

First Nations Regional Longitudinal
Health Survey (RHS) 2002/03



*Results for Adults, Youth and
Children Living in First Nations
Communities*



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Community Acceptance

Ownership, control, access, and possession

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The First Nations Regional Longitudinal Health Survey (RHS) Cultural Framework

The First Nations Information Governance Committee determined that it was important to begin the development of a First Nations Cultural Framework for the First Nations Regional Longitudinal Health Survey (RHS) 2002/03. We will refer to it as the RHS Cultural Framework. The goal of the RHS Cultural Framework is to assist in achieving a culturally informed interpretation process that can be presented back to communities in ways that are usable and reinforce their ways of seeing, relating, knowing and being. A cultural framework will assist in providing a more accurate interpretation of the information shared by First Nations children, youth and adults. Simply stated, the RHS Cultural Framework encompasses the total health of the total person within the total environment.¹

From the beginning, First Nations people have been taught that we start with a focus on the people – by giving thanks for their caring, honesty, sharing, and strength. Therefore, in keeping with the RHS cultural framework, we wish to extend appreciation to all the First Nations people that participated and shared in this process, before we begin to discuss the organization of the report.

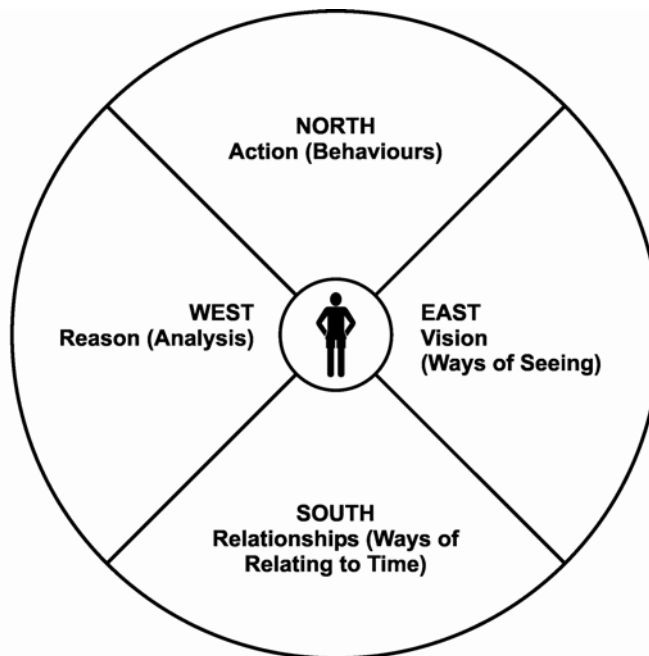
Where the model comes from

This section of the report is designed to help the reader to understand that there is an underlying science behind the cultural framework, and resulting organization of this report. This science has been handed down through generations of First Nations people as a cumulated body of knowledge and beliefs.

While it is recognized that Indigenous Knowledge is not a uniform concept across all First Nations in Canada, for most First Nations people there *is* a common belief in a connection with the natural world. For the purposes of this report and the RHS Cultural Framework, we represent the natural world with a circle.

When we begin this report at the centre of the cultural model (see Figure 1) with a focus on First Nations people, it is reflective of the reasons, rules and rationale that are incorporated in the underlying science of the cultural model. In accordance with these rules, we will then move from the Centre to the East, South, West, North, and East again. The meaning and content of each quadrant will be elaborated in subsequent sections of this chapter.

Figure 1. RHS Cultural Framework²



VISION (Ways of Seeing): Within an First Nations cultural paradigm, vision is considered the most fundamental of principles. Visioning First Nations' well-being involves examining the complete picture of health including, physical, mental, emotional and spiritual health issues. From an Indigenous Knowledge perspective, visioning will examine what is the ideal state of First Nations health and wellness (what was the standard in the past and what is the desirable/achievable in the future). In order to envision First Nations' health and wellness, it is imperative to establish a baseline of the extent and causes of the current situation. It is from that baseline that First Nation communities and stakeholders can move forward towards the ideal vision.

RELATIONSHIPS (Time/Ways Of Relating): Refers to the experiences that one encounters as a result of relationships built over time and examines how we relate to people. It provides an opportunity to gain an understanding of the attitudes and awareness that exist at this particular point of time, regarding the individual, community and national wellness issues.

REASON (Analysis/Reason): Also referred to as learned knowledge. It is where we become reflective, meditative and self-evaluative. It is in this direction, that the broader determinants of health are examined.

ACTION (Behaviours): Also referred to as movement and represents strength. This direction explores what has been done about previously identified barriers and how to nurture us as First Nations. This component is important in that it activates positive change to improve the program so that it better achieves the vision (expectations) of First Nations. Resulting in the healthy development of their children, families and communities.

It is important to note that the circular models presented in the RHS cultural framework are not medicine wheels. Medicine wheels are related to sacred teachings and understandings that are not discussed in the cultural framework, primarily because of the diversity of Indigenous Knowledge across First Nations. The models presented in this report are designed for use as interpretation tools and are sometimes referred to as "working wheels" or "four directional wheels". We are presenting working tools that can be used to understand the RHS cultural framework. It is within this context that

the circular models can be representative of the diverse belief systems across First Nations.

The First Nations Information Governance Committee vision for this report, simply put, is to reflect the vision of the First Nation communities. The vision of the First Nations people is to have cultural respect and understanding entrenched throughout the RHS process. This vision includes First Nations collecting the information, as well as interpreting and organizing the information from a First Nations cultural perspective.

The First Nations Information Governance Committee wants to make the information more relevant to the lives of First Nations people. We want to make this more than just another survey/research report on First Nations people. The First Nations Information Governance Committee is moving on to the next step and interpreting the information received from First Nations people from a First Nations perspective.

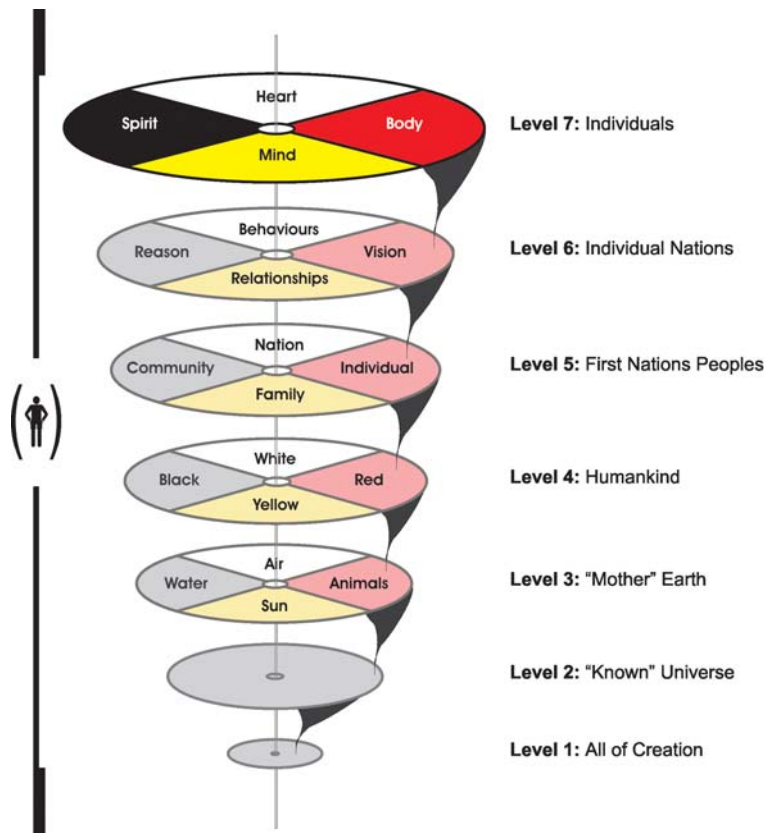
RHS Interpretative Framework:

This section of the report will introduce and explain the RHS Interpretative Framework. Jim Dumont, Traditional Teacher, prepared a research document to assist in developing a cultural interpretative framework for the First Nations Information Governance Committee. Dr. Mark S. Dockstator further elaborated on this model.

The interpretative framework begins with the understanding that First Nations people use the concept of *Wellness* while within a Eurocentric viewpoint is more commonly referred to as *Health*. While it is important to note that there are different philosophical understandings between the concepts of *Health* and *Wellness*, the philosophies are not necessarily mutually exclusive. The concepts are not absolutes or adversarial in nature...they are simply different.

Wellness is a very complex and multilayered philosophy, which we have tried to simplify through the following diagrams. However, it is important to articulate the complexity of this understanding in order to understand the significance of what questions to ask and how to interpret the information received by the First Nations people. Figure 2 attempts to illustrate, at the simplest level, a First Nation concept of wellness.

