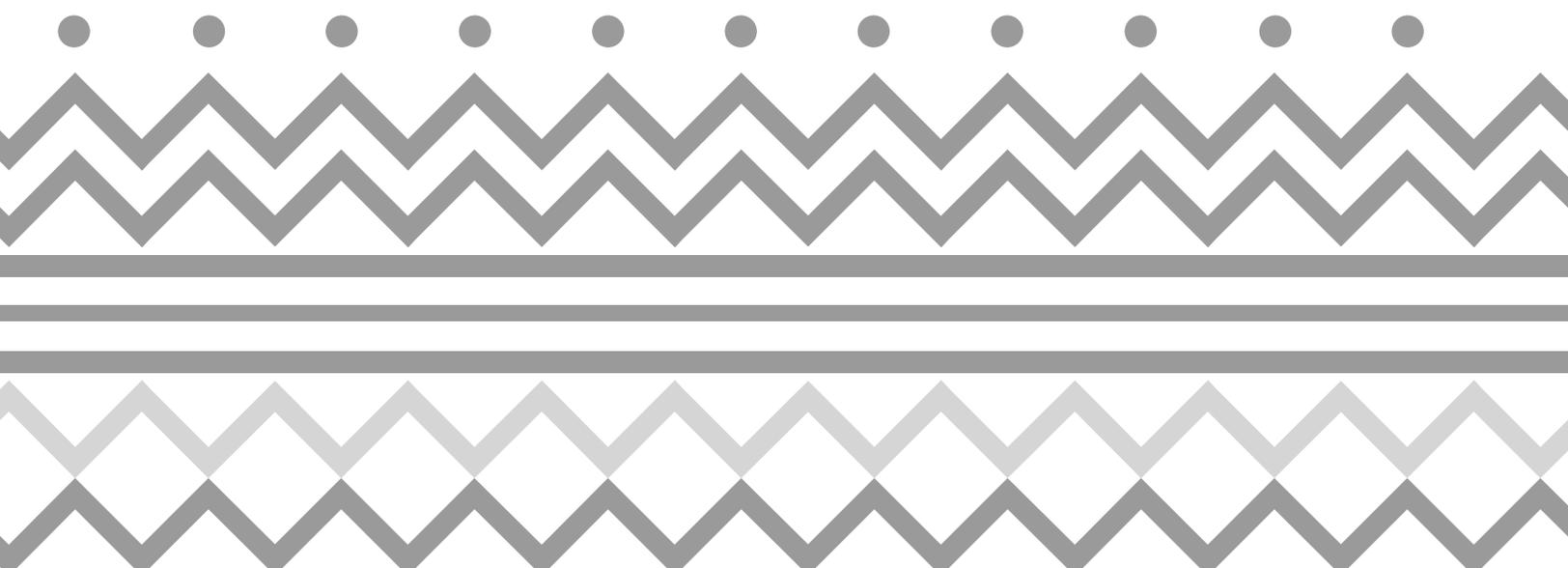


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NUNAVIK 2017

GAMBLING, INTERNET AND MEDIA USE

QANUILIRPITAA? 2017

Nunavik Inuit Health Survey



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QANUILIRPITAA? 2017 HEALTH SURVEY ACKNOWLEDGMENTS

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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 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. 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

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

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 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

Gambling, whether in the form of government-run instant lotteries, locally organised bingo or card/dice games, is a common leisure activity in Nunavik (Muckle, Boucher, Laflamme, Chevalier, & Rochette, 2007). Gambling is also regularly used as part of fund-raising activities in Nunavik communities. However, some Nunavimmiut may be at risk of problematic gambling, which is a gambling behaviour that creates negative consequences for the gambler, others in their social network, or their community (Ferris & Wynne, 2001). No data is available on problematic gambling in communities of the Inuit Nunangat, but the lifetime prevalence has been estimated to be between 10% and 16% on the basis of a representative sample of Greenland Inuit (Larsen, Curtis, & Bjerregaard, 2013). With improved Internet access in recent years, online gambling is now a new option for Nunavimmiut.

The amount of time spent using electronic devices has become a source of concern, particularly for children, in recent years with the multiplication of devices in everyday life. In 2017, the Canadian Paediatric Society released a position statement highlighting the potential benefits (imaginative play, access to educational content) and risks (displacement of family interactions, social isolation) of screen time in children. In adults, some results suggest an association between screen time and all-cause mortality, as well as mortality related to cardiovascular diseases (Patterson et al., 2018). Therefore, it is recommended that screen time be minimized, that efforts be made to mitigate the associated risks and that adults model healthy screen use (Canadian Paediatric Society, 2017).

Since 2004, broadband Internet service has been offered in every Nunavik community and an improved system (new infrastructure, increased speed) has been put in place (*Parnasimautik – Consultation Report*, 2014). Despite low speed and unreliable connections, access to the Internet has the potential to provide new opportunities for Nunavimmiut in education and health care; however, it also raises concerns about the possible impact on lifestyle in Inuit communities (*Parnasimautik – Consultation Report*, 2014). Available data suggest that Nunavimmiut of all ages use the Internet for a variety of reasons, notably to pay bills, to purchase goods online and to visit social media (National, 2014). The Internet can also be used to access health information and is an opportunity for health promotion programs, particularly in small remote communities (Markham et al., 2016). While the Internet has many positive uses, some individuals are at risk of problematic Internet use, which is a type of use that creates psychological, social, school, and/or work difficulties in a person's life (Beard & Wolf, 2001).

Community leaders and governments need up-to-date and trustworthy information to assess needs and develop services pertaining to these emerging and changing behaviours. The goal of this thematic report is to provide a portrait of gambling, Internet and media use that is representative of the Nunavik population aged 16 and over, taking into account sociodemographic and sociocultural factors.

3 METHODOLOGICAL ASPECTS

All the variables in this report were documented by questionnaires. The bilingual (Inuktitut/English) questionnaire for these items is presented in Appendix A.

