



Cancer Care Ontario

Prevention System Quality Index: Health Equity

Technical Appendix

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Units, Prevention and Cancer Control
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Indicator data sources

Canadian Community Health Survey (CCHS)

Description

The Canadian Community Health Survey (CCHS) is a population-based, cross-sectional survey conducted by Statistics Canada. It collects information regarding health status, health care utilization and determinants of health for the Canadian population.

Data availability and limitations

CCHS surveys were administered every two years prior to 2007. Since 2007, the CCHS has been administered annually, where two years of data are considered one full cycle. The most recent year for which CCHS data are available is 2014.

The CCHS is representative of approximately 97% of the Canadian population age 12+, but excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions.¹

Ontarians who do not have a phone number (home or mobile) are excluded from the CCHS, which underestimates risk factor prevalence in some of the most vulnerable populations, including those who are homeless.

First Nations Regional Health Survey (RHS)

Description

The First Nations Regional Health Survey (RHS), governed by the First Nations Information Governance Centre, is the only First Nations-governed (in keeping with the First Nations principles of OCAP™, or Ownership, Control, Access and Possession) national health survey in Canada for on-reserve and northern First Nation communities based on both Western and traditional understandings of health and well-being.

Data availability and limitations

The RHS Phase 2 Ontario region included 24 First Nation communities that were randomly selected in a strata and in accordance to their population. Band membership lists were used to identify potential individual respondents. There were three individual surveys: children (ages 6–11), youth (ages 12–17 years), and adult (age 18+). The adult survey included questions about migration, food security, violence, caregiving, depression, the health utilities index and gambling. Since 1997, there have been two iterations of the RHS (Phase I in 2002–2003 and Phase 2 in 2008–10).

Aboriginal Peoples Survey (APS)

Description

The Aboriginal Peoples Survey (APS) is a cross-sectional national survey conducted by Statistics Canada that collects information from individuals who reported Aboriginal identity on the most recent census (or National Household Survey). The APS provides information on the social and economic conditions of off-reserve First Nations, Métis and Inuit in Canada.

Data availability and limitations

There have been four cycles of the APS: 1991, 2001, 2006 and 2012. The APS data used in this report are from the 2012 cycle. The survey includes questions related to education, employment, health, language, income and housing and mobility. Approximately 38,000 Aboriginal respondents were included in APS 2012. The APS 2012 survey sample was selected from individuals age 15 years or older living in private dwellings, excluding people living on reserves and settlements and in certain First Nations communities in Yukon and the Northwest Territories (NWT) who reported Aboriginal identity on the 2011 National Household Survey. The APS incorporates a three-phase design in which the first two phases correspond to the selection of the NHS sample and the third phase corresponds to the selection of the APS sample. The survey was administered primarily using Computer Assisted Telephone Interview (CATI); Computer Assisted Personal Interviews (CAPI) were conducted if individuals could not be contacted by telephone. Data collection took place from February to July 2012. Qualitative testing of the survey was done in collaboration with First Nations people, Métis and Inuit across Canada.

The APS is not a health-specific survey and does not collect information related to cancer screening or vegetable and fruit consumption. In this report, data from the APS was used for indicators of food insecurity for Inuit adults.

Ontario School Information System (OnSIS)

Description

The Ontario School Information System (OnSIS) is the Ontario Ministry of Education's administrative database that comprises board, school, student, educator and course data.

Data availability and limitations

- Data were obtained from the Dissemination and Reporting Unit, Ministry of Education, in March 2017. Data are reported annually by schools, however, for comparability with the 2016 *Prevention System Quality Index's* enrolment in health and physical education indicator, data from the 2013/14 school year were used.
- OnSIS data are collected for school administrative purposes and therefore, may only approximate what the indicator is intended to measure.

General analytic notes

Limitations of self-reported survey data

Self-reported surveys used for the analysis of indicators in this report include the CCHS, RHS and APS. Respondents of self-reported surveys tend to under-report behaviours that are socially undesirable or unhealthy (e.g., alcohol and tobacco use) and over-report behaviours that are socially desirable (e.g., physical activity and vegetable and fruit consumption).

Combined data

For most analyses, combined data (e.g., 2012–2014) from the CCHS, APS or RHS were used to increase the survey sample to a size that minimized sampling variability and to ensure that estimates adhered to Statistics Canada release guidelines.

Statistical significance of differences

Statistically significant differences for First Nations, Inuit and Métis population-specific data and for Ontario-level data were determined using slightly different methods. For First Nations, Inuit and Métis population-specific data, a difference in two estimates is considered to be statistically significant if the 95 percent confidence intervals of the two estimates do not overlap. This is a conservative approach to significance testing, but non-overlapping confidence intervals indicate that it is unlikely that the difference observed between the two groups is due to chance alone. For feasibility, and because many indicators for First Nations, Inuit and Métis populations presented in the *Prevention System Quality Index: Health Equity* report have been published previously in other Cancer Care Ontario reports, additional significance testing was not completed.

For Ontario-level data, additional testing was conducted to assess statistical significance. Statistically significant differences in prevalence estimates between categories of a given socio-demographic factor were tested by comparing the absolute difference between two estimates with the square root of the sum of the margin of error (i.e., the upper 95% confidence limit minus the estimate) squared for each estimate being compared. If the difference between the estimates was greater than the square root of the sum of the squares of the two margins of error, the estimates were considered significantly different (approximately $p < 0.05$). For Ontario-level data, whenever the term “significant” is used, it refers to statistical significance ($p < 0.05$); whenever the phrase “slight but significant” is used, it refers to results that are significant, but that have a relatively small effect size (i.e., an absolute difference of < 5.0 percent between the estimates of interest).

Weighting

All estimates were weighted using the individual or household sampling weights provided by Statistics Canada, adjusted to account for the number of years combined across survey cycles for the CCHS and APS.

Bootstrapping and assessment of sampling variation

For all analyses conducted using CCHS and APS data, bootstrapping techniques were used to obtain variance estimates (i.e., coefficients of variation) and 95% confidence intervals for all estimates.² The coefficient of variation (CV) is a normalized measure of dispersion or spread estimated as the ratio of the standard deviation to the mean. Statistics Canada requires estimates with coefficients of variation of 16.6% to 33.3% to be noted with a warning to users to interpret with caution, due to high sampling variability, and estimates with coefficients of variation >33.3% to be suppressed, due to extreme sampling variability.² Estimates with a CV between 16.6 percent and 33.3 percent are also denoted in the figures by hatched shading and a letter “E”.

Analytic notes: Ontario-level data

Stratification by socio-demographic variables

Where possible, indicators were examined according to socio-demographic factors that can impact health. Socio-demographic factors were categorized into sub-groups and a reference category was selected. Sub-groups were then compared against the reference category to examine whether the estimates were significantly different. Where possible, the reference category represents the sub-group that is presumed to have the most social advantage (e.g., income quintile 5), although other sub-groups may be used as the reference group depending on the socio-demographic factor of interest.

Age restrictions

For analyses of adult populations, indicators were analyzed for respondents age 25 and older to restrict the sample to those who are more likely to have completed their education and reached their adult socio-demographic status.

Age-standardized estimates

To compare estimates across groups and time periods, estimates were generally age-standardized to the 2011 Canadian population. Age-standardization was done using the direct method of standardization and the following age groups: 25–29, 30–44, 45–64, and 65 and older.

Exceptions to these age groups:

- For analyses by *sexual orientation*, age groups of 25–29, 30–44, and 45–59 were used, since the CCHS questionnaire item regarding sexual orientation is not asked of respondents over the age of 59.
- For analyses by *occupation group*, age groups of 25–29, 30–44, 45–64, and 65–75 were used, since the CCHS derived variable regarding occupation group excludes respondents over the age of 75.

Reporting of gradients

Formal tests for trend (e.g., Cochran-Armitage, linear regression, etc.) were not conducted to determine whether gradients were statistically significant. In the text, the phrase “clear gradient” (or “clear inverse gradient”) is used when prevalence increased (or decreased) significantly with each level of an ordinal socio-demographic variable (i.e., income, education or immigration), as determined by non-overlapping confidence intervals. For instances in which prevalence *appeared* to increase (or decrease) with each level of the ordinal variable (i.e., the point estimate increased or decreased, but there was some overlap between confidence intervals), a reference to an apparent gradient is made, since further significance testing was not

conducted to determine whether such increases or decreases were statistically significant. (For example, “There appeared to be an inverse gradient for income, with smoking prevalence increasing as income level decreased.”)

Limitations of univariate approach

The descriptive analyses conducted for the *Prevention System Quality Index: Health Equity* report allow for the examination of how various risk factors or policy effects are distributed across a given socio-demographic factor. For feasibility, the stratification of indicators by selected socio-demographic factors was conducted using a univariate approach. As such, the potential effects of other socio-demographic variables were not controlled for or quantified.