Figure 2



Level 1 represents all of Creation – which is infinite;

Level 2 represents the known universe (a human perspective) – which is only a small part of creation;

Level 3 represents one small part of the universe – Earth. Referred to as “Mother Earth” by First Nations people, it is comprised of animals, sun, water and air;

Level 4 represents “Humankind” which is one small part of the animals found on Mother; Earth. The four colours depicted in this level are not racial characterizations; rather they reflect different human philosophies or ways of thinking;

Level 5 illustrates one small part of humankind – “First Nations people” – and how we organize ourselves, as individual, family, community and nation;

Level 6 represents Indigenous intelligence and;

Level 7 represents a First Nations person, and how an individual is composed of body, mind, spirit and heart.

We pull out the cultural framework (like an accordion) in Figure 2 to demonstrate from this perspective of First Nations health, human beings are connected to the natural world, and thus to Creation through many different levels, or layers, of understanding. Each level represents only a small portion of the preceding one. All levels are interconnected.

This approach to health and wellness is based on BALANCE...of seeking balance, of achieving balance and of maintaining balance. To visualize this model of health, imagine each level as a wheel, with each of these wheels rotating on a common axis. If one wheel is out of balance, it will affect the balance of the other wheels and also the overall balance of the system. Thus, when we speak of First Nations health, we are referring to the BALANCE of this system.

The RHS Cultural Framework encompasses the total health of the total person within the total environment.³ This is a holistic and rather complex understanding of First Nation Wellness.

Figure 3

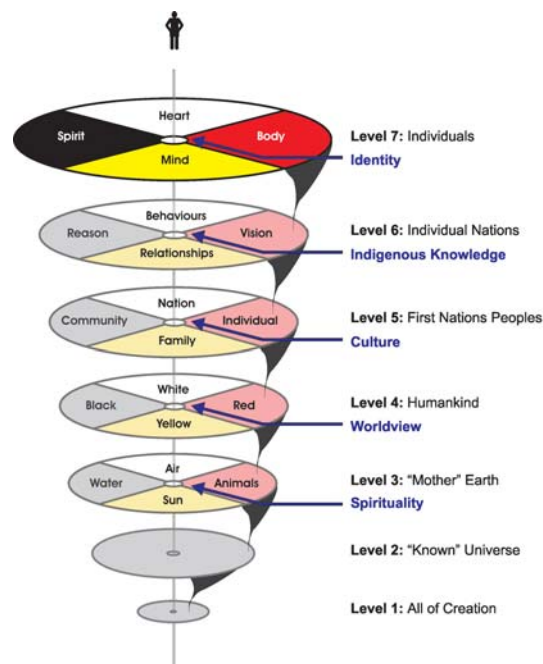


Figure 3 attempts to illustrate the dynamic and multilayer relationships associated with First Nations' Wellness.

Level 1 shows that most First Nations people have a common belief in their connection with Creation.

Level 2 represents how we as First Nations people, were given our spirituality from Creation and from the Creator, when the known universe was created. Spirituality formulates our belief systems (however they are expressed) and is our direct connection to Creation (both the Act of Creation and the Creator – however they may be expressed and named by the diverse First Nations cultures and societies). Spirituality is connected to Creation and that is why it is found in the centre of the circle and why it is of key importance to First Nations. (Note: Spirituality surrounds the connection to Creation – Level 1 – as represented by the straight line connecting level 1 to level 2).

Level 3 represents that when the Earth was created, as one small part of the universe, humans were created, and this is the stage at which we get our worldview. That is, this is how we as humans understand or make sense of our world. Our worldview connects us to Creation and is expressed in Spirituality.

Level 4 expresses how as different races of humankind were created, each with their different worldviews – each race is connected to Creation through their language. First Nations Peoples are connected to and express their worldview through their language, which is in turn connected to their spirituality.

Level 5 depicts how as First Nations People, we are connected to Creation through our culture, which is expressed through our language, which contains our worldview, which is an expression of our spirituality.

Level 6 shows as individuals, First Nations People are connected to Creation through the knowledge that we have – which is termed Indigenous Knowledge. These different knowledge systems (they are not the same for all First Nations) are an expression of our cultures, which are expressed in our languages, which are expressions of our worldviews and spirituality ... which all connect us to Creation.

Level 7 illustrates that as First Nations individuals we all develop our own identity, which is formed by that which we know (Indigenous knowledge), which in turn is connected to our culture, which is an expression of our worldview and spirituality. ...all of which connects us to Creation.

That is why when we speak of First Nation Wellness; we speak of Indigenous Knowledge, Culture, Language, Worldview and Spirituality as indicators of “health”. These indicators are “core” to an understanding of how we, as a People, keep ourselves “balanced” and therefore “healthy”. This reinforces the need for the RHS Cultural Framework to be used in interpreting the information collected by First Nations People.

How do we use the RHS Cultural Framework:

The issue identified by the First Nations Information Governance Committee is that an abundance of information have been collected in a way that respect First Nations research ethics and principles of Ownership, Control, Access and Protection of Indigenous Knowledge. The goal of the First Nations Information Governance Committee is to replace the Western Based Analytical Framework with one based on principles common to all First Nations principles. This technical report is just beginning to articulate a First Nations Culturally Appropriate Interpretation Model as a basis for analysis. This model is by no means complete, but represents a starting point that will be expanded and developed over time and with the building of relationships.

The model is important for explaining why we ask the questions we do in the RHS questionnaires. The RHS asks questions about language and culture in a “Health Survey”. Articulating the First Nations Wellness model begins to respond to the need for the questions by defining wellness. It illustrates that you can’t have an

indicator of wellness for First Nations People’s Health without also discussing culture, language, worldview, and spirituality.

The RHS is designed to be a longitudinal study and produce consistent data for First Nations across the country. Since the RHS data will be collected and interpreted by First Nations, the interpretations will be well informed by First Nations culture and settings, thus eliminating risks of misinterpretations. In so doing, the RHS will serve as a useful and realistic model for culturally appropriate, community-based research. In choosing a longitudinal study the objective is to develop baseline data during the initial phases. The baseline data then sets the foundation against which comparisons can be made in later years.

Upon the completion of the subsequent rounds of the RHS, analysis can take place to see what impacts different approaches to improving First Nations health have made on this population. For example, have education campaigns reduced the number of women who smoke during pregnancy? This is the true nature of a longitudinal study.

Figure 4

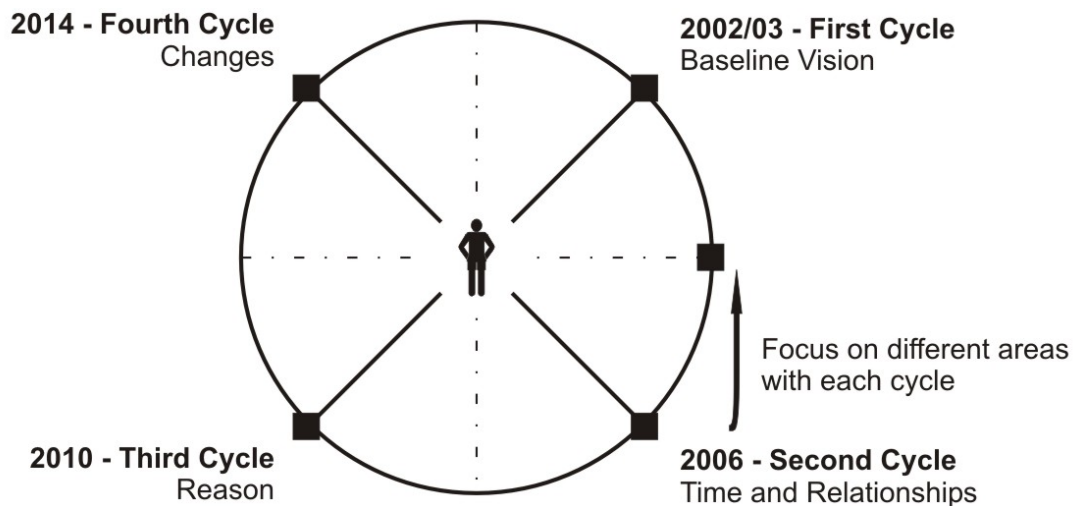


Figure 4 elaborates on the planned First Nations Regional Longitudinal Health Survey using the RHS Cultural Framework rather than a linear framework. Although each cycle will discuss all four quadrants: Vision; Time and Relationships; Reason; and Changes (Movement), each cycle will also place a particular emphasis on one quadrant of the model. For example, the emphasis for the 2002/03 RHS was on establishing baseline data and focus on the vision; that is, development of the cultural framework.

In the 2006 cycle of the RHS, the Cultural Based Framework will be used to explain the impact of time and relationships. The focus on the 3rd cycle of the RHS will be the reasons and rationales related to Health/Wellness issues and the 4th cycle will focus on changes—particularly over the 12-year period from the establishment of the baseline data.