Questions about gambling (i.e., the amount of money wagered and online gambling) were included in the psychosocial interview of the *Qanuilirpitaa?* 2017 Health Survey. The prevalence of gambling was estimated by the proportion of respondents who declared generally spending at least one dollar on gambling in a month. This is different from the approach used in the *Qanuippitaa?* 2004 survey, in which the frequency of gambling was assessed for the year prior to the survey. The Lie/Bet questionnaire was used as a screening tool for potential problematic gambling (Johnson, Robert, & Nora, 1997). This questionnaire consists of two questions on lying about gambling and increasing amounts wagered, with the aim of identifying individuals with a potential gambling problem who may need further assessment. People who give an affirmative answer to at least one of the questions are considered to be at risk of problematic gambling (Johnson et al., 1997). The Lie/Bet screening tool was chosen based on its comparability with surveys conducted among Greenlandic Inuit (Larsen et al., 2013).

Participants were also asked questions about the time they spent in front of a screen (TV, video games, computer, cellphone), their use of the Internet and social media and their use of the Internet to access health-related information. These questions covered both personal and professional screen time as well as Internet and social media use. Problematic Internet use was assessed by four questions focusing on the respondent's perception of their Internet use (Sun et al., 2012). Each question was rated on a Likert scale from 1 to 5 (Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree; presented in reverse order in the questionnaire). A mean

score was computed for the four questions and participants with a mean score greater than four were considered to be at risk of a potential Internet problem. In the present survey sample, the problematic Internet use scale had a good internal consistency (Cronbach $\alpha = 0.73$), although higher consistency has been reported in Chinese and US samples (0.84 and 0.80, respectively; Sun et al., 2012).

The analyses presented in this thematic report include cross-tabulations by sex (men/women), coastal region (Hudson/Ungava),² age group (16 to 30/31 to 54/55 years and over), marital status (single/married or common law/separated, divorced or widowed), education (elementary school or less/secondary school not completed/secondary school or higher), employment (employed/not employed),³ annual personal income (less than \$20 000/\$20 000 or more), and community size (large/small).⁴ Also, given the rapid changes in behaviours and attitudes with regard to the topics documented in this report, the younger age group (16 to 30 years old) was divided, for some analyses, into people aged 16 to 20 years old and those aged 21 to 30.

To integrate cultural specificities, which may influence various activities, associations with several sociocultural indicators were examined. We compared proportions on gambling, Internet and media use indicators according to levels of the sociocultural indicators presented in Table 1. Additional information on these sociocultural indicators as well as the related list of questions can be found in the Sociocultural Determinants of Health and Wellness thematic report.

2. Hudson coast: Kuujjuarapik, Umiujaq, Inukjuak, Puvirnituq, Akulivik, Ivujivik and Salluit; Ungava coast: Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq, Kangiqsualujuaq and Kuujuaq.
3. Employed: Salaried or self-employed full-, part-time, occasional; Not employed: hunter support program, housework, retired or on pension, employment insurance, parental leave, income support, student, and other.
4. Small communities: Kuujjuarapik, Umiujaq, Akulivik, Ivujivik, Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq, Kangiqsualujuaq; Large communities: Kuujuaq, Salluit, Puvirnituq and Inukjuak.

Table 1 Sociocultural indicators

CULTURAL IDENTITY	Thirteen statements asking about the importance of Inuit values and identity (e.g., perceived connection among community members, adherence to cultural values) Likert scale: 1-Strongly agree to 5-Strongly disagree; Comparisons: high cultural identity (top 30 percentiles) vs. other
FREQUENCY OF GOING ON THE LAND	“From the Spring until now, how often did you go on the land?” Likert scale: 1-Never, 2 - Occasionally, 3-Often; Comparisons: Often vs. Occasionally or Never
FOUR TYPES OF SOCIAL SUPPORT	6 questions. Frequency of four types of social support: <ul style="list-style-type: none"> > positive interactions: “Have someone to have a good time with” > emotional support: “Have someone to talk to if I feel troubled or need emotional support”, “Have someone to count on when I need advice”, “Have someone to listen to me when I need to talk” > tangible support for transportation to health services: “Have someone to take me to the doctor or another health professional if needed” > love and affection: “Have someone who shows me love and affection” Likert scale: 1-All of the time to 5-Never; Cut-off for each type: All and Most of the time (for the item or for all three items) vs. other answers. Comparisons: Three or four types of support vs. none to two.
FAMILY COHESION	6 questions: 5 from the Brief Family Relationship Scale questionnaire + one adapted to Inuit culture. In my close family,... “there is a feeling of togetherness”, “we really help and support each other”, “we really get along well with each other”, “we spend a lot of time doing things together at home”, “we spend a lot of time doing things together on the land”, “I am proud to be a part of my family” Likert scale: 1-Very true to 3-Not true; Comparisons: high family cohesion (top 30 percentiles) vs. other
COMMUNITY COHESION	4 questions on respondent’s perception of social cohesion in the community: “There is a feeling of togetherness or closeness”, “People help others”, “People can be trusted”, “I feel like I belong” Likert scale: 1-Strongly agree to 5-Strongly disagree; Comparisons: high community cohesion (top 30 percentiles) vs. other
INVOLVEMENT IN COMMUNITY ACTIVITIES	Frequency of involvement in two types of community activities: “Participation in cultural, community or sports events such as festivals, dances, feasts or Inuit games”, “Volunteered for a group, an organization or community event such as a rescue team, church group, feasts, spring clean-up” Likert scale: 1-Always to 5 - Never; Comparisons: Always or Often vs. Sometimes, Rarely or Never
PARTICIPATION IN HEALING AND WELLNESS ACTIVITIES	“In the past 12 months, have you taken part in any activities to promote your own healing or wellness?” Yes/No answer
SEDENTARY TIME	“During the last 7 days, how much time did you spend sitting on a week day?”; Comparisons: > 7 hours vs. ≤ 7 hours

Comparison tests were performed with a global chi-square test for categorical variables to find out if any proportion was different across categories. In the presence of a significant result ($p < 0.05$; coloured cells in tables), 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 and all other tested factors found to be non-related are presented in the tables in Appendix B. Significant differences between categories are denoted in the tables and figures using superscripts. All data analyses for this thematic report were done using SAS software, Version 9.4 (SAS Institute Inc., Cary, NC, USA).

Limitations. Only bivariate analyses were performed to describe associations with selected social and cultural indicators. These analyses do not take into consideration possible confounding or interaction effects. Consequently, these results should be interpreted with caution.