Analytic notes: First Nations, Inuit and Métis population-specific data

Aboriginal identity

On-reserve First Nations: this population is defined as respondents of the First Nations Regional Health Survey (random sample of First Nations living on-reserve) who were part of the band/membership list of one of 24 communities selected for participation in the RHS phase 2.

Off-reserve First Nations: this population is defined as respondents to the Canadian Community Health Survey born in Canada, the United States, Germany or Greenland who identified as First Nations or First Nations and Inuit.

Métis: this population is defined as respondents to the Canadian Community Health Survey born in Canada, the United States, Germany or Greenland who identified as Métis or Métis in combination with any other Aboriginal identity.

Inuit in Nunangat: this population is defined as respondents of the Aboriginal Peoples Survey who identified as Inuit and were residing in the Inuit Nunangat region (Nunatsiavut, Nunavik, Nunavut and Inuvialuit regions) at the time of the 2011 National Household Survey.

Inuit outside Nunangat: this population is defined as respondents of the Aboriginal Peoples Survey who identified as Inuit and were not residing in the Inuit Nunangat region (Nunatsiavut, Nunavik, Nunavut and Inuvialuit regions) at the time of the 2011 National Household Survey. Given the small numbers of Ontario Inuit respondents in the APS, the outside Nunangat population is used as a proxy for the Ontario Inuit population.

Inuit in Ontario: this population is defined as respondents of the Aboriginal Peoples Survey who identified as Inuit and reported residing in Ontario at the time of the 2011 National Household Survey.

Non-Aboriginal: this population is defined as respondents in Ontario who did not self-identify as Aboriginal, or who identified as Aboriginal, but were born outside of Canada, the United States, Germany or Greenland.

Age-standardized estimates

Where indicated, estimates were age-standardized by the direct method of standardization.

- For analyses of First Nations and Métis populations, all estimates of proportion for adults (apart from those for specific age groups) are age-standardized to the age distribution of the Ontario Aboriginal Identity population in the 2006 census using the age groups 20-24, 25-44, 45-64 and 65+.
- For analyses of Inuit populations, all estimates (excluding estimates stratified by age groups) are age-standardized to the age distribution of the Canadian outside Inuit Nunangat identity population in the 2006 census using age groups of 15-24, 25-55, 55-64, 65 and over.

Socio-demographic factors: Ontario-level data

Socio-demographic factors used for the stratification of indicators are based on self-reported data.

Sex

Definition: Sex of the respondent

Categories: male; female

Reference category used for analysis: male

Income quintile

Definition: Respondents' derived household income sorted into quintiles based on the ratio of household income to the low-income cut-off (LICO) for the household size and community. The low income cut-off is the threshold at which a family would typically spend a larger portion of its income than the average family on the necessities of food, shelter and clothing. Starting in 2011, Statistics Canada imputed all missing household incomes to account for the one-third of missing responses to the income question.

Categories: income quintiles 1 through 5

Reference category used for analysis: quintile 5 (highest)

Education (individual)

Definition: Highest level of education attained by the respondent.

Categories: less than secondary school education; secondary school graduate (includes secondary school graduation, no post-secondary education and some post-secondary education); post-secondary graduate

Reference category used for analysis: post-secondary graduate

Education (household)

Definition: Highest level of education attained by any member of a household. Household education was used for analysis of indicators for adolescent age groups (e.g., ages 12–19).

Categories: less than secondary school education; secondary school graduate (includes secondary school graduation, no post-secondary education and some post-secondary education); post-secondary graduate

Reference category used for analysis: post-secondary graduate

Residence

Definition: Respondents living within any census metropolitan area (CMA) or census agglomeration (CA) were considered urban residents and those living outside of any CMA or CA were classified as rural residents

Categories: urban; rural

Reference category used for analysis: urban

Geography

Definition: The northern region is defined to include Algoma, North Bay-Parry Sound, Northwestern, Porcupine, Sudbury, Thunder Bay, and Timiskaming health units. The remaining 29 health units comprise the southern region. This is consistent with the Ministry of Health and Long-Term Care's definitions of northern and southern regions used for analysis of the Nutritious Food Basket data.³

Categories: northern; southern

Reference category used for analysis: southern

Immigration

Definition: Distinguishes immigrants, according to time since immigration, from the Canadian-born population based on three categories. Years since immigration is calculated from the first time the respondent arrived in Canada (excluding holidays) to live as a landed immigrant, by claiming refugee status, with a work permit or with a study permit.

Categories: less than or equal to 10 years in Canada; more than 10 years in Canada; Canadian-born

Reference category used for analysis: Canadian-born

Cultural or racial group

Definition: Cultural or racial background of the respondent

Categories: white; Black; East and Southeast Asian (includes Filipino, Japanese, Korean, Chinese and Southeast Asian); West and South Asian or Arab (includes South Asian, Arab and West Asian); other (includes Latin American, other cultural or racial origin and multiple cultural/racial origins)

Reference category used for analysis: white

Notes:

- The CCHS derived variable regarding cultural/racial background (SDCDCGT) includes the following 13 categories: white only; Black only; Korean only; Filipino only; Japanese only; Chinese only; South Asian only; Southeast Asian only; Arab only; West Asian only; Latin American only; Other cultural or racial origin (only); Multiple cultural or racial origins.

- The CCHS questionnaire item regarding cultural or racial origin excludes Aboriginal respondents. Beginning in June 2005, respondents who identified themselves as Aboriginal (First nation, Métis or Inuk/Inuit) or who answered "Don't know" or "Refused" to the CCHS questionnaire item regarding Aboriginal identity (SDC_41) were not asked about their cultural or racial background.

Sexual orientation

Definition: Sexual orientation of the respondent

Categories: heterosexual; gay, lesbian or bisexual

Reference category used for analysis: heterosexual

Notes:

- The CCHS questionnaire item regarding sexual orientation (SDC_7AA) is asked only of respondents ages 18-59.
- The response options for the CCHS questionnaire item regarding sexual orientation are: heterosexual; homosexual; or bisexual. For analyses by this socio-demographic factor, the following categories were combined to increase the survey sample to a size that is acceptable for the release of estimates without introducing a high degree of sampling variability: homosexual; bisexual

Occupational group

Definition: The occupational group (based on job type) the respondent belongs to using the National Occupational Classification - Statistics (NOC-S) 2006 at the 2-digit level. An occupational group is defined as a collection of jobs, which are grouped by the type of work performed.

Categories: management; business, finance and administration; natural and applied human sciences and related; health occupations; social science, education, government service and religion; art, culture, recreation and sport; trades, transport, equipment operators and related; occupations unique to primary industry; occupations unique to processing, manufacturing and utilities; sales and service

Reference category used for analysis: sales and service

Notes:

- The CCHS derived variable regarding occupational group (LBSDOCC) includes only respondents ages 15-75.
- For most analyses by this stratifier, the "Sales and Service" group had the largest sample size. Therefore, this sub-group was selected as the reference category.

Socio-demographic factors: First Nations, Inuit and Métis population-specific data

Socio-demographic factors used for the stratification of indicators are based on self-reported data.

Sex

Definition: Sex of the respondent

Categories: male; female

Reference category used for analysis: male

Household income

Definition: Reported or derived household income for each respondent is adjusted for household size and community, sorted from highest to lowest and sorted into five categories (quintiles) so that about the same number of Ontario households is in each category (about 20% in each). Quintile 1 includes the approximately 20% of households with the lowest incomes and quintile 5 includes the approximately 20% of households with the highest incomes.

Categories: income quintiles 1 through 5

Reference category used for analysis: quintile 5 (highest)

Education

Definition: Highest level of education attained by the respondent

Categories: Less than secondary school graduation; secondary school graduate (includes secondary school graduation, no post-secondary education; and some post-secondary education); post-secondary graduate

Reference category used for analysis: post-secondary graduate

Tobacco indicators: Ontario-level data

Percentage of adults who are current smokers

Definition

The percentage of adults (age 25+) in Ontario who report smoking cigarettes daily or occasionally.

Calculation

$$\frac{\text{Weighted number of adults age 25+ who smoke daily or occasionally}}{\text{Weighted total population age 25+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household income, education, residence, geography, immigration status, cultural or racial group, sexual orientation, and occupational group.
- Age-standardized estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of cultural or racial group, sexual orientation and occupational group, where estimates were calculated for 2010–2014 combined.

Technical specifications

Survey questions – CCHS smoking module:

- At the present time, do you smoke cigarettes daily, occasionally or not at all?