It is important to remember that a longitudinal study is designed to measure change over time between the same groups of First Nations people (as opposed to comparisons with mainstream society). Over the past thirty years, extensive research has taken place about First Nations health and the relationship of First Nations health to the mainstream of Canada. They usually have a negative focussed, and rarely lead to movement or action. The intent of this longitudinal study is not to simply repeat other studies, but to document something unique – for example, the impact that health approaches within a holistic framework, are having on improving First Nations health and well-being.

Balance

The RHS Cultural Framework will assist in bringing balance to the previous research by also drawing out the positive changes related to First Nations Peoples Wellness. For example, a large proportion of First Nations who quit smoking did so because they became pregnant. This is a positive indicator of wellness, where women placed the wellness of their children first, and quit smoking not just during pregnancy but permanently.

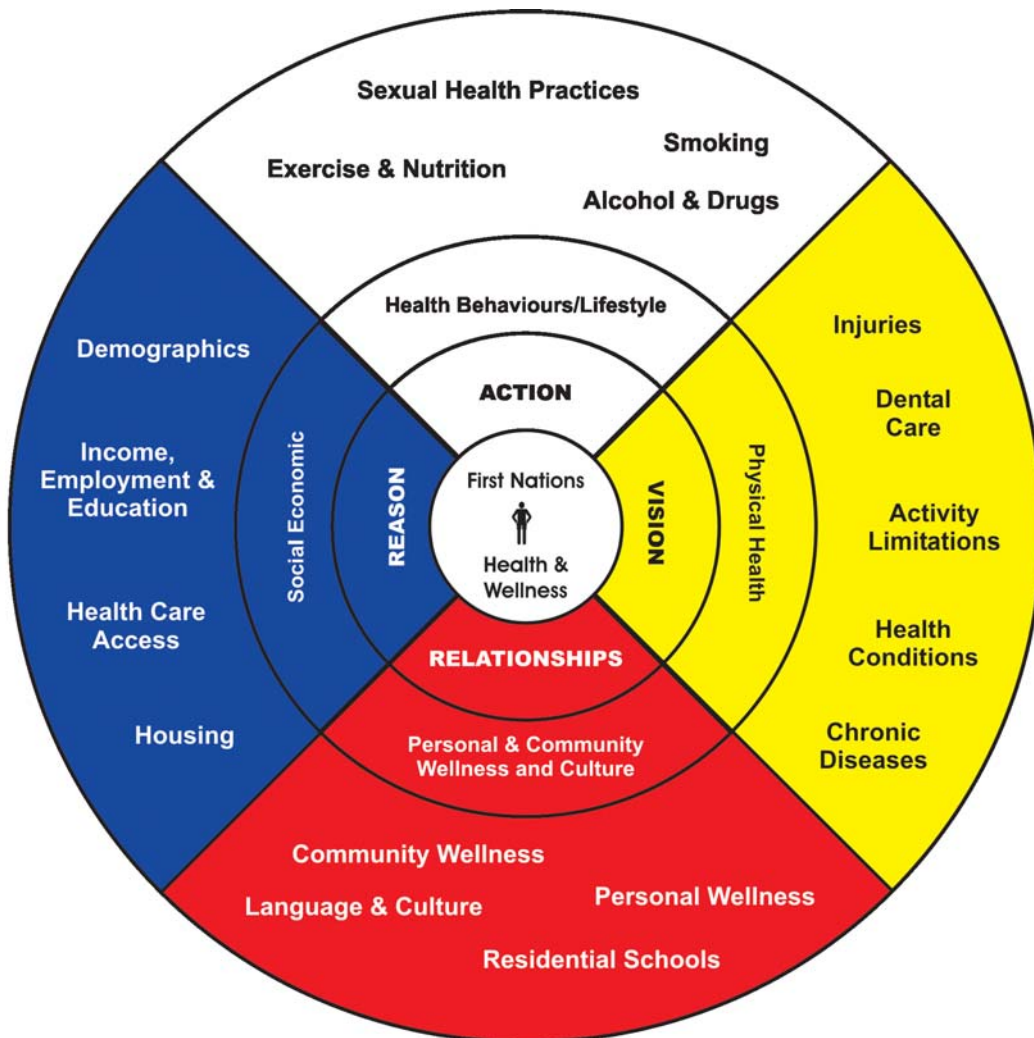
In addition to provide balance to the reporting by discussing positive changes, it is important for the information presented to be useful to the First Nations reading the report to facilitate positive changes in behaviours. The information needs to be presented in such a way as to clearly identify warning signs for possible wellness issues and what parents, for example, can do about it.

Time and relationship

In the context of First Nations issues, the key to understanding the future is to have a deep and detailed appreciation of the past. However, providing a singular interpretation of history is a challenging task when confronted by the complexity of the relationship between First Nations Peoples and Federal government relations and the negative impact it has had on the health and wellness of First Nations people. Policies implemented by the Federal government have had a negative impact on the spirituality, worldview, language, culture and Indigenous Knowledge of First Nations People.

Organization of the Report

The RHS 2002/03 collected vast amounts of information regarding the health of First Nation Peoples. This information has been summarized in 34 chapters of the technical report related to Adults, Children and Youth. If we simplify the framework, by compressing the seven levels of understanding into one and overlay all the questions asked in the RHS survey, then we can illustrate the information collected in the following way⁴:



VISION: Within an First Nations cultural paradigm, vision is considered the most fundamental of principles. Visioning First Nations' well-being involves examining the complete picture of health including, physical, mental, emotional and spiritual health issues. Research shows that First Nations people suffer from poor health. They do not always access mainstream (non-First Nations) social systems, such as health care services (i.e. hospitals and community health programs and services). It is impossible to cover all of the health conditions in this report. We have limited our analysis to address the most common health conditions and chronic diseases which include heart disease, hypertension, arthritis/rheumatism, asthma, and cancer. In addition, the report looks extensively at diabetes, a leading cause of death amongst the First Nations population as well as contributing to secondary health complications also leading to death. Injuries and accidents are explored in this quadrant. Activity limitations are examined in detail. It is important to understand the impact of disability on adults because many adults with disabilities are not fully included in all aspects of society. Finally, dental care is explored in this quadrant.

The following list guides the reader as to where to locate these indicators of health in the technical report.

Health Conditions and Chronic Diseases

- Chapter 4: Disability and Chronic Conditions (Adult Survey)
- Chapter 19: Disability and Chronic Conditions (Youth Survey)
- Chapter 30: Disability and Chronic Conditions (Child Survey)

Diabetes

- Chapter 5: Diabetes (Adult Survey)

Injuries

- Chapter 6: Injuries (Adults Survey)
- Chapter 20: Injuries (Youth Survey)
- Chapter 31: Injuries (Child Survey)

Activity Limitations

- Chapter 4: Disability and Chronic Conditions (Adult Survey)
- Chapter 19: Disability and Chronic Conditions (Youth Survey)
- Chapter 30: Disability and Chronic Conditions (Child Survey)

Dental Care

- Chapter 7: Access to Dental Care Needs (Adult Survey)
- Chapter 21: Dental Care and Treatment Needs (Youth Survey)
- Chapter 32: Dental Treatment Needs and Use of Dental Services (Child Survey)

RELATIONSHIPS: Refers to the experiences that one encounters as a result of relationships built over time and examines how we relate to people. The key categories within this paradigm include mental health, personal wellness and support among First Nations adults, youth and children. Emotional wellness was also examined to ascertain if there was any link to depression or suicide attempts and the data report no correlation. Another critically important category that is examined is the residential school impacts. Residential schools were often located in isolated areas and the children were allowed little or no contact with their families and communities. In addition, there was a regime of strict discipline and constant surveillance over every aspect of their lives including cultural expressions through language, dress, food, or beliefs. Suppression of culture was a mandate of the schools. Finally, the importance of language and culture cannot be overlooked. Language embodies all values, attitudes, beliefs and truths and consequently has historically played a significant role in the lives of First Nations Peoples.

The following list guides the reader as to where to locate these indicators of health in the technical report.

Personal Wellness

- Chapter 14: Mental Health, Wellness, and Personal Support (Adult Survey)
- Chapter 25: Emotional and Social Wellbeing (Youth Survey)
- Chapter 34: Emotional and Social Wellbeing (Child Survey)

Residential Schools

- Chapter 13: The Impacts of Residential Schools (Adult Survey)
- Chapter 24: The Impact of Parent and Grandparent Residential School Attendances (Youth Survey)
- Chapter 33: The Impact of Parent and Grandparent Residential School Attendances (Child Survey)

Languages and Culture

- Chapter 2: Language and Culture (Adults Survey)
- Chapter 27: Language, Culture, Headstart, and School (Child Survey)
- Chapter 31: Injuries (Child Survey)

Community Wellness

- Chapter 15: Community Wellness (Adult Survey)

REASON: Also referred to as learned knowledge, it is where we become reflective, meditative and self-evaluate. It is in this direction, that the broader determinants of health are examined, such as demographics, income, education, family structure, housing and living conditions as well as health care access. Demographics, Housing and Living Conditions are important determinants to consider when reviewing the status of First Nations health. Equally important are the level of Income and Education attained, both of which contribute to overall health. Finally, Access to Health Care is an important category as it reports on selected indicators of access to preventive primary health care measures, including respondents' rating of their access to health care in comparison to other Canadians, access to screening and preventive measures, barriers to accessing health care, and access to Non-Insured Health Benefits (NIHB).