Accuracy of estimates. The data used in this report come from a sample and are thus subject to a certain degree of error. Following the guidelines of the Institut de la Statistique du Québec (ISQ), coefficients of variation (CV) were used to quantify the accuracy of estimates. Estimates with a CV between 15% and 25% are accompanied by a * to indicate that they should be interpreted carefully, while estimates with a CV greater than 25% are presented with a ** and are shown for information purposes only.

4 RESULTS

This section reports, for the population as a whole, the proportions of Nunavimmiut who gamble or use the Internet and media, according to sociodemographic and selected sociocultural factors.

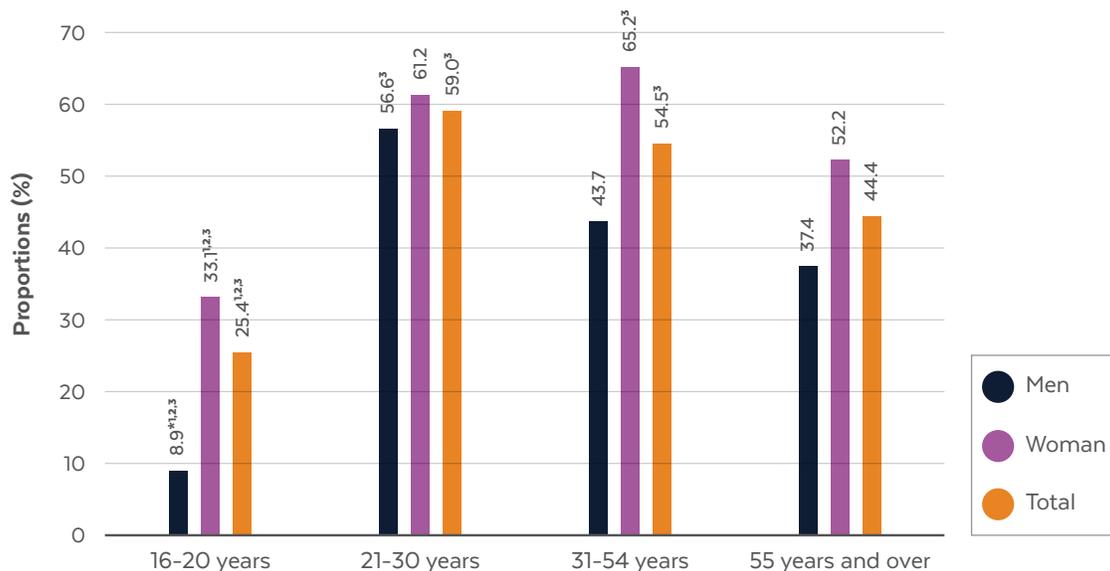
4.1 GAMBLING

4.1.1 Gambling prevalence

In this survey, gamblers were defined as those who declared generally spending at least one dollar on gambling in a month. Accordingly, nearly half of Nunavimmiut (49%) were identified as gamblers, with women being more likely

to gamble than men (Table 2). Nunavimmiut aged between 16 and 20 were less likely to gamble than those aged 21 to 54. In turn, adults aged 55 or older were less likely to gamble than those aged 21 to 54 years old (Figure 1). Gambling was more prevalent among residents of the Ungava coast than among those of the Hudson coast. Employed individuals were more likely to gamble than those who were unemployed, as were those with an annual income of \$20 000 or more compared to those with a lower annual income. All cross-tabulations with sociodemographic factors are presented in Table 2. Regarding sociocultural indicators, Nunavimmiut who reported a higher level of community cohesion were less likely to gamble (44% vs. 52% for lower levels) (Table A, Appendix B).

Figure 1 Prevalence of gambling by sex and age group (%), population aged 16 years and over, Nunavik, 2017.



NOTES

Gambling is defined as generally spending money on gambling at least one dollar on gambling in a month.

1. Statistically significant difference observed using the 5% threshold compared to the 21-30 age group.
2. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.
3. Statistically significant difference observed using the 5% threshold compared to the 55 and over age group.

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

Table 2 Prevalence of gambling, past-year online gambling and lifetime potential gambling problem, by sociodemographic factors (%), population aged 16 years and over, Nunavik, 2017

	Gambling ^a	Online gambling ^b	Potential gambling problem ^c
Total	49.0	42.8	33.6
Sex			
Men	41.2 ¹	42.9	32.4
Women	56.9	42.8	34.6
Age group			
16-20 years	25.4 ^{2,3,4}	32.4 ^{*2}	44.0 ^{3,4}
21-30 years	59.0 ⁴	53.4 ^{3,4}	39.3 ³
31-54 years	54.5 ⁷	40.3	29.7
55 years and over	44.4	33.7	27.3
Coast			
Hudson	44.9 ¹	36.1 ¹	34.3
Ungava	54.5	50.0	32.9
Marital status			
Single	45.4	43.8	42.2 ⁵
Married or common law	52.0	42.7	27.6
Separated, divorced or widowed	48.9	36.2	34.7 [*]
Education			
Elementary school or less	49.3	28.8	40.4 [*]
Secondary school not completed	47.0	41.4	34.1
Secondary school or higher	54.0	49.9	30.4
Employment			
Employed	52.3 ¹	45.8 ¹	34.1
Not employed	42.8	34.6	32.6
Income			
Less than \$20 000	44.1 ¹	38.8	39.0 ¹
\$20 000 or more	56.8	47.1	26.6
Community size			
Large	49.6	42.6	34.2
Small	48.3	43.0	32.8

NOTES

Coloured cells indicate statistically significant comparisons.

Gambling is defined as generally spending money on gambling at least one dollar on gambling in a month.

a. Monthly spending of at least \$1 on gambling, in general.

b. Betting online at least occasionally in the past year, among gamblers only.

c. Defined by the Lie/Bet questionnaire (at least one positive answer), among gamblers only.

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

2. Statistically significant difference observed using the 5% threshold compared to the 21-30 age group.

3. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.