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Exposure to second-hand smoke

Definition

Percentage of non-smoking adults (age 25+) or adolescents (ages 12–19) in Ontario, who are regularly (i.e., every day or almost every day) exposed to second-hand cigarette smoke in their home, in a private vehicle or in public places (e.g., outside of bars, restaurants, shopping malls, arenas).

Calculations

Second-hand smoke exposure in the home

$$\frac{\text{Weighted number of non-smokers age 25+ exposed to second-hand smoke in the home}}{\text{Weighted total population of non-smokers age 25+}} \times 100$$

$$\frac{\text{Weighted number of non-smokers ages 12–19 exposed to second-hand smoke in the home}}{\text{Weighted total population of non-smokers ages 12–19}} \times 100$$

Second-hand smoke exposure in a vehicle

$$\frac{\text{Weighted number of non-smokers age 25+ exposed to second-hand smoke in a vehicle}}{\text{Weighted total population of non-smokers age 25+}} \times 100$$

$$\frac{\text{Weighted number of non-smokers ages 12–19 exposed to second-hand smoke in a vehicle}}{\text{Weighted total population of non-smokers ages 12–19}} \times 100$$

Second-hand smoke exposure in public places

$$\frac{\text{Weighted number of non-smokers age 25+ exposed to second-hand smoke in public places}}{\text{Weighted total population of non-smokers age 25+}} \times 100$$

$$\frac{\text{Weighted number of non-smokers ages 12–19 exposed to second-hand smoke in public places}}{\text{Weighted total population of non-smokers ages 12–19}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household income, education, residence, geography, immigration status, and sexual orientation.
- Age-standardized estimates were calculated for each location of exposure (home, vehicles and public places) for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of sexual orientation, where estimates were calculated for 2010–2014 combined.

Prevalence estimates for adolescents (ages 12–19):

- Stratification variables: sex, household income, household education, residence, and geography.
- Unadjusted (i.e., crude) estimates were calculated for each location of exposure (home, vehicles and public places) for 2012–2014 combined for analysis by all socio-demographic variables.

Technical specifications

Survey questions – CCHS smoking module:

- Including both household members and regular visitors, does anyone smoke inside your home every day or almost every day?
- In the past month, were you exposed to second-hand smoke every day or almost every day in a car or other private vehicle?
- In the past month, were you exposed to second-hand smoke every day or almost every day in public places (such as bars, restaurants, shopping malls, arenas, bingo halls, bowling alleys)?

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Smoke-free policies in social housing

Definition

The presence or absence of smoke-free policies in selected local social housing corporations.

Analysis

- The smoke-free policy status as of May 2017 for the following 12 local housing corporations was identified: CityHousing Hamilton; The District of Thunder Bay Social Services Administration Board; Greater Sudbury Housing Corporation; Halton Community Housing Corporation; Housing York Inc.; London and Middlesex Housing Corporation; Niagara Regional Housing; Ottawa Community Housing Corporation; Peel Housing Corporation (operating as Peel Living); Toronto Community Housing Corporation; Waterloo Region Housing; and Windsor Essex Community Housing Corporation (updated in February 2018).
- All 47 local housing corporation websites were scanned to identify corporations with more than 1,500 residential units. In a few cases the number of units were obtained from other authoritative websites, such as the municipality.
- 12 local housing corporations above that threshold were identified and their websites were scanned for smoke-free policies.
- Each of the 12 local housing corporations were contacted via e-mail to confirm the information that was retrieved from the web, and to obtain additional relevant policies, such as smoke-free building policies. We confirmed or requested a copy of all policies.

Considerations

- For feasibility purposes, the indicator was limited to local housing corporations with more than 1,500 residential units.

Data sources

- CityHousing Hamilton, personal communication, June 27, 2017.
- The District of Thunder Bay Social Services Administration Board, personal communication, June 9, 2017.
- Greater Sudbury Housing Corporation, personal communication, July 10, 2017.
- Halton Community Housing Corporation, personal communication, July 4, 2017.
- Housing York Inc., personal communication, June 26, 2017.
- London and Middlesex Housing Corporation, personal communication, June 22, 2017.
- Niagara Regional Housing, personal communication, June 8, 2017.
- Ottawa Community Housing Corporation, personal communication, June 21, 2017.
- Peel Housing Corporation (operating as Peel Living), personal communication, June 13, 2017.
- Toronto Community Housing Corporation, personal communication, June 7, 2017.
- Waterloo Region Housing, personal communication, June 27, 2017.
- Windsor Essex Community Housing Corporation, personal communication, June 8, 2017 (updated February 2018).

Quit attempts

Definition

The percentage of adults (age 25+) in Ontario who have tried to quit smoking for at least 24 hours in the past 12 months.

Calculation

$$\frac{\text{Weighted number of adults age 25+ who have tried to quit smoking for at least 24 hours in the past 12 months}}{\text{Weighted total population of adults age 25+ who are current daily or occasional smokers}} \times 100$$

All calculations exclude:

- Respondents in the non-response categories (refusal, don't know, and not stated) for required questions.
- Respondents who have never smoked a whole cigarette and respondents who have not smoked a total of 100 cigarettes or more in their lifetime were excluded from the population.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household income, education, residence, geography, immigration status, sexual orientation, and occupational group.
- Age-standardized estimates were calculated for 2013–2014 combined for analysis by all socio-demographic variables.

Considerations

- The CCHS survey item pertaining to quitting smoking (SCH_3) was not asked during the 2009, 2010, 2011 or 2012 survey cycles.

Technical specifications

Survey questions – CCHS smoking module:

- In the past 12 months, did you stop smoking for at least 24 hours because you were trying to quit?

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2013–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Long-term smoking cessation

Definition

Percent of adult ever smokers (age 25+) in Ontario who quit smoking completely at least one year ago.

Calculation

$$\frac{\text{Weighted number of adult ever smokers age 25+ who quit smoking completely at least one year ago}}{\text{Weighted total population of ever smokers age 25+}} \times 100$$

Where *ever smokers* are defined as adults who had ever smoked daily or occasionally and who had smoked 100 cigarettes or more in their lifetime.

All calculations exclude:

- Respondents in the non-response categories (refusal, don't know, and not stated) for required questions.
- Respondents who have never smoked a whole cigarette and respondents who have not smoked a total of 100 cigarettes or more in their lifetime.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household income, education, residence, geography, immigration status, cultural or racial group, sexual orientation, and occupational group.
- Age-standardized estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of cultural or racial group, sexual orientation and occupational group, where estimates were calculated for 2010–2014 combined.

Considerations

- To increase the sample size, the numerator includes ever smokers (age 25+) who quit smoking completely at least one year ago. This long-term smoking cessation indicator differs from that used in the 2016 *Prevention System Quality Index*, which measured the percentage of adult recent daily smokers (daily smokers one to two years ago) who have quit smoking completely for at least one year.

Data sources

- Canadian Community Health Survey full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Tobacco indicators: First Nations, Inuit and Métis population-specific data

Current smoking in First Nations, Métis and Inuit

Definition

The percentage of First Nations people (age 12+) in Ontario who report smoking cigarettes daily or occasionally. The percentage of Métis adolescents (ages 12–19) and adults (age 20+) in Ontario who report smoking cigarettes daily or occasionally. The percentage of Inuit (age 15+) who report smoking cigarettes daily or occasionally.

Calculation

$$\frac{\text{Weighted number of people who smoke daily or occasionally}}{\text{Weighted total population}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for First Nations people on- and off-reserve (age 12+):

- Unadjusted (i.e., crude) estimates were calculated for 2007–2013 combined for First Nations off-reserve and non-Aboriginal people and for 2008/10 for First Nations on-reserve in Ontario, by age group (12–17, 20–29, 30–44, 45–64 and 65+).
- Age standardized estimates were calculated for 2007–2013 combined for First Nations off-reserve and non-Aboriginal people and for 2008/10 for First Nations on-reserve in Ontario (age 20+).

Prevalence estimates for Métis adolescents (ages 12–19) and adults (age 20+):

- Unadjusted (i.e., crude) estimates were calculated for 2007–2014 combined for Métis and for non-Aboriginal adolescents in Ontario.
- Age-standardized estimates were calculated for 2007–2014 combined for Métis and for non-Aboriginal adults in Ontario.

Prevalence estimates for Inuit:

- Age-standardized estimates were calculated for 2012 for Inuit in Ontario and for non-Aboriginal adults in Ontario (age 20+).
- Unadjusted (i.e., crude) estimates were calculated for 2012 for Inuit in and outside Nunangat in Canada and for non-Aboriginal people in Ontario, by age group (12–24, 25–44 and 45+).

Considerations

- The RHS youth survey is administered only to respondents ages 12–17. For smoking indicators, adults are defined as those aged 20+ (based on core indicators established by the Association of Public Health Epidemiologists of Ontario). Therefore, respondents ages 18–19 are not included in either the First Nations adolescent or adult analyses.