The following list guides the reader as to where to locate these indicators of health in the technical report.

Demographics

- Chapter 1: Demographics, Education and Employment (Adult Survey)
- Chapter 16: Household Structure, Income, and Parental Education (Youth Survey)
- Chapter 26: Household Structure, Income, Parental Education (Child Survey)

Income, Employment and Education

- Chapter 1: Demographics, Education and Employment (Adult Survey)
- Chapter 17: School Education (Youth Survey)

Housing

- Chapter 3: First Nations Housing and Living Conditions (Adults Survey)

Healthcare Access

- Chapter 12: Healthcare (Adult Survey)

ACTION: Also referred to as movement and represents strength. This direction explores what has been done about previously identified barriers and how to nurture us as First Nations people. Non-Traditional Tobacco Use will describe some of the ways in how smokers and non-smokers are living their lives with their families and in their communities in relation to non-traditional tobacco use. Specifically, tobacco use during pregnancy, initiation, cessation, current and former use as well as consumption amounts are reviewed. The proportion of Alcohol Use by various demographic variables and community size is examined and of note is a consistent decrease in drinking with age. Frequency and type of Drug Use is also examined. The number of obese and morbidly obese respondents in all age categories is a concern for health issues as indicated in the Nutrition, Physical Activity and Body Mass Index data. Of particular concern is the difference between perception of good health and the Body Mass Index results.

The following list guides the reader as to where to locate these indicators of health in the technical report.

Smoking

- Chapter 9: Non-Traditional Use of Tobacco (Smoking) (Adult Survey)
- Chapter 22: Non-Traditional Use of Tobacco (Smoking), Alcohol, and Drug Use (Youth Survey)
- Chapter 28: Early Measures of Childhood Health: Birth weight, Maternal Smoking, and Breastfeeding (Child Survey)

Income, Employment and Education

- Chapter 1: Demographics, Education and Employment (Adult Survey)
- Chapter 17: School Education (Youth Survey)

Alcohol and Drugs

- Chapter 10: Alcohol and Drug Use (Adults Survey)
- Chapter 22: Non-Traditional Use of Tobacco (Smoking), Alcohol, and Drug Use (Youth Survey)

Exercise and Nutrition

- Chapter 8: Physical Activity, Body Mass Index, and Nutrition (Adult Survey)
- Chapter 18: Physical Activity, Body Mass Index, and Nutrition (Youth Survey)
- Chapter 29: Physical Activity, Body Mass Index, and Nutrition (Child Survey)

Sexual Health Practices

- Chapter 11: Sexual Health Practices (Adults Survey)
- Chapter 23: Sexual Health Practices (Youth Survey)

According to the RHS model of health developed for this report, we now return to the eastern direction and vision. Having completed a full circle of summarizing some of the information collected by the Survey, the next step will be to look into the future, to determine the next steps of the process. The next step in this research process is to revisit our vision, in light of the materials gathered and lessons learned, listen to the community and begin the process of improving the process for the next data gathering cycle, scheduled to begin in 2006.

¹ Ibid

² Dumont, Jim,

³ Ibid

⁴ We are using the FNC / NAHO model to organize the information – there are many other FN approaches that can be used to illustrate the information differently.

Process and Methods Summary

First Nations Regional Longitudinal Health Survey (RHS) 2002/03

Introduction

The First Nations Regional Longitudinal Health Survey (RHS) traces its origins back to 1995. Although initially proposed to fill data gaps, the project has evolved considerably.

Ten years later, in keeping with its mandate from the Assembly of First Nations' Chiefs Committee on Health, the RHS has disseminated results from two rounds of data collection and has emerged as the only national research initiative under complete First Nations control.

Results from the 1997 round were released in 1999. Based on the 2002/03 round, two major reports were completed in 2005: this one, containing 34 thematic chapters, and the culture-based "Peoples' Report".

This section includes a summary of the process and methods used in the 2002/03 survey and in the preparation of this report. More complete information is contained in the full "Report on Process and Methods." A quick overview is provided in Table 1 and a brief timeline is presented in Table 2.

Table 1. 2002/03 RHS at a glance

Title	First Nations Regional Longitudinal Health Survey
Acronym	FNRLHS or RHS
Mandate	Assembly of First Nations Chiefs Committee on Health
National Governance	First Nations Information Governance Committee
Regional Coordination	First Nations Regional Organizations
National Coordination	First Nations Centre, National Aboriginal Health Organization
Number of Regions	10 First Nations Regions (including all provinces and territories except Nunavut)
Target population	First Nations communities across Canada
Longitudinal cohort	Second round for Nova Scotia; First round for all other regions
Sample design	Largely standardized
Sample size	22,602 surveys: 10,962 adults, 4,983 youth and 6,657 children
Communities	238 included
Length of National "Core" Components	84 minutes median interview time (for adult, youth and child surveys combined)
Region-specific questions	Additional modules of varying length in 7 of 10 regions

Table 2. RHS timeline

1994	Three Canadian longitudinal surveys launched, excluding First Nations and Inuit communities
First round of the survey	
1995	Funding for first round by Health Canada. Indian Affairs and Human Resources Development Canada decline.
1996	Mandate from Assembly of First Nations
1996	Direct First Nations and Inuit control established
1996	Development of instruments and methods
1997	Data collection in 9 regions: 14,008 surveys (9,870 adults, 4,138 children)
1997	Code of Research Ethics adopted
1998	Ownership, Control, and Access (OCA) principles first articulated
1999	Final report based on 1997 survey released
Second (current) round of the survey	
2000/01	Proposals and long-term plans submitted for funding and potential Treasury Board submission
2000/02	Development of instruments and methods for 1 st wave of longitudinal survey
2002	Coordination transferred to the First Nations Centre (NAHO)
2002/03	Data collection in 10 First Nations regions: 22,602 surveys (10,962 adults; 4,983 youth; 6,657 children)
2004	Data processing
2004	Preliminary results released
2005	Major reports released

Coordination and governance

The RHS is coordinated and governed by First Nations through their regional and national organizations and representatives. As of 2005, the survey partners were:

National

- Assembly of First Nations (Coordination of First Nations Information Governance Committee)
- First Nations Centre of the National Aboriginal Health Organization (National coordination and data stewardship)

Regional coordination and data stewardship

- Union of Nova Scotia Indians
- Union of New Brunswick Indians
- First Nations of Quebec and Labrador Health and Social Services Commission
- Chiefs of Ontario

- Assembly of Manitoba Chiefs
- Federation of Saskatchewan Indian Nations
- First Nations Adult and Higher Education Consortium (Alberta)
- First Nations Chiefs' Health Committee (B.C.)
- Dene National Office
- Council of Yukon First Nations

The RHS National Steering Committee has been renamed the First Nations Information Governance Committee (FNIGC). It is made up of members of the partner organizations and is a standing committee of the Chiefs Committee on Health at the Assembly of First Nations. Within most regions a research advisory committee or similar entity parallels the work of the FNIGC, including oversight and direction of the survey.

2002/03 Survey Instruments and Methods

Data collection was conducted between August 2002 and November 2003 in First Nations communities across Canada. A total of 22,602 surveys were administered. Three age-specific questionnaires were completed for:

- 10,962 adults, 18 years of age and over (by interview);
- 4,983 youth, 12 to 17 years of age (self-administered); and
- 6,657 children, 0 to 11 years of age (the parent or guardian responded).

As shown below, the surveys addressed a range of priority First Nations issues related to health.