4. Statistically significant difference observed using the 5% threshold compared with the 55 and over age group.

5. Statistically significant difference observed using the 5% threshold compared to married or common law Nunavimmiut.

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

Online gambling. Among Nunavimmiut defined as gamblers, approximately two out of five reported gambling online in the previous year (43%), with half of them gambling online on a weekly basis (21%). Nunavimmiut aged 21 to 30 were more likely to report online gambling than those aged 16 to 20 and 31 and older. As with gambling in general, people who were employed were more likely to gamble online, as were residents of the Ungava coast compared to residents of the Hudson coast. All cross-tabulations with sociodemographic factors are presented in Table 2.

4.1.2 Potential gambling problem

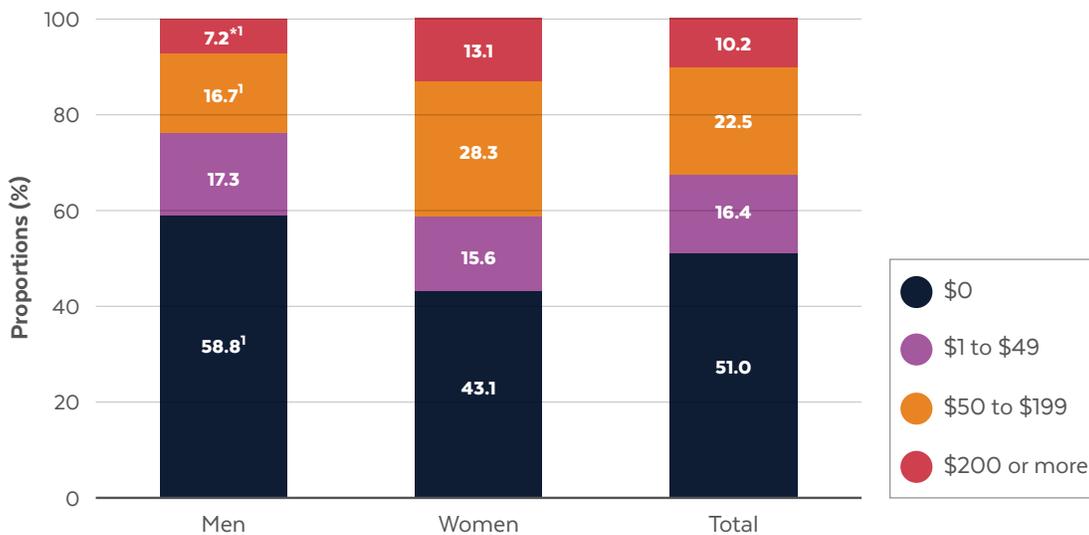
Among Nunavimmiut defined as gamblers, about one out of ten (12%) reported lying about gambling and 29% reported needing to bet more and more money. One third of those who gambled (34%) were considered at risk of problem gambling, with the proportion being similar for men and women (Table 2). Younger Nunavimmiut (aged 30 or less) were more likely to be at risk of problem gambling compared to those aged 31 to 54. Those who were married or in a common law relationship were less likely to be at risk of problem gambling than those who

were single. Nunavimmiut with a lower income were at higher risk of problem gambling than those with higher income (Table 2). No significant association was found between the prevalence of problem gambling and any sociocultural factors (Table A, Appendix B).

4.1.3 Monthly spending on gambling

Two-thirds of those who gambled in Nunavik reported spending less than \$50 on such activities on a monthly basis (67%). Globally, women reported spending more money than men (Figure 2). Nunavimmiut with an annual income of \$20 000 or more were more likely to report spending \$50 or more on gambling each month. Nunavimmiut who were employed were more likely to report spending \$50 or more on a monthly basis than those who were unemployed. No significant differences were observed according to age, marital status, education or coast of residence. All cross-tabulations with sociodemographic factors are presented in Table B, Appendix B. Bivariate analyses did not reveal any consistent association between the amounts spent monthly on gambling and sociocultural factors (Table C, Appendix B).

Figure 2 Monthly spending on gambling by sex (%), population aged 16 years and over, Nunavik, 2017



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

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

4.2 INTERNET AND MEDIA USE

4.2.1 Screen time

Figure 3 presents the daily screen time (watching TV, video games, computer games, emailing, and surfing the Internet whether for leisure or professional purposes) reported by Nunavimmiut. Most Nunavimmiut reported spending time in front of a screen on a daily basis (94%). Nearly half

reported spending between three and six hours of screen time per day (45%). Globally, older Nunavimmiut reported less screen time. Those who had attended high school were more likely to spend seven hours or more per day in front of a screen. Unemployed Nunavimmiut were more likely to report no screen time than those who were employed (8.9%* vs. 4.8%). There was no association between screen time and sex or coast of residence. All cross-tabulations with sociodemographic factors are presented in Appendix B, Table D.

Figure 3 Screen time per day (%), population aged 16 years and over, Nunavik, 2017



1. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.

2. Statistically significant difference observed using the 5% threshold compared to the 55 and over age 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.

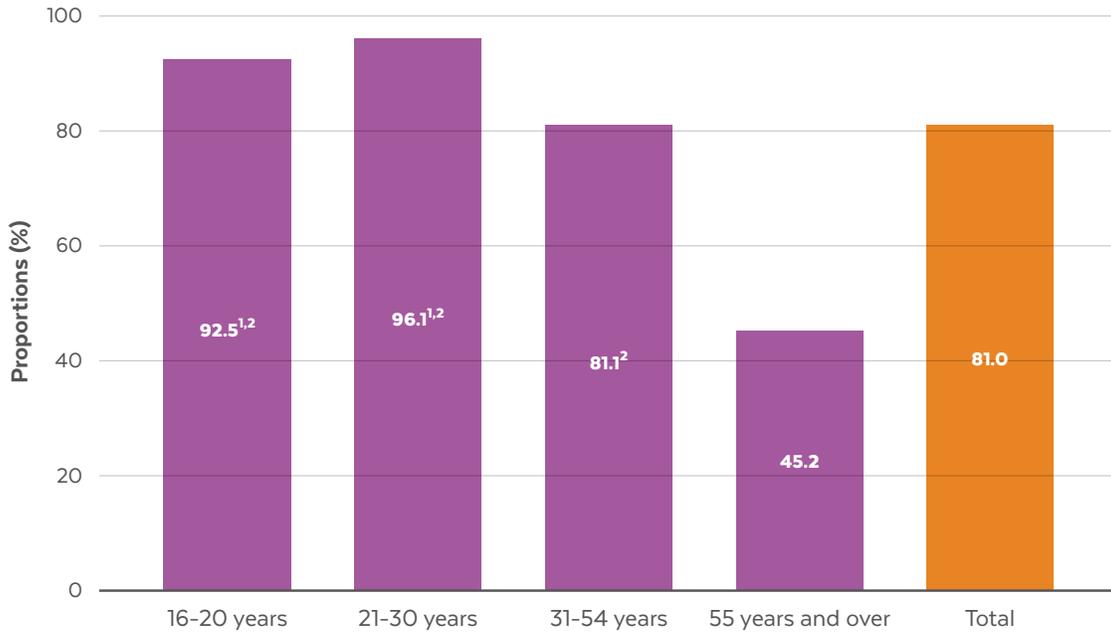
NP: This value is not displayed since some categories have less than 5 respondents.