Technical specifications

Survey questions – CCHS, RHS and APS (indicator is directly comparable across data sources):

- At the present time, do you smoke cigarettes daily, occasionally or not at all?

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2007–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care. (First Nations off-reserve, Métis and non-Aboriginal data)
- First Nations Regional Health Survey (RHS) Phase 2 (2008/10). First Nations Information Governance Centre. (First Nations on-reserve data)
- Aboriginal Peoples Survey (APS) 2012. Statistics Canada. (Inuit data)

Second-hand smoke exposure in First Nations, Métis and Inuit

Definition

The percentage of non-smoking First Nations adults (age 20+) and adolescents (ages 12–19) in Ontario who are regularly (every day or almost every day) exposed to second-hand smoke in any location (i.e., at home, in a private vehicle or in public places). The percentage of Métis adults (age 20+) or adolescents (ages 12–19) in Ontario who are regularly (every day or almost every day) exposed to second-hand smoke at home or in a private vehicle, or in public places. The percentage of Inuit in Canada (age 15+) who are regularly (every day or almost every day) exposed to second-hand smoke at home.

Calculations

Second-hand smoke exposure in any location

$$\frac{\text{Weighted number of non-smokers exposed to second-hand smoke in homes, vehicles or public places}}{\text{Weighted total population of non-smokers}} \times 100$$

Second-hand smoke exposure in a home or vehicle

$$\frac{\text{Weighted number of non-smokers exposed to second-hand smoke in homes or vehicles}}{\text{Weighted total population of non-smokers}} \times 100$$

Second-hand smoke exposure in public places

$$\frac{\text{Weighted number of non-smokers exposed to second-hand smoke in public places}}{\text{Weighted total population of non-smokers}} \times 100$$

Second-hand smoke exposure in the home

$$\frac{\text{Weighted number of non-smokers exposed to second-hand smoke in the home}}{\text{Weighted total population of non-smokers}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for First Nations adolescents (ages 12–19) and adults (age 20+):

- Unadjusted (i.e., crude) estimates were calculated for 2007–2013 combined for off-reserve First Nations adolescents and for non-Aboriginal adolescents in Ontario exposed to second-hand smoke in homes, vehicles or public locations.
- Age-standardized estimates were calculated for 2007–2013 combined for off-reserve First Nations adults and for non-Aboriginal adults in Ontario exposed to second-hand smoke in homes, vehicles or public locations.

Prevalence estimates for Métis adolescents (ages 12–19) and adults (age 20+):

- Unadjusted (i.e., crude) estimates were calculated for 2007–2014 combined for Métis adolescents and for non-Aboriginal adolescents in Ontario exposed to second-hand smoke in homes or vehicles, and in public locations.
- Age-standardized estimates were calculated for 2007–2014 combined for Métis adults and for non-Aboriginal adults in Ontario exposed to second-hand smoke in homes or vehicles, and in public locations.

Prevalence estimates for Inuit (age 15+):

- Age-standardized estimates were calculated for 2012 for Inuit in Canada and for non-Aboriginal adults in Ontario exposed to second hand smoke in homes, by sex.

Technical specifications

Survey questions – CCHS and APS (indicator is directly comparable across data sources):

- Including both household members and regular visitors, does anyone smoke inside your home every day or almost every day?
- In the past month, were you exposed to second-hand smoke every day or almost every day in a car or other private vehicle?
- In the past month, were you exposed to second-hand smoke every day or almost every day in public places (such as bars, restaurants, shopping malls, arenas, bingo halls, bowling alleys)?

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2007–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care. (First Nations off-reserve, Métis and non-Aboriginal data)
- Aboriginal Peoples Survey (APS) 2012. Statistics Canada. (Inuit data)

Alcohol indicators: Ontario-level data

Percentage of adults who drink alcohol in excess of cancer prevention recommendations

Definition

The percentage of adults (age 25+) who report drinking alcohol in excess of the maximum recommended amount for cancer prevention (i.e., >2 drinks per day for men and >1 drink per day for women).

Calculation

$$\frac{\text{Weighted number of adults age 25+ who in past week on average exceed the maximum recommended alcohol consumption for cancer prevention}}{\text{Weighted total population age 25+}} \times 100$$

Where the maximum recommended alcohol consumption for men is two drinks per day and for women is one drink per day, as specified by the World Cancer Research Fund and the American Institute for Cancer Research.

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household education, education, residence, immigration status, and sexual orientation.
- Age-standardized estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of sexual orientation, where estimates were calculated for 2010–2014 combined.

Considerations

- The cancer prevention guideline daily limit (two drinks a day for males, one drink a day for females) was assessed based on self-reported alcohol consumption for the seven days prior to the CCHS survey interview. To calculate the percentage of adults reporting alcohol consumption in excess of the maximum recommended amount for cancer prevention, the average number of drinks consumed daily was calculated from the total number of drinks consumed in the week prior to the survey. As such, the estimates include males who consumed in excess of 14 drinks, and females who consumed in excess of 7 drinks in the week prior to the survey interview. They do not, however, capture people who drank within

the weekly limit but exceeded the cancer prevention guideline daily limit on one or more days. If the percentage of adults who exceeded the maximum recommended amount for cancer prevention on one or more days per week were calculated, the estimates would be higher. The more conservative method of calculation used for this analysis is based on existing evidence linking average total alcohol consumption with cancer risk.

Technical specifications

Survey questions – CCHS alcohol module:

- Thinking back over the past week, did you have a drink of beer, wine, liquor or any other alcoholic beverage?
- Starting with yesterday, how many drinks did you have? (Question repeated for each day of the past week).

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Percentage of adults who binge drink

Definition

The percentage of adult (age 25+) females who report consuming four or more drinks or males who report consuming five or more drinks on one occasion at least once per month in the past 12 months.

Calculation

$$\frac{\text{Weighted number of adults age 25+ who report drinking four or more drinks (females) or five or more drinks (males) on one occasion at least once per month}}{\text{Weighted total population age 25+ who drank alcohol in the past 12 months}} \times 100$$

All calculations exclude:

- Respondents in the non-response categories (refusal, don't know, and not stated) for required questions.
- Respondents who reported that they had not consumed alcohol in the past 12 months.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household education, education, residence, immigration status, and sexual orientation.
- Age-standardized estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of sexual orientation, where estimates were calculated for 2010–2014 combined.

Technical specifications

Survey questions – CCHS alcohol module:

- During the past 12 months, have you had a drink of beer, wine, liquor or any other alcoholic beverage?
- How often in the past 12 months have you had [4 or more drinks (if female) or 5 or more drinks (if male)]?

Data sources

- Canadian Community Health Survey full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Frequency of binges among adults who binge drink

Definition

The percentage of adult (age 25+) binge drinkers who binge drink once a week or more.

Calculation

$$\frac{\text{Weighted number of binge drinkers age 25+ who binge drink once a week or more}}{\text{Weighted number of binge drinkers age 25+}} \times 100$$

Where *binge drinkers* are defined as females who have consumed four or more drinks or males who have consumed five or more drinks on one occasion at least once per month in the past 12 months.

All calculations exclude:

- Respondents in the non-response categories (refusal, don't know, and not stated) for required questions.
- Adults age 25+ who were not binge drinkers (i.e., did not have a binge drinking episode once a month or more).

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household education, education, residence, immigration status, and sexual orientation.
- Prevalence estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of sexual orientation, where estimates were calculated for 2010–2014 combined.

Technical specifications

Survey questions – CCHS alcohol module:

- How often in the past 12 months have you had [4 or more drinks (if female) or 5 or more drinks (if male)]?

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Intensity of binge drinking per binge

Definition

The average number of drinks consumed per binge drinking episode for adult (age 25+) binge-drinkers.

Calculation

$$\frac{\text{Weighted total number of drinks consumed by binge drinkers age 25+ during past-week binges}}{\text{Weighted number of days in the past week during which a binge drinker age 25+ had a binge episode}} \times 100$$

Where *binge drinkers* are defined as females who have consumed four or more drinks or males who have consumed five or more drinks on one occasion at least once per month in the past 12 months.

All calculations exclude:

- Respondents in the non-response categories (refusal, don't know, and not stated) for required questions
- Adults age 25+ who were not binge drinkers (i.e., did not have a binge drinking episode once a month or more).

Analysis

Estimates for adults (age 25+):

- Stratification variables: sex, household education, education, residence, immigration status and sexual orientation.
- Intensity of binges was calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of sexual orientation, where estimates were calculated for 2010–2014 combined.