Adult Survey (> 18 years old)

- Age, gender, marital status, community
- Languages—comprehension, use
- Education
- Employment
- Income and sources
- Household—composition, income
- Housing—condition, crowding, mold
- Water quality
- Services (phone, water, smoke detector, internet etc.)
- Height, weight
- 28 health conditions—duration, treatment, effects
- Diabetes—type, treatment, effects
- Physical injuries
- Dental care
- Disabilities, limitations
- Physical activity
- Food and nutrition
- Home care—use, need
- Health services—use, access, NIHB
- Traditional medicines, healers
- Smoking, alcohol, drugs—use, cessation, treatment

- HIV/AIDS, STD's and sexuality
- Pregnancy, fertility
- Preventative health practices
- Wellness, supports & mental health
- Suicidal ideation and attempts
- Residential schools—impacts
- Community wellness
- Culture, spirituality, religion
- Community development

Youth Survey (12-17 years old)

- Age, gender, household/family composition
- Education—level, performance, personal goals
- Language—comprehension, use
- Food and nutrition
- Activities—physical, social
- Height, weight, satisfaction with
- Diabetes—type, treatment
- 19 health conditions—duration, treatment, effects
- Injuries
- Dental care
- Smoking, alcohol, drugs

- Sexuality
- Preventative health practices
- Personal wellness, supports & mental health
- Suicidal ideation, attempts
- After school activities
- Traditional culture—importance, learning
- Residential school (parents, grandparents)

Child Survey (0-11 years old)

- Age, gender, household/family composition
- Parental education
- Education—level, performance, Head Start
- Height, weight—at birth, current
- Breastfeeding history

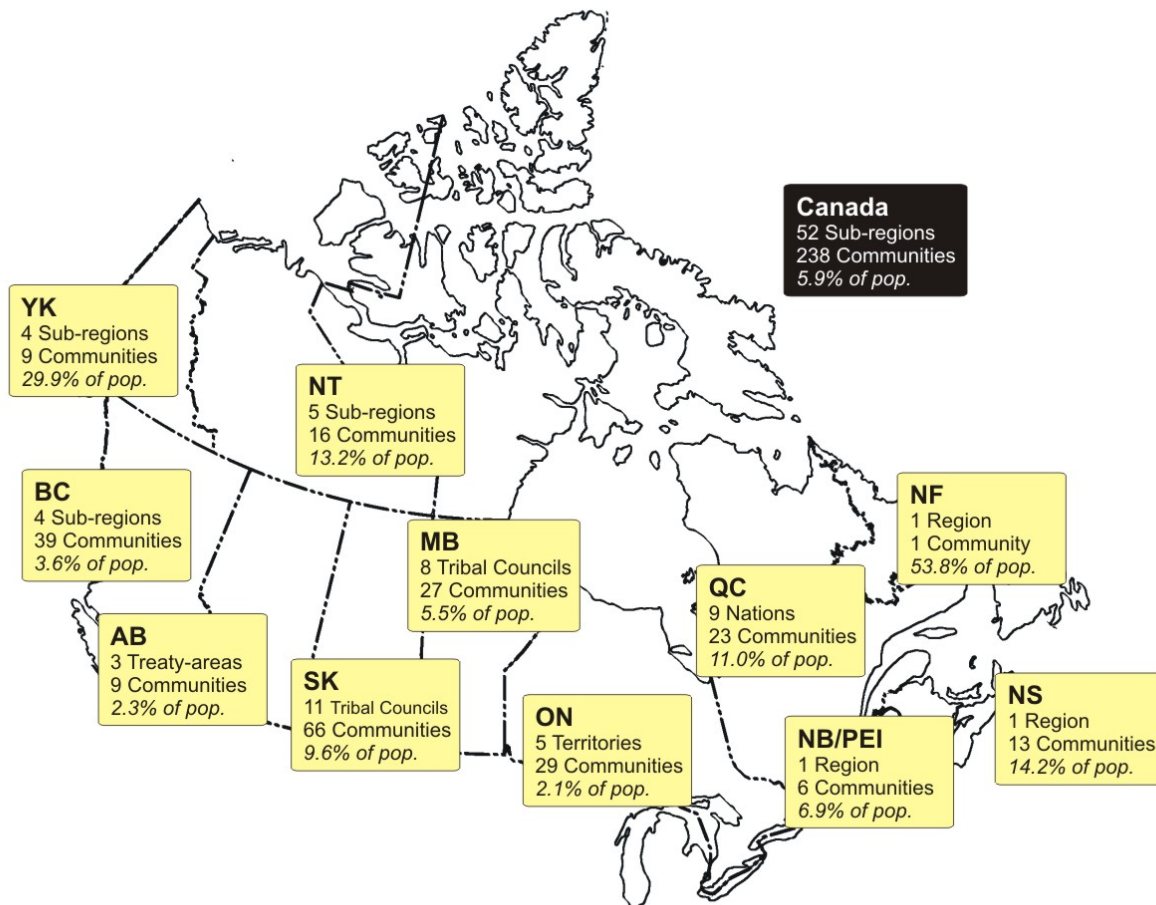
- Smoking, second hand smoke exposure—pre & post natal
- Language—comprehension, use, interest
- Food and nutrition
- Activities—physical, social, after school
- 19 health conditions—duration, treatment, effects
- Injuries
- Disabilities, limitations
- Health service access—NIHB
- Dental health, baby bottle tooth decay
- Traditional culture—importance, learning
- Emotional & social well-being
- Childcare -babysitting
- Residential school (parents, grandparents)

In 7 of 10 regions, questionnaire modules addressing regional priorities were also administered, immediately following the national questions.

First Nations fieldworkers were trained to administer the surveys within their communities, usually in the respondent's home. The fieldworkers used customized software on laptop computers to collect 90.2% of the surveys. The remainder were completed on paper and subsequently data-entered. Surveys were encrypted and transferred by phone lines from the communities to secure, dedicated servers.

The 2002/03 survey sample was designed to represent the First Nations population living in First Nations communities in all provinces and territories except Nunavut. Overall, 238 communities were included and 5.9% of the target population was surveyed. The sampling rate was 4.9%; among youth, 10.0% and for children, 6.0%. The higher proportions of children and youth allow for statistical precision similar to the level possible with the adult data. The regional breakdown is shown in Figure 1.

Figure 1. Number of sub-regions and communities and proportion of on-reserve* Residents sampled, by region



*Figures show the proportion of all First Nations living in First Nations communities that were included in the sample.

Communities of different size categories were selected within each First Nations 'sub-region (see Table 3) to provide representative samples at the regional and national levels. Locally, individuals were randomly selected within age/gender groups. In 199 communities locally updated band membership lists were used. In 39 communities a household-based frame was adopted.

Table 3. First Nations “sub-regions”**Yukon***4 Regions*

Dakh-Ka

Independents

Northern Tuchtone

Southern Tuchtone

Northwest Territories*5 Regions*

Akaitcho

Deh Cho

Dogrib

Gwitch'in

Sahtu

British Columbia*4 Geographic Regions*

Coastal Region

Northern Interior

Southern Interior

Vancouver Island

Alberta*3 Treaty Areas*

Treaty 6 (Central)

Treaty 7 (South)

Treaty 8 (North)

Saskatchewan*11 Tribal Councils*

Agency Chiefs

Battlefords File Hills Qu'Appelle

Meadow Lake

Prince Albert Grand Council

Saskatoon

Touchwood Agency

Yorkton

Peter Ballantyne

Lac LaRonge

Independents

Ontario*5 Territorial Organizations*

Association of Iroquois and Allied Indians

Union of Ontario Indians

Nishnawbe-Aski Nation

Independent First Nations

Manitoba*8 Tribal Councils*

Swampy Cree

South East

West Region

Dakota Ojibway

Island Lake

Interlake

Keewatin

North and South Independents

Quebec*8 Nations*

Abenakis

Algonquins

Attikameks

Hurons

Micmacs

Mohawks

Montagnais

Naskapis

(James Bay Cree did not participate)

Newfoundland*1 Region*

Labrador Innu did not participate

Nova Scotia*1 Region***New Brunswick and Prince Edward Island***1 Region**Preparation of the thematic chapters for this report*

The report was designed to provide a high-level overview of national results for all subject areas from the three surveys. A proposal-based competition was used to select contributors to help develop 36 chapters (subsequently reduced to 34).

The competition's review panel selected contributors, usually with supporting teams, to draft between one and three chapters each. The majority of those selected were First Nations individuals.

An orientation session, detailed writing guidelines and on-going communication helped to ensure standardization of chapters in terms of: type of content, organization/sections, length, format, integration of the cultural framework,

reporting of statistics, presentation of graphs and tables, and so on. The following statistical specifications / standards were established:

- To protect confidentiality and decrease the risk of misinterpretation, statistics based on cell sizes with less than 30 records were suppressed (and sometimes identified with a dash within tables);
- Confidence intervals were reported for figures with a coefficient of variation greater than 33%;
- No statement indicating or implying a difference between groups or categories was included unless the difference was statistically significant. Non-significant differences were identified, usually with “NS”. Differences were considered significant if the confidence intervals of the results for the groups/categories compared did not overlap at the 95% confidence level (after Bonferroni adjustmentⁱ).

In five of the 34 chapters, different thresholds for significance were used. The standards adopted are noted within each of these chapters.