4.2.2 Internet use

Eight out of ten Nunavimmiut (81%) reported having used the Internet in the past 12 months. More women had used the Internet than men. Internet use was most prevalent among Nunavimmiut under 31 years old, with increasingly lower prevalence being observed among those aged 31-54 and 55 and over (Figure 4). Nunavimmiut who had completed secondary school or higher were more likely to

report Internet use than those who had attended but not completed secondary school. Employed Nunavimmiut were more likely to report Internet use than those who were unemployed, as were Nunavimmiut with a higher annual income. Single, married or common law Nunavimmiut were more likely to use the Internet than those who were separated, divorced or widowed. All cross-tabulations with sociodemographic factors are presented in Table 5.

Figure 4 Internet use in the year preceding the survey by age group (%), population aged 16 years and over, Nunavik, 2017



1. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.
2. Statistically significant difference observed using the 5% threshold compared to the 55 and over age group.

Nunavimmiut reporting higher levels of cultural identity, family cohesion and community cohesion were less likely to have used the Internet in the year preceding the survey (74% vs. 84%, 76% vs. 83% and 72% vs. 86% for lower levels, respectively). Nunavimmiut who reported going on the land often were more likely to have used the Internet than those going on the land occasionally or never (85% vs. 78%) (Table E, Appendix B).

Internet as a source of health information. Use of the Internet as a source of health information in the year preceding the survey was also documented. One out of four Nunavimmiut (28%) had used the Internet to look for information about illnesses or a health problem (Table 3). Women were more likely to use the Internet for health

information (35% vs. 20% for men), while Nunavimmiut aged 30 and younger reported doing so in a lower proportion than older adults (17% and 24% for people aged 16 to 20 and 21 to 30 vs. 33% and 38% for those aged 31 to 54 and 55 years and over, respectively). The Internet was also used by 28% of Nunavimmiut to look for information about life habits, such as diet, exercise or substance use (Table 3). One in seven Nunavimmiut (14%) used the Internet to find information about mental health (depression, anxiety, stress or suicide). A greater proportion was observed among women than men (17% vs. 10% for men). Those aged 16 to 20 years old were more likely than any other age group to look for information about mental health online.

Table 3 The Internet as a source of health information (%), population aged 16 years and over, Nunavik, 2017

	Internet use in the year preceding the survey for information about...		
	Illness or health problem	Life habits (diet, exercise, substance use)	Mental health
Total	27.6	27.9	13.5
Sex			
Men	20.1	26.4	9.7
Women	34.6 ¹	29.2	17.0 ¹
Age group			
16-20 years	17.4 [*]	31.1	21.4
21-30 years	23.7	26.4	12.0 ²
31-54 years	33.3 ^{2,3}	27.3	11.3 ²
55 years and over	37.8 ^{2,3}	28.6 [*]	11.0 ^{**2}

NOTES

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to men.
 2. Statistically significant difference observed using the 5% threshold compared to the 16-20 age group.
 3. Statistically significant difference observed using the 5% threshold compared to the 21-30 age 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.

Social media. Among Nunavimmiut who had used the Internet in the 12 months prior to the survey, 93% reported spending time on social media every day. Women generally spent more time on social media than men (Figure 5). Younger Nunavimmiut (16 to 20) also tended to use social

media more often than their older counterparts. Single Nunavimmiut were more likely than those in a relationship to spend three hours or more daily on social media. All cross-tabulations with sociodemographic variables are presented in Table F, Appendix B.

Figure 5 Daily social media use by sex (%), population aged 16 years and over who had used the Internet in the year prior to the survey, Nunavik, 2017



1. Statistically significant difference observed using the 5% threshold compared to women.
- * 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.

4.2.3 Potential problematic Internet use

Problematic Internet use was documented by the four items presented in Table 4, with no specific time reference. About half of Nunavimmiut (54%) reported that they used the Internet more than they ought to and that they usually stayed on the Internet longer than planned (50%). Two out of five Nunavimmiut believed that they could not cut down on their use of the Internet even though there were times when they would like to (39%), and one in three believed their use of the Internet was sometimes out of control (31%; Table 4).

Table 4 Perception of Internet use in the previous year by sex (% strongly agree or agree), population aged 16 years and over, Nunavik, 2017

	Men	Women	Total
I use the Internet more than I ought to	51.2	57.4	54.4
I usually stay on the Internet longer than I had planned	43.8	56.3	50.3
I cannot cut down on my Internet use	36.3	42.3	39.4
I believe my Internet use is sometimes out of control	29.7	32.4	31.1

Overall, 15% of Nunavimmiut who use the Internet appear at risk of problematic Internet use. Nunavimmiut aged 55 and over were more likely to be considered at risk of problematic Internet use than those aged 30 and younger. Nunavimmiut aged 31 to 54 were also more at risk than those aged 21 to 30. Residents of the Hudson coast were more likely to be at risk than residents of the Ungava coast

(17% vs. 12%). All cross-tabulations with sociodemographic factors are presented in Table 5. Those who usually spent more than seven hours a day sitting were less likely to be at risk of problematic Internet use. All cross-tabulations with sociocultural factors are presented in Table E, Appendix B.