Technical specifications

Survey questions – CCHS alcohol module:

- How often in the past 12 months have you had [4 or more drinks (if female) or 5 or more drinks (if male)]?
- Starting with yesterday, how many drinks did you have? (Question repeated for each day of the past week).

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Alcohol indicators: First Nations, Inuit and Métis population-specific data

Abstinence from alcohol in First Nations, Métis and Inuit

Definition

The percentage of First Nations adults, Métis adults or Inuit adults (age 19+) who report not having an alcoholic drink in the past 12 months.

Calculation

$$\frac{\text{Weighted number of adults age 19+ who abstained from drinking alcohol in the past 12 months}}{\text{Weighted total population age 19+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) and pregnant women.

Analysis

Prevalence estimates for First Nations on- and off-reserve adults (age 19+):

- Age-standardized estimates were calculated for 2007–2013 combined for off-reserve First Nations and for non-Aboriginal adults in Ontario, by sex.
- Age-standardized estimates were calculated for 2008/10 for on-reserve First Nations in Ontario, by sex.

Prevalence estimates for Métis adults (age 19+):

- Age-standardized estimates were calculated for 2007–2014 combined for Métis and for non-Aboriginal adults in Ontario, by sex.

Prevalence estimates for Inuit (age 19+):

- Age-standardized estimates were calculated for 2012 for Inuit in and outside Nunangat in Canada and for non-Aboriginal adults in Ontario, by sex.

Technical specifications

Survey question – CCHS, RHS and APS (indicator is directly comparable across data sources):

- During the past 12 months, have you had a drink of beer, wine, liquor or any other alcoholic beverage?

Data sources

- Canadian Community Health Survey (CCHS) full-survey waves 2007–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care. (off-reserve First Nations, Métis and non-Aboriginal data)
- First Nations Regional Health Survey (RHS) Phase 2 (2008/10). First Nations Information Governance Centre. (First Nations on-reserve data)
- Aboriginal Peoples Survey (APS) 2012. Statistics Canada. (Inuit data)

Percentage of First Nations, Métis and Inuit adults who binge drink

Definition

The percentage of First Nations adults, Métis adults or Inuit (age 19+) who report drinking 5 or more drinks on one occasion at least 2–3 times a month in the past 12 months.

Calculation

$$\frac{\text{Weighted number of adults age 19+ who report drinking 5 or more drinks on one occasion at least 2–3 times per month in the past 12 months}}{\text{Weighted total population age 19+}} \times 100$$

All calculations exclude:

- Respondents in the non-response categories (refusal, don't know, and not stated) for required questions.
- Pregnant women.

Analysis

Prevalence estimates for First Nations on- and off-reserve adults (age 19+):

- Age-standardized estimates were calculated for 2007–2013 combined for off-reserve First Nations and for non-Aboriginal adults in Ontario, by sex.
- Age-standardized estimates were calculated for 2008/10 for on-reserve First Nations in Ontario, by sex.

Prevalence estimates for Métis adults (age 19+):

- Age-standardized estimates were calculated for 2007–2013 combined for Métis and for non-Aboriginal adults in Ontario, by sex.

Prevalence estimates for Inuit (age 19+):

- Age-standardized estimates were calculated for 2012 for Inuit in and outside Nunangat in Canada and for non-Aboriginal adults in Ontario, by sex.

Considerations

- This estimate is used as proxy to express excessive alcohol consumption since alcohol consumption in excess of cancer prevention guidelines could not be measured through RHS Phase 2 (2008/10).

Technical specifications

Survey question – CCHS, RHS and APS (indicator is directly comparable across data sources):

- How often in the past 12 months have you had 5 or more drinks on one occasion? Response options: 2-3 times a month, once a week, more than once a week, every day

Data sources

- Canadian Community Health Survey (CCHS) 2007-2014. Statistics Canada. (off-reserve First Nations, Métis, non-Aboriginal data)
- First Nations Regional Health Survey (RHS) Phase 2 (2008/10). First Nations Information Governance Centre. (First Nations on-reserve data)
- Aboriginal Peoples Survey (APS) 2012. Statistics Canada. (Inuit data)

Healthy eating indicators: Ontario-level data

Percentage of adults with inadequate vegetable and fruit consumption

Definition

The percentage of adults (age 25+) who report consuming vegetables (excluding potatoes) and fruit fewer than 5 times per day.

Calculation(s)

$$\frac{\text{Weighted number of adults age 25+ consuming vegetables (excluding potatoes) and fruit fewer than 5 times per day}}{\text{Weighted total population age 25+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household income, education, residence, geography, immigration status, and cultural or racial group.
- Age-standardized estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of cultural or racial group, where estimates were calculated for 2010–2014 combined.

Considerations

- The CCHS collects data regarding the frequency of vegetable and fruit consumption rather than the quantity consumed. As a result, no inferences can be made regarding the number of servings of vegetables and fruit consumed per day.

Technical specifications

Survey questions – CCHS fruit and vegetable consumption module:

- Questions regarding consumption of: fruit juice; fruit (excluding fruit juice); green salad; potatoes (excluding French fries, fried potatoes or potato chips); carrots; and, other vegetables (excluding carrots, potatoes or salad).
- Fruit juice consumption was counted only once per day, if multiple servings were consumed in a day.

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Percentage of households that are food insecure

Definition

Percentage of Ontario households reporting food insecurity in the past 12 months (marginal, moderate or severe, combined). Household food insecurity includes marginal (limiting food selection or worrying about running out of food); moderate (compromising on food quality and/or quantity); or severe (reducing food consumption or missing meals) food insecurity.

Calculation

$$\frac{\text{Weighted number of marginally, moderately and severely food insecure households}}{\text{Weighted total number of households}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for households:

- Stratification variables: household income and geography.
- Estimates were calculated for overall household food insecurity (marginal, moderate and severe combined) for 2012–2014 combined for analysis by all socio-demographic variables.

Technical specifications

Survey questions – CCHS food security module (household food security status modified version):

- This variable is based on 10 questions and describes the food security status of all members of a household. Of the 18 questions, 10 focus on the experiences of adults, while eight focus on children in the household.

Food insecurity status:

- Statistics Canada calculates food security status with households being classified as “food secure”, “moderately food insecure”, or “severely food insecure” based on an increasing number of affirmative responses. In addition to Statistics Canada’s derivation of food insecurity status, “marginal food insecurity” was also derived to identify individuals who would otherwise be classified as food secure, but may experience food insecurity.⁴
- Household food insecurity status was based on the number of affirmative responses to the adult/children questions, where:
 - Food secure = 0 adult affirmed responses and 0 child affirmed responses
 - Marginal food insecurity = 1 adult affirmed response or 1 child affirmed response

- Moderate food insecurity = 2 to 5 adult affirmed responses or 2 to 4 child affirmed responses
- Severe food insecurity = 6 or more adult affirmed responses or 5 or more child affirmed responses

Sampling weights:

- Analysis of household food insecurity is based on the household sampling weights from the CCHS, rather than the individual sampling weights. By using household weights, this indicator reflects the number of people living in a food-insecure household.

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2012–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Percentage of adults who are food insecure

Definition

The percentage of adults (age 25+) reporting food insecurity in the past 12 months (marginal, moderate or severe, combined). Individual food insecurity includes marginal (limiting food selection or worrying about running out of food); moderate (compromising on food quality and/or quantity); or severe (reducing food consumption or missing meals) food insecurity.

Calculation

$$\frac{\text{Weighted total number of marginally, moderately and severely food insecure adults age 25+}}{\text{Weighted total population age 25+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for adults (age 25+):

- Unadjusted (i.e., crude) estimates were calculated for individual food insecurity (marginal, moderate and severe combined), by age group (25–29, 30–44, 45–64 and 65+) for 2012–2014 combined.
- Age-standardized estimates were calculated for individual food insecurity (marginal, moderate and severe combined) by sex for 2012–2014 combined.

Considerations

- This variable does not necessarily reflect the experience of all adult members in the household.

Technical specifications

Survey questions – CCHS food security module (adult status):

- This variable is based on 10 questions and describes the food security status of the adult members of a household.

Food insecurity status:

- Statistics Canada calculates food security status with individuals being classified as “food secure”, “moderately food insecure”, or “severely food insecure” based on an increasing number of affirmative responses. In addition to Statistics Canada’s derivation of food insecurity status, “marginal food insecurity” was also derived to identify individuals who would otherwise be classified as food secure, but may experience food insecurity.⁴

- Individual food insecurity status was based on the number of affirmative responses to the adult questions, where:
 - Food secure = 0 adult affirmed responses
 - Marginal food insecurity = 1 adult affirmed response
 - Moderate food insecurity = 2 to 5 adult affirmed responses
 - Severe food insecurity = 6 or more adult affirmed responses

Sampling weights:

- Analysis of individual food insecurity is based on the individual sampling weights from the CCHS. By using individual weights, this indicator reflects the number of adults living in food-insecure households among all adult members of a household.