Non-overlap in confidence intervals was adopted instead of other methods of assessing statistical difference (e.g. chi square test) because it permits specific group-by-group comparisons. For example, this makes it possible to report that adults under 30 years old are more likely to have a certain characteristic but that the other age groups (30-39, 40-49, 50-59 and 60+) were not statistically different from each other in terms of that characteristic.

Differences between RHS results and those for other populations (e.g. Canadians overall) were not assessed for statistical significance, as confidence intervals were not available for the other populations. Relative statements about differences between First Nations and other populations should be interpreted cautiously, particularly when the estimates are close or the groups are small.

Most RHS analyses were based on two-way and three-way cross-tabulations. Age-adjustment and other types of complex analyses and modeling were also used, but multivariate analyses were not developed as the report aims to disseminate only high level statistics.ⁱⁱ

To enhance quality, there was a multi-stage review and revision process. This process consists of the following steps:

1. First draft
2. 2 peer reviews
3. Draft 2
4. External technical review
5. Internal technical review and update
6. Internal copy-edit
7. External copy-edit

Although all RHS-derived results and statistical statements were verified as part of the technical review, it was the responsibility of individual authors to verify results and statements based on sources other than the RHS. Additional verification by the First Nations Centre was not practical given the range and number of references, including some that would not have been accessible in a timely manner.

SPSS version 13 was used for most of the analysis. Estimates were weighted and confidence intervals were calculated using the SPSS Complex Samples module.ⁱⁱⁱ The module goes beyond the simple-random-sampling assumptions of standard statistical analyses, producing estimates based on the relevant details of the sample’s design. The weights and specifications of the RHS’s complex stratified sample were programmed into the module to enhance the validity of results.

In addition to statistical conventions for reporting and interpreting data, a First Nations cultural framework was developed to help guide the interpretation of statistical results and organize the findings. The framework, described in the introduction, is applied more consistently within the “Peoples’ Report”. Finally, First Nations review and the guidance of the First Nations Information Governance Committee helped to ensure that the meaning brought to the numbers was based on community-based knowledge and expertise.

ⁱ The Bonferroni adjustment or correction is a more conservative method of assessing statistical significance, particularly for analyses with many cells/groups.

ⁱⁱ In future, more focused reports will include multivariate analyses.

ⁱⁱⁱ http://www.spss.com/complex_samples/brochures.htm

The Health of First Nations Adults



Chapter 1

Demographics, Education, Employment, and Education

Abstract

Evidence in this study supports previous findings that adults in First Nations communities have less education, higher unemployment rates and lower incomes than other First Nations adults (not living in communities), and other Canadian adults. There is evidence that if educational attainment increased then employment rates would also increase. Nonetheless, in comparison with the non-First Nations adult population, earnings of First Nations adults were lower even when education levels were equivalent. The apparent 'glass ceiling' on First Nations incomes exists despite educational attainment of individuals. These types of demonstrative patterns become even more important to consider and address with the increasing number of young people in First Nations communities.

Introduction

This chapter lays part of the foundation for interpreting the health of First Nations adults living in First Nations communities by describing their personal and household resources. Some of these situation descriptors have been shown to be influential determinants of health. The enquiry is intended to describe the extent to which these adults have resources to participate fully in their families, communities, traditional culture and Canadian society's economic structure. Given the connections between these types of resources and health/wellness, these kind of explanations are important.

As with others in this volume, this chapter is written primarily from the First Nations perspective. Early on in research process Jim Dumont gave a presentation to authors in which he began to articulate a First Nations cultural framework for the RHS. Dumont's main starting points included considering the total health of the total person in the total environment.

If we try to understand and sensibly appreciate Native myth and legend we must be willing, first of all, to accept that there is involved here a very special way of 'seeing the world'. Secondly, and a necessary further step, we must make an attempt to 'participate' in this way of seeing.ⁱ

This chapter focuses mainly on, population projections, personal characteristicsⁱ, personal and household incomes and community characteristicsⁱⁱ of First Nations adults in First Nations communities.

Results and Discussion

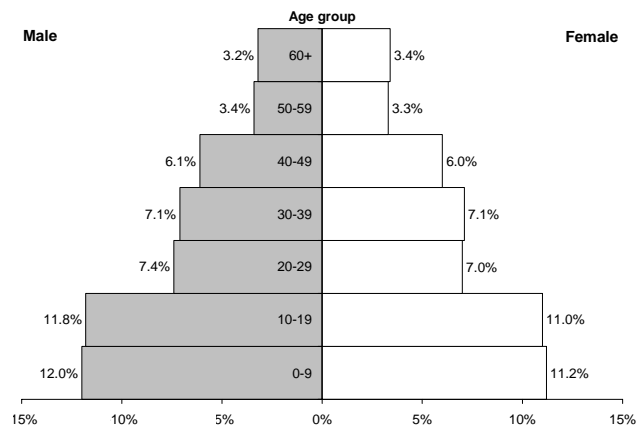
Population projections

Population projections are a very important part of understanding the present and future resources of First Nations communities. The current patterns and the projections that they give rise to suggest a growing demand for services—social, educational and health—in First Nations communities. They also point to the impact of Bill C-31 on the future diminishing resources of the communities as their populations grow. The following discussion examines the current situation and compares it to Statistics Canada estimates of First Nations people living outside First Nations communities, and the Canadian population as a whole.

The RHS data on population size reflects a growing population with a large proportion of the population younger

than 20 years old. Men were 50.9%ⁱⁱⁱ of the adult population and women were 49.1%.

Figure 1. Age pyramid based on population estimates from RHS surveys^{iv}



According to the Indian Registry, the 2001 First Nations population size in Canada was 690,101². Of those, 57.5 percent or 396,688 people lived in First Nations communities^v (and on Crown Land), while 42.5 percent lived elsewhere outside First Nations communities.

Given that this RHS sampling strategy and weighting scheme took into account age, gender, community size and sub-region of the population in First Nations communities, the population pyramid of the sample should resemble the Indian Registry statistics of First Nations individuals living in First Nations communities.

The age distribution shown in Figure 1, shows a significant increase in the proportion of children and youth compared to adults. This has powerful implications for the education system and the supply of health care for young children and youth in the near future (and subsequently, for adults and seniors). In contrast, the age distributions of First Nations people who do not reside in First Nations communities (Figure 2) shows less contrast between the proportion of children and youth/adults in the past 20 years. A distribution for the Canadian population (Figure 3) shows a similar pattern.

The population of First Nations communities has been increasing for many years, but there has been a more accelerated increase in the past ten years.³ It is a common mistake to attribute this to increased levels of fertility or to migration back to First Nations communities. First Nations women have more children than other Canadian women, but

ⁱ Personal characteristics explored include gender, age, educational attainment, marital status and employment sources and status.

ⁱⁱ Community characteristics that might affect resources and/or extent of exposure to Western culture are community size and extent of the community's geographic isolation.

ⁱⁱⁱ To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs.

^{iv} It was necessary to estimate the number of males and females who were ages 18 and 19 in order to use the same age categories as the other age pyramids in this chapter.

^v The term 'First Nations communities' is used in this chapter instead of 'on-reserve' except where part of a citation.

^{vi} The exclusion of these two groups decreased the target number of communities by 10 and the population by 3.3 percent relative to the Indian Register overall.

they would have to have 10 children each to account for the growth in the 1980s and 1990s.⁴ Migration back to First Nations communities is not a viable explanation because there was a net increase in both populations at the same time.⁵ As for international migration, *the contribution ... may be considered nil.*⁶

Figure 2. Age pyramid (from INAC, Registered Indian population off reserve, Dec. 31, 2001)⁷

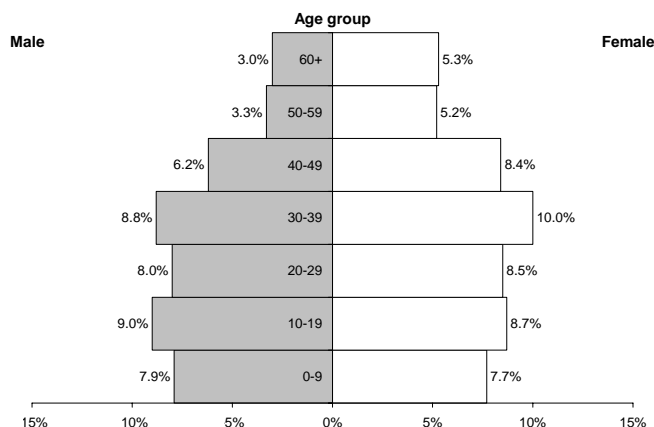
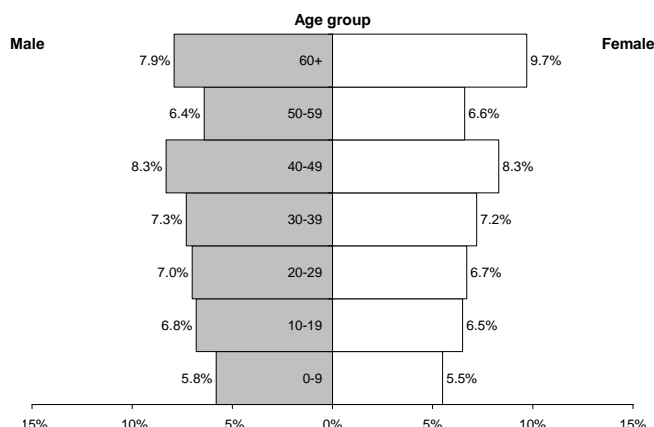


Figure 3. Age pyramid (from StatsCan, Canadian population, 2001)



In actuality, ethnic mobility explains much of the increase in two ways:

- the choice of ethnic identity for newborns
- the change to self-reporting as First Nations during one's lifetime.