Table 5 Internet use in the previous year and problematic Internet use, by sociodemographic factors (%), population aged 16 years and over, Nunavik, 2017

	Internet use	Problematic Internet use ^a
Total	81.0	14.5
Sex		
Men	77.5 ¹	15.5
Women	84.5	13.6
Age group		
16-20 years	92.5 ^{2,3}	10.9 ^{*3}
21-30 years	96.1 ^{2,3}	10.3 ^{*2,3}
31-54 years	81.1 ³	17.5
55 years and over	45.2	23.4 [*]
Coast		
Hudson	80.0	16.6 ¹
Ungava	82.3	11.8
Marital status		
Single	84.2 ⁴	13.0
Married or common law	81.1 ⁴	15.4
Separated, divorced or widowed	55.7	20.0 ^{**}
Education		
Elementary school or less	39.5 ^{5,6}	22.3 ^{**}
Secondary school not completed	83.8 ^{5,6}	14.5
Secondary school or higher	92.7	13.5
Employment		
Employed	86.4 ¹	13.5
Not employed	70.7	17.2 [*]
Income		
Less than \$20 000	77.1 ¹	13.4
\$20 000 or more	85.8	15.9
Community size		
Large	80.8	15.0
Small	81.2	13.9

NOTES

Coloured cells indicate statistically significant comparisons.

a. Among past-year Internet users only, assessed by four questions on perception of personal Internet use.

1. Statistically significant difference observed using the 5% threshold compared to the other group.
2. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.
3. Statistically significant difference observed using the 5% threshold compared to the 55 and over age group.
4. Statistically significant difference observed using the 5% threshold compared to separated, divorced or widowed Nunavimmiut.
5. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut who had attended but not completed secondary school.
6. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut who had completed secondary school or higher.

* 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.

5 DISCUSSION

Gambling is a popular activity among Nunavimmiut, with half of the population having taken part in some type of gambling monthly during the year prior to the survey (49%). In the *Qanuippitaa? 2004* survey, 60% of Nunavimmiut reported gambling in the year preceding the survey and 31% reported gambling on a weekly basis (Muckle et al., 2007). According to the 2014 Canadian Community Health Survey (CCHS), 53% of Canadians had gambled in the previous year (Statistics Canada, 2014). However, it is to be noted that the prevalence of gambling cannot be directly compared between these three surveys because of methodological differences.

A study on gambling behaviours conducted in a representative sample of Greenlandic Inuit found that 80% of the population had engaged in some type of gambling in the preceding year. Monthly gambling, measured similarly as in *Qanuillirpita? 2017*, varied between 5% and 35% depending on the gambling type (bingo, cards, dice, slot machine).

As in *Qanuippitaa? 2004*, gambling was less prevalent among men than women, and less prevalent among youth aged 16 to 20 than adults. The latter difference seemed to be related directly to age – and not to generation – because youth in the *Qanuippitaa? 2004* survey, now aged 31 and over, have a gambling prevalence similar to that for older adults.

For many Inuit, gambling is a social activity, with some of the most popular gambling types (bingo and cards/dice) often being gathering activities (Larsen et al., 2013; Muckle et al., 2007). However, the emergence of online gambling, a mostly solitary form of gambling, may partly change gambling habits among Nunavimmiut.

Among those who gambled, only 7% reported spending more than \$200 per month on gambling. Not surprisingly, those with more financial means (employed, higher annual income) were more likely to report spending more money on those activities. However, Nunavimmiut with a lower income were at greater risk of a potential gambling problem. For the first time, a prevalence of problem gambling was documented in the Nunavik population aged 16 and over (34% of gamblers). The CCHS 2014 evaluated that only 6% of gamblers are at risk of problem gambling in the general Canadian population. However, a different tool was used, which prevent from making direct comparisons.

The same screening tool for problem gambling was used among Greenlandic Inuit and it yielded a lower prevalence of problem gambling, with women being significantly more at risk than men (10% for men, 16% for women) (Larsen et al., 2013). Although different tools were used to assess problem gambling, young Nunavimmiut aged 16 to 20 (44% of gamblers) appear to be more at risk than young Canadians or Quebecers (about 10% of gamblers aged 15 to 24) (Huang & Boyer, 2007). The Canadian Center on Substance Use and Addiction is currently developing Lower-Risk Gambling Guidelines, which could be used as a starting point, with appropriate cultural adaptation, to promote responsible gambling practices in Nunavik communities (Canadian Centre on Substance Use and Addiction, 2018).

A large majority of Nunavimmiut are spending some time in front of a screen on a daily basis (94%), with more than half of the population reporting three hours or more of screen time per day (56%). There is currently no official recommendation for a maximum daily screen time for adults, despite the fact that screen time has been associated with numerous adverse health outcomes, such as obesity and cardiovascular diseases (Ramsey Buchanan et al., 2016). In a meta-analysis of studies among children and adolescents, daily screen time of two hours or more was associated with an increased risk of depression (Liu, Wu, & Yao, 2016).

Despite the lower speed and higher prices of Internet connections in northern Québec compared to those available further south, a majority of Nunavimmiut had used the Internet in the year preceding the 2017 survey (81%). These results are similar to those for the general Canadian population, where 91% reported using the Internet in the previous month (Statistics Canada, 2016). Those who reported higher family and community cohesion reported less Internet use. It is possible that these individuals spend more time on interpersonal interactions and communication and therefore less time on the Internet. Age might also explain this association as older people report higher cohesion and less time on the Internet. Conversely, the Internet offers new opportunities for Nunavimmiut to stay in touch with their relatives living in other communities or elsewhere.

Women and adults aged 31 and over were more likely to use the Internet to search for health information, highlighting the need for health information sensitive to Inuit realities to be made available online. Social media and online presence are therefore interesting avenues for community organizations and services providers when it comes to reaching the population. The Internet has the potential to provide information, share experiences and even increase access to health and social services in remote communities.

The popularity of social media has grown exponentially in recent years and Nunavik is no exception: nearly everyone who used the Internet reported spending time on social media every day (93%), with younger people and women reporting more time than others. Taking into consideration a growing interest for social media in Nunavik and the multiple roles it plays in communities, this means of communication could be a very powerful way to communicate health information and any other information of general interest to the population (Exner-Pirot, Norbye, & Butler, 2018).