Data sources

- Canadian Community Health Survey (CCHS) full survey waves 2012–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Healthy eating indicators: First Nations, Inuit and Métis population-specific data

Inadequate vegetable and fruit consumption in First Nations

Definition

The percentage of First Nations adults (age 18+) in Ontario who ate vegetables fewer than 2 times per day and fruit fewer than 2 times per day.

Calculation(s)

$$\frac{\text{Weighted number of First Nations adults age 18+ eating vegetables fewer than 2 times per day and fruit fewer than 2 times per day}}{\text{Weighted total population of First Nations adults age 18+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

- Age-standardized estimates were calculated for 2007–2013 combined for off-reserve First Nations adults and for non-Aboriginal adults and 2008/10 for on-reserve First Nations adults, by sex.

Considerations

- This indicator differs from the Ontario-level measures of vegetable and fruit consumption due to the phrasing of the dietary questions included in the First Nations Regional Health Survey, which asks respondents about their consumption of vegetables or fruit “once a day” or “several times a day.”
- This estimate deviates from the typical diet recommendation of consuming vegetables and fruit at least five times a day.
- The CCHS collects data regarding the frequency of vegetable and fruit consumption rather than the quantity consumed. As a result, no inferences can be made regarding the number of servings of vegetables and fruit consumed per day.

Technical specifications

Survey questions – CCHS fruit and vegetable consumption module:

- How often do you usually consume [fruits, green salad, tomato, potato, other vegetables]?

- How many times per day do you usually consume [fruit, green salad, tomato, potato, other vegetables]?
- Survey questions – RHS:
- On average, how often do you eat vegetables? Response: several times a day
- On average, how often do you eat fruits? Response: several times a day
- Note: Respondents had to select “several times a day” for both to be included

Data sources

- Canadian Community Health Survey (CCHS) 2007–2013. Statistics Canada. (off-reserve First Nations and non-Aboriginal data)
- First Nations Regional Health Survey (RHS) Phase 2 (2008/10). First Nations Information Governance Centre. (First Nations on-reserve data)

Inadequate vegetable and fruit consumption in Métis

Definition

The percentage of Métis adults (age 18+) in Ontario who consumed vegetables and fruit fewer than 5 times per day.

Calculation(s)

$$\frac{\text{Weighted number of Métis adults eating vegetables and fruits fewer than 5 times per day}}{\text{Weighted total population of Métis adults}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

- Age-standardized estimates were calculated for 2007–2012 combined for Métis adults and for non-Aboriginal adults in Ontario (age 18+), by sex, and for Métis adults and non-Aboriginal adults in Ontario (age 25+), by household income and education.

Considerations

- The CCHS collects data regarding the frequency of vegetable and fruit consumption rather than the quantity consumed. As a result, no inferences can be made regarding the number of servings of vegetables and fruit consumed per day.

Technical specifications

Survey questions – CCHS fruit and vegetable consumption module:

- Questions regarding consumption of: fruit juice; fruit (excluding fruit juice); green salad; potatoes (excluding French fries, fried potatoes or potato chips); carrots; and, other vegetables (excluding carrots, potatoes or salad).
- Fruit juice consumption was counted only once per day, if multiple servings were consumed in a day.

Data sources

- Canadian Community Health Survey (CCHS) 2007–2014. Statistics Canada. (Métis and non-Aboriginal data)

Food insecurity in First Nations

Definition

The percentage of First Nations adults (age 18+) in Ontario who report living in a household classified as moderately or severely food insecure.

Calculation

Moderately food insecure

$$\frac{\text{Weighted number of adults age 18+ living in a moderately food insecure household}}{\text{Weighted total population age 18+}} \times 100$$

Severely food insecure

$$\frac{\text{Weighted number of adults age 18+ living in a severely food insecure household}}{\text{Weighted total population age 18+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

- Estimates were calculated for 2007–2014 combined for off-reserve First Nations adults and for non-Aboriginal adults and 2008/10 for on-reserve First Nations adults.

Technical specifications

Survey questions – CCHS, RHS (indicator is directly comparable across data sources):

- “The food that we bought just didn’t last and we didn’t have the money to get more”. Was that statement often, sometimes or never true for your household in the past 12 months?
- “We couldn’t afford to eat balanced meals”. Was that statement often, sometimes, or never true for your household in the past 12 months?
- In the past 12 months, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?
- If you answered yes to skipping meals, how often did this happen – almost every month, some months but not every month, or in only 1 or 2 months in the past year?
- In the past 12 months, were you ever hungry but didn’t eat because there wasn’t enough money for food?
- In the past 12 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food?

Data sources

- Canadian Community Health Survey (CCHS) 2007-2014. Statistics Canada. (off-reserve First Nations and non-Aboriginal data)
- First Nations Regional Health Survey (RHS) Phase 2 (2008/10). First Nations Information Governance Centre. (First Nations on-reserve data)

Food insecurity in Métis

Definition

The percentage of Métis households in Ontario reporting food insecurity in the past 12 months (marginal, moderate or severe, combined).

Calculation(s)

$$\frac{\text{Weighted number of marginally, moderately and severely food insecure households}}{\text{Weighted total number of households}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

- Estimates were calculated for overall household food insecurity (marginal, moderate and severe combined) for 2007–2014 combined for Métis households and for non-Aboriginal households in Ontario.

Technical Specifications

Survey questions – Canadian Community Health Survey (CCHS) food security module (household food security status modified version):

- This variable is based on 10 questions and describes the food security status of all members of a household. Of the 18 questions, 10 focus on the experiences of adults, while eight focus on children in the household.

Food insecurity status:

- Statistics Canada calculates food security status with households being classified as “food secure”, “moderately food insecure”, or “severely food insecure” based on an increasing number of affirmative responses. In addition to Statistics Canada’s derivation of food insecurity status, “marginal food insecurity” was also derived to identify individuals who would otherwise be classified as food secure, but may experience food insecurity.⁴
- Household food insecurity status was based on the number of affirmative responses to the adult/children questions, where:
 - Food secure = 0 adult affirmed responses and 0 child affirmed responses
 - Marginal food insecurity = 1 adult affirmed response or 1 child affirmed response
 - Moderate food insecurity = 2 to 5 adult affirmed responses or 2 to 4 child affirmed responses
 - Severe food insecurity = 6 or more adult affirmed responses or 5 or more child affirmed responses

Sampling weights:

- Analysis of household food insecurity is based on the household sampling weights from the CCHS, rather than the individual sampling weights. By using household weights, this indicator reflects the number of people living in a food-insecure household.

Data Sources

- Canadian Community Health Survey 2007-2014. Statistics Canada. (Métis and non-Aboriginal data)

Food security in Inuit

Definition

The percentage of Inuit (age 16+) in Ontario who reported living in a household classified as food secure.

Calculation(s)

$$\frac{\text{Weighted number of people age 16+ who reported living in a household classified as experiencing high or marginal food security}}{\text{Weighted total number of people age 16+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

- Age-standardized estimates were calculated for high or marginal food security for 2012 for Inuit and for non-Aboriginal respondents.

Considerations

- The variables pertaining to food insecurity in the APS are based on fewer survey questions than those included in the CCHS.

Technical specifications

Survey questions – CCHS, APS (indicator is directly comparable across data sources):

- The food that [you/you and other household members] bought just didn't last and there wasn't any money to get more. Was that often true, sometimes true, or never true in the past 12 months?
- [You/you and other household members] couldn't afford to eat balanced means. In the past 12 months was that often true, sometimes true or never true?
- In the past 12 months, since last month, did [you/you and other household members] ever cut the size of your meals or skip meals because there wasn't money for food?
- How often did this [cutting food size or skipping meals] happen—almost every month, some months but not every month, or in only 1 or 2 months?
- In the past 12 months, did you [personally] ever eat less than you felt you should because there wasn't enough money to buy food?
- In the past 12 months, were you [personally] ever hungry but didn't eat because you couldn't afford enough food?

Data sources

- Canadian Community Health Survey (CCHS) 2012. Statistics Canada. (non-Aboriginal data)
- Aboriginal Peoples Survey (APS) 2012. Statistics Canada. (Inuit data)

Physical activity indicators: Ontario-level data

Percentage of adults or adolescents who are physically inactive

Definition

The percentage of adults (age 25+) or adolescents (ages 12–17) who report an average daily energy expenditure during leisure time physical activities in the past three months of less than 1.5 kcal/kg/day.