Ethnic mobility has been attributed to increased pride in heritage as a result of positive public attention paid to Aboriginal concerns and to the motivation to be registered that came from Bill C-31. *At the end of 2000 (December 31), a total of 114,512 individuals had (re)acquired registration*¹²

Population projections depend on what assumptions are made about the future.¹³ Unless the political forces are modified, the most likely scenario is that Bill C-31 definitions of who is a Registered Indian will prevail. Given the current pattern of

mixed marriages and unstated paternity, under Bill C-31, it is predicted that it could eventually lead to a dramatic reduction in the size of the Registered Indian population.

With the above assumptions, it is projected that there will be an increase in the size of the First Nations populations for two generations, but that after that there will be a decline.¹⁴

*The number of survivors and descendants who do not qualify for registration is expected to increase from the current level of about 21,700 to nearly 400,000 within two generations. After three generations (year 2074), individuals who are not entitled to registration are projected to form the majority of the population.*¹⁵

Another contrast between the Canadian population and First Nations in 2001 is seen in the proportion of the population that was over 60 years of age. While this is due, in part, to the reasons cited above, it may also reflect the health status and death rates of First Nations adults.

From a sample of 10,962 adults, this chapter is generalizing to 223,928 adults, ages 18 and over, who lived in First Nations communities in Canada (except for the Quebec Cree and Labrador Innu).^{vi} The remaining findings in this chapter are generally limited to this sample of adults although clearly identified comparable statistics from studies of other populations are sometimes included.

Personal characteristics

Education

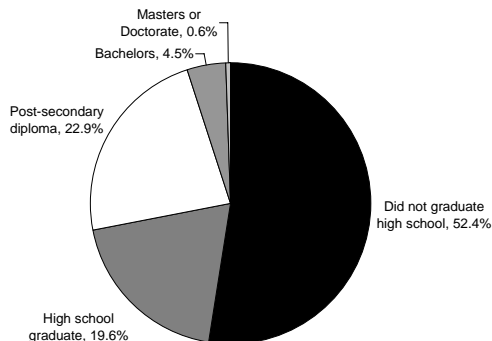
The following educational patterns should not be assumed to represent the highest potential lifetime educational attainment of the adults, especially the younger ones. It has been shown that many First Nations adults return to school for post-secondary education after a break of several years.¹⁶

About half of the adults in the survey had graduated from high school.^{vii} About half of those who had graduated from high school had gone on to obtain a diploma from a university, college, technical or vocational school. A minority had obtained a bachelor's or master's degree or doctorate.

Age ranges included in the comparative education statistics in Table 2 make it difficult, but not impossible, to compare the populations. While RHS statistics measured adulthood from age 18, the comparable age statistics from First Nations adults who did not reside in First Nations communities was 15 and older. The same age, 15+, was used for the statistics for the Canadian population as both sets came from the 2001 census.

^{vii} High school graduation could mean completion of Grade 11 through CEGEP (usually 2 years beyond Grade 11) in Quebec or Grades 12 or 13 in Ontario

^{viii} Comparisons between groups reported in this chapter are all significant unless "NS" – not significant – is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Figure 4. Education of adults in First Nations communities (n = 10,812)

There were no differences in the educational attainment patterns of men and women.^{viii} There were, however, differences by age as might be expected. Younger and older adults had highest rates of not completing high school. Adults over 60 had the highest rates of not completing high school. Adults in the 18–29 year age category had not yet attained the rates of completion of post-secondary education that adults had in the 30–59 age category. Given the pattern of intermittent schooling that many First Nations adults follow, it may be assumed that those in the youngest age category will close the gap. Adults ages 30–59 had higher rates of completing post-secondary diplomas and degrees.

Table 1. Age and education of Adults in First Nations communities (n = 10,812)

Age and education	Age group (years)		
	18-29	30-59	60+
< HS Grad	57.0%	46.1%	70.8%
Completion of post-secondary diplomas and degrees	15.4%	37.1%	19.3%

There is a large gap between the formal educational attainment of adults in First Nations communities and the Canadian population (Table 2). This is an issue which is getting attention in First Nations communities and in the federal and provincial governments. Education rates of First Nations adults not living in First Nations communities had a pattern that fell between the First Nations community average and the Canadian one. If the RHS adult statistics had included 15, 16 and 17 year olds, as the other two did, the comparative gaps would be even greater.

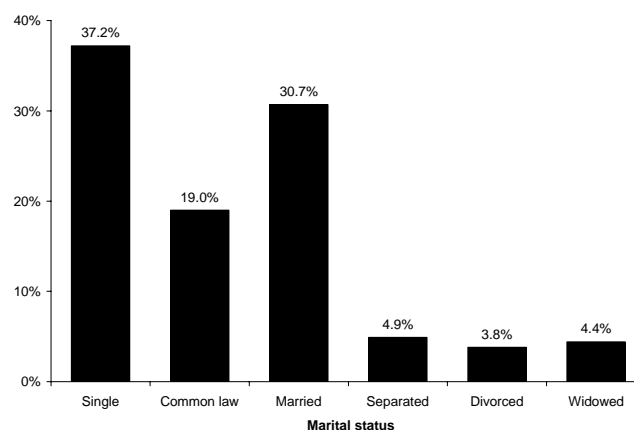
Table 2. Education of adults in First Nations communities compared to those First Nations not living in communities and the Canadian population

Highest level of formal schooling	RHS First Nations adults in First Nations communities, ages 18+ (n=10,812)	First Nations adults not living in First Nations communities, 2001, ages 15+ ¹⁷	Canadian population, 2001, ages 15+ ¹⁸
< high school	52.4	44.1	33.2
High school	19.6	25.0	23.0
Diploma	22.9	25.4	28.4
Bachelors	4.5	4.7	11.7
Masters or doctorate	0.6	0.8	3.7

A study based on census data from 1996 and 2001 showed that between 1996 and 2001 the proportion of the Registered First Nations population with either a trades skill, college or a university certificate or degree increased from 20 to 24%.¹⁹ While this increase is impressive, the impact is mitigated somewhat by the fact that during the same period the proportion of the non-First Nations population with a trades skills, college or university certificate or degree increased from 35% to almost 41%.²⁰ Interpretation of all statistics comparing census data of 1996 to figures in 2001 should be interpreted with caution because of the ethnic mobility factor discussed earlier.

Marital status

About half of adults in First Nations communities were married or in common law relationships.

Figure 5. Marital status of adults in First Nations communities (n = 10,906)

Gender differences in the marital status of adults in First Nations communities showed more men reporting that they were single and more women reporting that they were previously married. Age patterns, as expected, showed that more younger adults were single and in common law

relationships and older adults were married or previously married.

Table 3. Marital status patterns by gender and age

Table 1: Marital status patterns by gender and age			
Gender and Marital Status	Men		Women
Single	40.7%		33.5%
Previously married	4.9%		11.6%
Age and Marital Status	18-29	30-59	60+
Single	65.7%	28.5%	13.9%
In common law relationships	23.8%	18.9%	6.4%
Married	8.0%	41.2%	42.1%
Previously married (divorced, widowed)	-	8.2%	30.1%

The overall pattern of marital status was approximately the same as the Canadian population. The greatest difference was found with the First Nations adults who did not live in First Nations communities.

Table 4. Marital status of adults in First Nations communities, compared

Marital Status	RHS First Nations adults in First Nations Communities, ages 18+ (n=10,773)	First Nations adults not living in First Nations Communities, 2001, ages 15+ ²¹	Canadian pop., 2001, ages 15+ ²²
Single	37.2	53.0	41.7
Common Law	19.0	17.5	
Married	30.7	54.6	11.8
Separated	4.9	34.7	5.4
Divorced	3.8		
Widowed	4.4	8.2	12.21
			9.3

Employment

About half of adults in First Nations communities are working for pay and most of those are employed full time.

Detailed information about the number of hours worked per week was collected in the RHS adult surveys, and it showed the following patterns for gender, age and education:

More women worked part time, younger and older adults were less likely to be working for pay than those from 30 to 59 years, and the higher the education, the higher the percentage of those who worked for pay.