A minority of Nunavimmiut who use the Internet appear to be at risk of problematic Internet use (15%). That being said, the likelihood appears higher among those aged 55 years and over. This association may seem counterintuitive. Proportionally, the subgroup of elders using the Internet may represent a smaller group, but nonetheless a group that requires special attention. Most importantly, older Nunavimmiut may be more inclined to see their use of the Internet as problematic compared to the situation in their youth, when the Internet was not available and not part of everyday life.

6 CONCLUSION

In conclusion, gambling remains a popular activity among Nunavimmiut, with online gambling being a new form of gambling documented in Nunavik communities. Most Nunavimmiut use the Internet and social media on a regular basis. These media are likely to transform many aspects of daily life in Nunavik communities. Problem

gambling, problematic Internet use, along with the adverse effects of spending prolonged periods of time in front of a screen, surely require public health attention. Many behaviours covered in this report are rapidly changing and will keep evolving in the years to come, thus warranting monitoring by community and regional leaders.

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APPENDIX B

SUPPLEMENTARY RESULTS

Table A Gambling and potential gambling problem (%) by sociocultural factors, population aged 16 years and over, Nunavik, 2017

	Gambling prevalence ^a	Potential gambling problem ^b
Total	49.0	33.6
Cultural identity		
Top 30 percentiles	47.9	35.7
Other	49.5	33.0
Frequency of going on the land		
Often	48.6	32.5
Occasionally or never	49.5	34.5
Sedentary time		
7 hours or less	47.0	34.3
More than 7 hours	53.4	32.7
Social support		
Three or four types	51.4	30.5
None to two	48.5	35.1
Family cohesion		
Top 30 percentiles	50.7	29.5
Other	48.5	35.5
Community cohesion		
Top 30 percentiles	43.5 ¹	30.3
Other	52.3	35.4
Involvement in community activities		
Always or often	51.3	34.6
Other	47.5	32.9
Participation in activities promoting healing and wellness		
Yes	48.7	37.5
No	49.2	31.8

NOTES

Coloured cells indicate statistically significant comparisons.

a. Monthly spending of at least \$1 on gambling, in general.

b. Defined by the Lie/Bet questionnaire (at least one positive answer), among gamblers only.

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

Table B Monthly spending on gambling by sociodemographic factors (%), population aged 16 years and over, Nunavik, 2017

	Monthly spending on gambling			
	\$0	\$1 to \$49	\$50 to \$199	\$200 or more
Total	51.0	16.4	22.5	10.2
Sex				
Men	58.8 ¹	17.3	16.7 ¹	7.2 ^{*1}
Women	43.1	15.6	28.3	13.1
Age group				
Men				
16-20 years	81.1 ^{2,3,4}	9.2 ^{**3}	NP	NP
21-30 years	43.4 ⁴	16.7 [*]	26.3 ^{*4}	13.6 ^{**4}
31-54 years	56.3	20.3 [*]	18.4 [*]	5.1 ^{**}
55 years and over	62.6	19.8 [*]	11.4 ^{**}	6.2 ^{**}
Women				
16-20 years	66.9 ^{2,3,4}	16.9 [*]	9.6 ^{**2,3,4}	6.6 ^{**2,3}
21-30 years	38.8	15.8 [*]	28.9	16.5 ^{*4}
31-54 years	34.8 ⁴	16.7	32.5	16.0 ⁴
55 years and over	47.8	11.0 [*]	35.1	6.1 ^{**}
Coast				
Hudson	55.1 ¹	15.5	19.9 ¹	9.5
Ungava	45.5	17.6	25.9	11.0
Marital status				
Single	54.6	16.2	21.7	7.5 [*]
Married or common law	48.0	16.7	22.8	12.5
Separated, divorced or widowed	51.1	15.9 ^{**}	25.4	7.7 ^{**}
Education				
Elementary school or less	50.7	19.5 [*]	23.0 [*]	6.9 ^{**}
Secondary school not completed	53.0	15.6	21.6	9.8
Secondary school or higher	46.0	17.6	24.6	11.9
Employment				
Employed	47.7 ¹	16.5	24.5 ¹	11.4 ¹
Not employed	57.2	16.7	18.7	7.4 [*]
Income				
Less than \$20 000	55.9 ¹	17.1	18.8 ¹	8.3 ¹
\$20 000 or more	43.2	17.4	26.8	12.6
Community size				
Large	50.4	15.3	22.4	11.9
Small	51.7	18.0	22.5	7.8

NOTES

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to the other group.
2. Statistically significant difference observed using the 5% threshold compared to the 21-30 age group.
3. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.
4. Statistically significant difference using the 5% threshold compared to the 55 and over age group.

NP: This value is not displayed since some categories have less than 5 respondents.

* 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 C Monthly spending on gambling by sociocultural factors (%), population aged 16 years and over, Nunavik, 2017

	Monthly spending on gambling			
	\$0	\$1 to \$49	\$50 to \$199	\$200 or more
Total				
Cultural identity				
Top 30 percentiles	52.1	14.2*	22.8	10.9
Other	50.5	17.2	22.4	9.9
Frequency of going on the land				
Often	51.4	15.5	23.1	10.0
Occasionally or never	50.5	17.2	22.1	10.2
Sedentary time				
7 hours or less	53.0	14.8	22.6	9.6
More than 7 hours	46.6	20.0	23.3	10.1
Social support				
Three or four types	48.6	15.3	25.0	11.1*
None to two	51.5	17.0	21.9	9.6
Family cohesion				
Top 30 percentiles	49.3	16.7	24.5	9.4*
Other	51.5	16.3	21.6	10.5
Community cohesion				
Top 30 percentiles	56.5 ¹	15.2	19.0 ¹	9.2*
Other	47.7	17.1	24.5	10.8
Involvement in community activities				
Always or often	48.7	17.5	22.9	10.9
Other	52.5	15.7	22.2	9.6
Participation in activities promoting healing and wellness				
Yes	51.3	15.7	20.8	12.3
No	50.8	16.9	23.0	9.2

NOTES

Coloured cells indicate statistically significant comparisons.