Calculation

Physical inactivity (adults)

$$\frac{\text{Weighted number of adults age 25+ whose average daily energy expenditure in leisure time physical activities over the past three months is less than 1.5 kcal/kg/day}}{\text{Weighted total population age 25+}} \times 100$$

Physical inactivity (adolescents)

$$\frac{\text{Weighted number of adolescents ages 12–17 whose average daily energy expenditure in leisure time physical activities over the past three months is less than 1.5 kcal/kg/day}}{\text{Weighted total population ages 12–17}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for adults (age 25+):

- Stratification variables: sex, household income, education, residence, geography, immigration status, cultural or racial group, and sexual orientation.
- Age-standardized estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of cultural or racial group and sexual orientation, where estimates were calculated for 2010–2014 combined.

Prevalence estimates for adolescents (ages 12–17):

- Stratification variables: sex, household income, household education, residence, and cultural or racial group.
- Unadjusted (i.e., crude) estimates were calculated for 2012–2014 combined for analysis by all socio-demographic variables, with the exception of cultural or racial group, where estimates were calculated for 2010–2014 combined.

Considerations

- For analysis by education for adults, individual education was used. For analysis of education for adolescents, household education was used.

Technical specifications

Survey questions – CCHS physical activity module:

- Based on the derived variable PACDPAI. This variable categorizes respondents as being "active", "moderately active", or "inactive" in their leisure time based on the total daily energy expenditure values (kcal/kg/day) calculated for PACDEE.

Data sources

Canadian Community Health Survey (CCHS) full survey waves 2010–2014. Statistics Canada, Ontario Share File, Ontario Ministry of Health and Long-Term Care.

Enrolment in health and physical activity

Definition

Percentage of students in Grades 10 to 12 enrolled in publicly funded secondary schools in Ontario who earned a credit in one or more health and physical education (HPE) courses in a given school year.

Calculation

$$\frac{\text{Number of students in grades 10–12 who earned a credit in } \geq 1 \text{ HPE courses}}{\text{Total number students in grades 10–12}} \times 100$$

Analysis

- Stratification variables: sex, and median income quintile of approximated school catchment area.
- Calculated for the 2013/2014 school year.

Notes

School catchment areas and student-level data regarding income were unavailable. Therefore, geospatial analyses were used to approximate a weighted catchment area for each of the secondary schools included in the analysis. Next, using dissemination areas (DAs), the median income quintile of the catchment area for each school was computed and student physical education enrollment was stratified by sex and median income quintile. School data from the Ministry of Education's Ontario School Information System (OnSIS) provided enrolment numbers. The 2011 Census was used to obtain the secondary school-aged population in the surrounding areas and PCCF+ version 6c provided dissemination area-level income data.

Phase 1: Assignment of dissemination areas to secondary schools

- The student headcount per school was calculated by summing the number of students from each school in grades 10, 11 and 12 who had earned a credit in one or more HPE courses, by sex.
- All 917 schools were geographically located using street address information. Only two percent (n=18) required manual matching.
- Location-allocation analyses were performed using the ArcGIS 10.4.1 with the Network Analyst extension to approximate school catchment areas. A maximum 30 minute drive-time constraint was used, along with the most recent census road network file. The school head counts were used to optimize the census area student-age populations assigned to each school. Location-allocation analyses were conducted separately for public secondary schools and Catholic secondary schools, since it is possible for the catchment areas to overlap. For further information about the location-allocation method, please see

<http://desktop.arcgis.com/en/arcmap/10.4/extensions/network-analyst/location-allocation.htm>. The student-age populations were input as a “weights” variable and school headcounts input as a “capacity” variable.

- Of the 917 schools included in the dataset, 889 (97%) had a catchment area defined using the location-allocation method. The remaining 28 schools were matched to the nearest DA.
- The number of DAs within a school’s catchment area varied depending on the school location and proximity to other schools, school head count, and surrounding school-age population.
- Data for HPE credits were provided for 896 schools for male students grades 10 to 12 and 899 schools for female students in grades 10 to 12. Overall, 23 schools were excluded due to missing data across grades 9 to 12.
- The location-allocation catchment areas were compared to selected 2017/18 school year boundary maps that were publicly available from school boards to confirm the appropriateness of the method.

Phase 2: Assignment of income quintiles to secondary schools

- Dissemination areas within school catchment areas as defined in Phase 1 were assigned an income quintile (i.e., the Quintile of Annual Income Per Person Equivalent (QAIPPE) variable from the PCCF+ version 6c data file) using R-3.4.2 for Windows Statistical Software to link the data files using the DA unique identifier.^A
- A median value for neighbourhood income quintile was then calculated for each school based on the neighbourhood income quintile all DAs assigned to the catchment area of that school.

Phase 3: Generation of income-stratified data

- The data set produced during Phase 2 was linked to the enrolment dataset using R-3.4.2 for Windows Statistical Software, for a total of 917 secondary schools.
- Schools were excluded when i) data regarding the completion of HPE credits were not reported for all grade levels (i.e., grades 10, 11 and 12) for both sexes (n=23), ii) data regarding the completion of HPE credits were suppressed, due to small counts (n=88), and iii) when school catchment area income was computed using only one DA (n=14). The number of exclusions did vary by grade and sex.
- Sensitivity analyses were conducted using less stringent exclusion criteria and results did not change substantially. Variants included:
 - Only excluding schools when enrollment data were not reported in the OnSIS dataset in all grades for each sex (n=23). Schools with fewer than ten students were assigned a median value of 5 for this analysis;
 - Excluding schools that were missing enrollment data in all grades (i.e. as above) and schools with suppressed student counts (less than 10 students for any grade and/or sex) (n=88).

^A The QAIPPE variable from PCCF+ version 6c is based on the 2006 Census of Population (Statistics Canada).

Phase 4: Calculation of the indicator and significance testing

- The mean (i.e., percentage of students who had earned a credit in one or more HPE courses), standard deviation and range were calculated for each income quintile.
- A weighted t-test (weighted by the number of schools in each income quintile) was used to determine if the likelihood of earning a credit in one or more HPE courses differed significantly between males and females.
- Linear regression analysis (weighted by the number of schools in each income quintile) was used to determine whether the probability of earning a credit in one or more HPE courses varied significantly with income level.

Considerations

Income

- For the purposes of this analysis, the median income of the school neighbourhood was used. Since income data were not available at the individual or household level, it was not possible to examine each student's household income relative to their enrolment in health and physical education courses, nor was it possible to examine the amount of variation in the household income of students from one school to the next.
- It is possible for the median income of a given DA to increase (to a higher income quintile) or decrease (to a lower income quintile) over time.

Enrolment data

- Includes public and publicly funded Roman Catholic secondary schools (English and French).
- Excludes private schools, publicly funded hospital and provincial schools, care, treatment and correctional facilities, and summer, night and adult continuing education day schools.
- HPE courses are referred to as Healthy Active Living Education (HALE) courses in the current Ontario Secondary School curriculum.
- Grade is defined as the latest grade in which the student was enrolled in the academic year.
- Data include only active full-time or part-time students in the academic year.
- Students are required to earn at least one HPE credit to receive their Ontario Secondary School Diploma. The majority of students earn this credit during Grade 9. Therefore, Grade 9 students were excluded from this analysis.
- To receive a course credit, a student must receive a final course grade of $\geq 50\%$.
- Some Grade 11- and 12-level HPE courses do not have a physical activity requirement because they are focused on health or physiology.
- Students can earn less than 1.0 credit in some HPE courses. Therefore, this indicator may underestimate the number of HPE courses taken by students.
- Students may choose to re-take a course (for example, if they want to improve their grade in a given course), and this would count towards the total number of HPE credits that a student receives.

- Not all schools offer all optional physical activity courses. Which courses, and the number of courses offered is decided independently by each school board and is influenced in part by historical demand.
- The Ministry of Education does not collect information specifically regarding which HPE courses are offered by each school. The number and type of HPE courses offered by a school may influence the decision of students to enroll in HPE courses. Additionally, it is possible that a school may decide not to offer a given HPE course due to lack of interest/enrolment, however these data are not captured in OnSIS.

Geospatial analysis

- DAs are the smallest geographic area for which census data are disseminated; the average population of a DA is approximately 700 people.
- The location-allocation method is optimized to capture students by census area. It is assumed that students within the catchment areas used for analysis attend the school they reside closest to, although this is not the case for every student, since students may elect to attend a secondary school outside of the catchment area used for analysis. This limitation may be particularly relevant for Catholic schools. As such, the location-allocation analysis was conducted separately for public and catholic schools.
- Using the location-allocation method, DAs are assigned to schools based on population size and school capacity; therefore not all DAs are assigned to the school they are nearest to, and not all DAs in Ontario were allocated to a school.