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 D Daily screen time by sociodemographic factors (%), population aged 16 years and over, Nunavik, 2017

	Daily screen time			
	None	2 hours or less	3 to 6 hours	7 hours or more
Total	6.1	37.7	45.1	11.0
Sex				
Men	6.4*	35.1	49.1 ¹	9.4*
Women	5.9	40.4	41.0	12.7
Age group				
16-20 years	NP	NP	40.6 ³	16.3 ^{2,3}
21-30 years	1.9 ^{**2}	41.6	42.3 ³	14.2 ²
31-54 years	5.1 ^{*2}	34.2	50.7 ²	10.1 ²
55 years and over	19.6	36.9	40.8	2.8 ^{**}
Coast				
Hudson	6.3*	37.9	46.7	9.1
Ungava	5.9	37.6	42.9	13.6
Marital status				
Single	4.3 ^{*4}	39.4	40.6	15.7
Married or common law	6.5 ⁴	36.5	50.1 ⁴	6.8 ⁵
Separated, divorced or widowed	16.4 ^{**}	37.6 [*]	31.6 ^{*5}	14.5 ^{**}
Education				
Elementary school or less	23.2 ^{*6,7}	44.2 ⁷	29.2 ^{*6,7}	3.3 ^{**6,7}
Secondary school not completed	4.9 ^{*7}	39.8 ⁷	43.8 ⁷	11.4 ⁷
Secondary school or higher	1.9 ^{**}	30.3	54.9	12.9
Employment				
Employed	4.8 ¹	38.3	46.7	10.3
Not employed	8.9 [*]	37.3	40.8	12.9
Income				
Less than \$20 000	7.2*	42.8 ¹	38.5 ¹	11.5
\$20 000 or more	4.4*	31.5	54.0	10.1
Community size				
Large	5.2*	37.2	48.0 ¹	9.5
Small	7.4	38.5	41.0	13.1

NOTES

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to the other group.
2. Statistically significant difference observed using the 5% threshold compared to the 55 and over age group.
3. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.
4. Statistically significant difference observed using the 5% threshold compared to separated, divorced or widowed Nunavimmiut.
5. Statistically significant difference observed using the 5% threshold compared to single Nunavimmiut.
6. Statistically significant difference observed using the 5% threshold compared to those who had attended but not completed secondary school.
7. Statistically significant difference observed using the 5% threshold compared to those who had completed secondary school or higher.

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Table E Internet use in the previous year and problematic Internet use (%) by sociocultural factors, population aged 16 years and over, Nunavik, 2017

	Internet use	Problematic Internet use ^a
Total	81.0	14.5
Cultural identity		
Top 30 percentiles	73.5 ¹	15.1*
Other	84.0	14.2
Frequency of going on the land		
Often	84.8 ¹	14.1
Occasionally or never	78.2	14.7
Sedentary time		
7 hours or less	77.7	17.0 ¹
More than 7 hours	88.4	10.5*
Social support		
Three or four types	85.6 ¹	15.4
None to two	79.6	13.5
Family cohesion		
Top 30 percentiles	75.5 ¹	13.5
Other	83.4	14.7
Community cohesion		
Top 30 percentiles	71.9 ¹	14.7*
Other	86.1	14.1
Involvement in community activities		
Always or often	82.6	13.9
Other	79.9	14.9
Participation in activities promoting healing and wellness		
Yes	85.7	11.2*
No	79.0	16.0

NOTES

Coloured cells indicate statistically significant comparisons.

a. Among past-year Internet users only, assessed by four questions on perception of personal Internet use.

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 F Daily social media use by sociodemographic factors (%), population aged 16 years and over, Nunavik, 2017

	Daily social media use			
	None	2 hours or less	3 to 6 hours	7 hours or more
Total	6.6	59.3	28.3	5.8
Sex				
Men	8.6 ^{*1}	63.3 ¹	24.4 ¹	3.7 ^{**1}
Women	4.7 [*]	55.6	31.9	7.8
Age group				
Global				
16-20 years	3.9 ^{**2}	52.7 ^{2,3}	35.3 ³	8.1 [*]
21-30 years	5.2 ^{**}	56.1 ²	31.8 ³	6.9 [*]
31-54 years	7.8 [*]	62.7	24.1	5.3 [*]
55 years and over	11.5 ^{**}	68.8	NP	NP
Men				
16-20 years	NP	NP	NP	NP
21-30 years	7.5 ^{**}	61.5	NP	NP
31-54 years	10.4 ^{**}	66.7	19.0 [*]	3.9 ^{**}
55 years and over	13.4 ^{**}	72.8	NP	NP
Women				
16-20 years	3.6 ^{**}	50.9	33.2	12.4 ^{**3}
21-30 years	3.3 ^{**}	51.6	36.4	8.7 [*]
31-54 years	5.4 ^{**}	59.2	28.8	6.6 [*]
55 years and over	9.5 ^{**}	64.6	NP	NP
Coast				
Hudson	7.4 [*]	59.2	28.4	4.9 [*]
Ungava	5.6 [*]	59.4	28.1	7.0 [*]
Marital status				
Single	5.0 [*]	53.4 ³	33.3 ³	8.3 ^{**4}
Married or common law	7.8 [*]	63.8	25.1	3.3 [*]
Separated, divorced or widowed	7.8 ^{**}	66.5	NP	NP
Education				
Elementary completed or less	12.3 ^{**}	69.5	NP	NP
Secondary school not completed	7.2 [*]	59.7	27	6.1 [*]
Secondary school or higher	4.7 ^{**}	57.0	32.4	5.9 [*]
Employment				
Employed	5.7 [*]	61.6	27.2	5.5 [*]
Not employed	9.9 [*]	53.3	30.8	6.9 [*]
Income				
Less than \$20 000	7.2 [*]	58.0	27.9	7.0 [*]
\$20 000 or more	7.6 [*]	60.8	28.0	3.6 [*]
Community size				
Large	7.1 [*]	60.5	27.5	4.9 [*]
Small	5.9 [*]	57.7	29.3	7.1 [*]

NOTES

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to the other group.
2. Statistically significant difference using the 5% threshold compared to the 55 and over age group.
3. Statistically significant difference observed using the 5% threshold compared to the 31-54 age group.
4. Statistically significant difference observed using the 5% threshold compared to married Nunavimmiut.

NP: This value is not displayed since some categories have less than 5 respondents.

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