Technical specifications

- The secondary HPE curriculum comprises four physical activity courses, one in each of Grades 9 through 12, and three specialized destination courses in Grades 11 and 12.
 - *Healthy Active Living Education (HALE) courses include:*
 - HALE, Grade 9, Open (PPL10)
 - HALE, Grade 10, Open (PPL20)
 - HALE, Grade 11, Open (PPL30)
 - HALE, Grade 12, Open (PPL40)
 - *The possible areas of focus for a HALE course include:*
 - Healthy Living and Personal and Fitness Activities (PAF)
 - Healthy Living and Large-Group Activities (PAL)
 - Healthy Living and Individual and Small-Group Activities (PAI)
 - Healthy Living and Aquatic Activities (PAQ)
 - Healthy Living and Rhythm and Movement Activities (PAR)
 - Healthy Living and Outdoor Activities (PAD)
 - *Specialized destination courses include:*
 - Health for Life, Grade 11 (PPZ30), a college preparation course
 - Introductory Kinesiology, Grade 12 (PSK4U), a university preparation course

- Recreation and Healthy Active Living Leadership, Grade 12 (PLF4M), a university/college preparation course
- Course codes and descriptions for HPE courses may change from one school year to the next.

Data sources

- Enrolment data as reported by schools in the Ontario School Information System (OnSIS), (2013/2014). Ministry of Education.
- Cartographic boundary file. 2011 Census of Population. Statistics Canada.
- Postal Code Conversion File (PCCF+) Version 6C. (2015). Statistics Canada.
- Census Road Network File (2016). Statistics Canada.

Physical activity indicators: First Nations, Inuit and Métis population-specific data

Physical inactivity in First Nations and Métis

Definition

The percentage of First Nations and Métis adults (age 18+) who report an average daily energy expenditure during leisure time physical activities of less than 1.5 kcal/kg/day.

Calculation

$$\frac{\text{Weighted number of adults age 18+ whose average daily energy expenditure in leisure time physical activities is less than 1.5 kcal/kg/day}}{\text{Weighted total population age 18+}} \times 100$$

All calculations exclude respondents in the non-response categories (refusal, don't know, and not stated) for required questions.

Analysis

Prevalence estimates for on- and off-reserve First Nations adults (age 18+):

- Age-standardized estimates were calculated for 2007–2013 for off-reserve First Nations adults and for non-Aboriginal adults in Ontario, by sex.
- Age-standardized estimates were calculated for 2008/10 for on-reserve First Nations adults in Ontario, by sex.

Prevalence estimates for Métis adults (age 18+):

- Age-standardized estimates were calculated for 2007–2014 for Métis adults and for non-Aboriginal adults in Ontario, by sex.

Considerations

- The First Nations Regional Health Survey questions are not specific to leisure time physical activities, and may therefore include physical activity completed during other activities.

Technical specifications

Survey questions – CCHS physical activity module (Métis, off-reserve First Nations, non-Aboriginal):

- In the past three months did you do any physical activity for leisure?
- What was the activity?

- In the past three months, how many times did you participate in the activity?
- About how much time did you spend on each occasion?

Survey questions - First Nations Regional Health Survey (on-reserve First Nations)

- In the past 12 months, have you participated in the following activities? [respondents are provided with a list of activities to choose from]
- In the past 12 months, how many times did you participate in the activity?
- How much time do you generally spend going the activity in the average session?

Data sources

- Canadian Community Health Survey (CCHS) 2007-2014. Statistics Canada. (off-reserve First Nations and non-Aboriginal data)
- First Nations Regional Health Survey (RHS) Phase 2 (2008/10). First Nations Information Governance Centre. (First Nations on-reserve data)

Summary measures of inequality

Summary measures of inequality are used to quantify the absolute or relative degree of inequality across categories of a given socio-demographic factor. Absolute summary measures (e.g., absolute difference, population impact number) are simple arithmetic differences between the estimate for a given group (e.g., income quintile 1) and the estimate for a specified reference group (e.g., income quintile 5). Relative summary measures (e.g., disparity rate ratio, potential rate reduction) express the difference between estimates in terms of a chosen reference group. Summary measures can examine different aspects of inequality across a given socio-demographic factor; therefore, it is often useful to calculate multiple summary measures for each indicator.

Summary measures were calculated for *policy and program indicators* that were based on Ontario-level data. At least one absolute and one relative measure were calculated for each indicator. Summary measures were selected based on their appropriateness (for the socio-demographic variable of interest), feasibility (of analysis), and ease of interpretation by the reader.

Absolute difference (AD)

Definition

The absolute difference (AD) examines the difference in estimates between two sub-groups. For example, based on the reported AD value in Table 1 (below), the prevalence of second-hand smoke exposure in vehicles for adults in the lowest income quintile was 2.7 % higher than the prevalence for adults in the highest income quintile. The AD is significant if the confidence interval does not include 0.

Calculation

$$AD = R_1 - R_5$$

$$SE_{\text{diff}} = \sqrt{SE_i^2 + SE_r^2}$$

$$RSE_{\text{diff}} = \sqrt{\frac{SE_i^2 + SE_r^2}{R_i - R_r}}$$

Disparity rate ratio (DRR)

Definition

The disparity rate ratio (DRR) compares the estimates between two sub-groups – typically, the least vulnerable sub-group to the most vulnerable sub-group – by calculating a ratio. For example, based on the reported DRR value in Table 1, adults in the lowest income quintile were 2.1 times more likely to report exposure to second-hand smoke in vehicles, compared to adults in the highest income group. The DRR is significant if the confidence interval does not include 1.

Calculation

$$DRR = \frac{R_1}{R_5}$$

$$SE_{DRR} = \sqrt{RSE_{diff}^2 + RSE_r^2}$$

Potential rate reduction (PRR)

Definition

The potential rate reduction (PRR), also referred to as the population attributable fraction (PAF), calculates the percent reduction that would be possible if all sub-groups had the same estimate as the best-performing sub-group for an undesirable health outcome. For example, based on the reported PRR value in Table 1, if all adults had the same exposure to second-hand smoke in vehicles as adults in the highest income group (i.e., the reference sub-group), the percentage of adults regularly exposed to second-hand smoke in vehicles could be reduced by 38 percent. The PRR was calculated only when the DRR was statistically significant. The PRR is significant if the confidence interval does not include 0.

Calculation

$$PRR = \frac{\sum_{i=1}^5 P_i \left(\frac{R_i}{R_5} - 1 \right)}{1 + \sum_{i=1}^5 P_i \left(\frac{R_i}{R_5} - 1 \right)}$$

Where R_i is the rate of health outcome in the non-reference group, R_5 is the rate of the health outcome in the reference group (e.g., income quintile 5) and P_i is the proportion of the study population in the i th socioeconomic group (i.e. income quintile).

Population impact number (PIN)

Definition

The population impact number (PIN) represents the approximate number of individuals who could avoid an undesirable health outcome or exposure if all socio-demographic subgroups experienced the same estimate as the best-performing sub-group. For example, based on the reported PIN value in Table 1, it is estimated that there would be 109,845 fewer adults exposed to second-hand smoke in vehicles per year, if all adults had the same exposure to second-hand smoke in vehicles as adults in the highest income group. The PIN was calculated only when the DRR was statistically significant.

Calculation

$$\text{PIN} = \text{POPestd} * \text{PRR}$$

Where POPestd is the estimated total population size, age-standardized to the 2011 Canadian population.

Table 1: Percentage of non-smoking adults (age 25+) who were exposed to second-hand smoke in vehicles in the past month, by household income quintile, Ontario, 2012–2014 combined

Category	Estimate (%)	95% confidence interval (low, high)	Summary measures of inequality			
			Absolute difference (%) (95% CI)	Disparity rate ratio (%) (95% CI)	Potential rate reduction (%) (95% CI)	Population impact number
Quintile 1 (lowest)	5.3	(4.1, 6.5)	2.7 * (1.4, 4.1)	2.1 * (1.2, 2.9)	38.2 * (23.3, 50.5)	109,845
Quintile 2	4.2	(3.4, 4.9)				
Quintile 3	4.2	(3.4, 4.9)				
Quintile 4	4.1	(3.4, 4.8)				
Quintile 5 (highest)	2.6	(2.0, 3.1)				

Source: Canadian Community Health Survey, 2012–2014 (Statistics Canada)

Notes: 1. Estimates are adjusted to the age distribution of the 2011 Canadian population. 2. Second-hand smoke exposure in a vehicle: current non-smokers who reported being exposed to second-hand smoke in a private vehicle daily or almost every day. 3. **Bolded** estimates are significantly different from the rates in the reference category: quintile 5. 4. * Estimate is statistically significant (i.e., for the absolute difference or potential rate reduction, the confidence interval does not include 0; for the disparity rate ratio, the confidence interval does not include 1).

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