Employment rates of adults in First Nations communities were about the same as for First Nations adults who do not live in First Nations communities, but they lag behind those of the Canadian population by about 8%.

Figure 6. Employment patterns by gender, age and education (n=10,773)

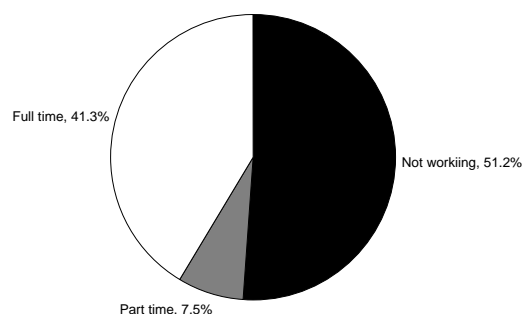


Table 5. Employment patterns (%) by gender, age and education, (n=10,659)

TABLE 1. Employment by gender, age, and education					
Gender and employment		Men		Women	
Worked for pay, part time.		5.7		9.4	
Age and employment		18-29	30-59	60+	
Employed at the time of the interview.		39.8	59.2	22.1	
Education and employment		<HS grad	HS grad	Dip. etc.	Uni. deg.
Employed at the time of the interview.		34.3	59.2	65.6	83.0

Table 6. Employment of adults in First Nations communities, compared

Employment Status (at time of interview)	RHS First Nations adults in First Nations communities, ages 18+ (n=10,773)	First Nations adults not living in First Nations communities 2001, ages 15+ ²³	Canadian pop., 2001, ages 15+ ²⁴ (2004)
Working for pay	48.8	50.2	57.0
Full time	41.3		
Part time	7.5		

It would not be wise to compare 1996 and 2001 census data on the issue of labour force participation nor on other employment or income measures because the risk of error from the ethnic mobility factor (people declaring First Nations identity in the 2001 census who had not declared in 1996). It was however possible to compare employment rates as they varied by educational attainment. Table 5 showed that for the RHS data, labour force participation rates

increase as educational attainment increases. Using census data, it is possible to demonstrate that when educational attainment is taken into account, there is little difference between First Nations and non-First Nations identity groups in labour force participation rates, especially at higher levels of educational attainment.²⁵

Personal and household incomes

The findings for income, especially household income must be used with caution. About 16% of the sample knew neither their personal nor their household income. In addition, 6.9% refused to answer the personal income question and 33.3% refused to answer the household income question. Although those who did not know income levels tended to be younger, those who refused to answer that question tended to be not working for pay or of lower educational attainment. Those who refused to answer question for personal income usually refused or did not know their household income.

The median personal income in 2001 of RHS adults in First Nations communities was \$15,667. The median household income = \$29,897. Men and women had essentially the same income levels.

Table 7. 2001 Personal and household income levels

Income categories	RHS First Nations Adults' Personal Income (n=8067)	RHS First Nations Adults' Household Income (n=5301)
<\$10,000 or income loss	33.2	11.7
\$10,000-\$14,999	16.4	10.7
\$15,000-\$19,999	10.2	8.3
\$20,000-\$29,999	19.7	19.5
\$30,000-\$49,999	15.5	25.6
\$50,000-\$79,999	4.4	18.2
\$80,000 plus	0.6	6.0
Median income	\$15,667	\$29,897

As expected, adults who were under 30 and over 59 had lower personal incomes than those in the middle range. The pattern was not as clear for reported household incomes. Education was related to income levels —as expected also. Adults with higher levels of formal education had higher median incomes than adults with less formal education.

Median personal income for Canadian income earners was \$40,000 for men and \$24,800 for women.²⁶ First Nations adult income earners, age 15 and over and living outside First Nations communities had a median income of \$14,879 in the year 2000.²⁷

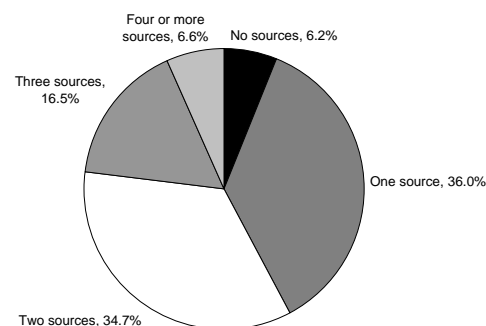
Other researchers compare Aboriginal and non-Aboriginal median incomes and their findings help with the interpretation of RHS data. With regard to the comparative median income levels for men and women (ages 15+) relative to education levels, findings were similar for men and women. The gaps between the incomes of Registered First Nations and non-First Nations adults were larger at

higher levels of education. The gaps were greater for men than for women.²⁸

Table 8. Income patterns by age and education

Age and Personal and Household Incomes	18-29	30-59	60+	
Median personal incomes.	<\$10,000	\$21,783	\$12,991	
Median household incomes.	\$27,114	\$32,878	\$24,650	
Education and Personal Incomes	<HS grad	HS grad	Dip., etc.	Uni. Deg.
Median personal incomes	\$11,718	\$17,656	\$21,807	\$36,725

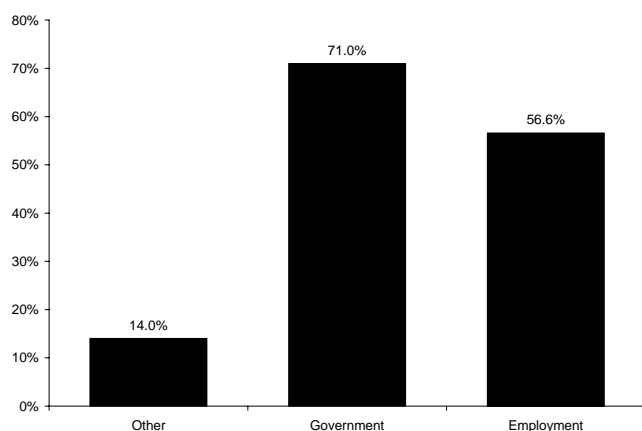
Figure 7. Number of income Sources during 2001 (n=10,962)



Sources of income from employment included paid employment (wages or salary) and self employment earnings. Government sources of income included employment insurance, social assistance, basic Old Age Security, benefits from the Canada or Quebec Pension Plan, veterans pension, worker's compensation, disability allowance, and Child Tax Benefit.

Other sources of income included royalties, trusts, land, retirement, pensions, superannuation, annuities, child support/alimony, education or training allowances.

More men, more adults ages 30 to 59 and more of those with higher education had income from employment sources. More women, more older and younger adults and fewer adults with a university degree had income from government sources.

Figure 8. Types of income sources during 2001, (n=10962)**Table 9. Income source patterns by gender, age and education**

Gender and income sources	Men		Women	
Income from employment sources	60.8%		52.1%	
Income from government sources	62.4%		79.8%	
Age and income sources	18–29	30–59	60+	
Income from employment sources	49.0%	66.8%	27.8%	
Income from government sources.	74.0%	67.4%	79.7%	
Education and income sources	<HS grad	HS grad	Dip., etc.	Uni. degree
Income from employment sources	42.9%	67.0%	73.7%	82.7%
Income from government sources.	74.9%	71.5%	67.1%	49.2%

Summary of age patterns

Most of the patterns of personal characteristics by age that were cited above were to be expected from a population that: spans the ages 18 to over 60; and that has a pattern of seeking post secondary education well into their late twenties, thirties and beyond.

More younger and older adults had:

- had the highest rates of not completing high school
- had the lowest rates of being employed at the time of the interview
- had the lowest median personal incomes
- came from households with lowest median household incomes
- had income from government sources

More adults ages 30–59

- had higher rates of completion of post-secondary diplomas and degrees
- had income from employment sources

More younger adults were:

- single
- in common law relationships

More older adults were:

- married
- previously married

Summary of education patterns

More adults with higher levels of formal education than adults with less formal education were employed, had higher median personal incomes and had incomes from employment sources.

Fewer adults with university degrees had incomes from government sources than those with less than a bachelors degree.

Community Characteristics

Communities were classified into three size categories by population. Sampling was proportional to the populations in these community size categories.

Table 10. Population estimates by community size. (n = 10,962)

Community size category: number of residents	Survey respondents
<300	9.6%
300-1499	56.2%
1500 +	34.2%

Community size was related to only one of the demographics discussed in this chapter, household income. Adults from small communities had the higher median household income, \$24,083 (n = 704) while adults from the midsize and larger communities had median household incomes of \$19, 550 (midsize, n = 3070) and \$21,544 (larger, n = 1527). This could not be explained by number of adults in the household as there were fewer adults in the small community households.

Communities were also classified according to their degree of isolation as defined in Table 11. There were few patterns to report. Remote isolated communities seem to have higher median household incomes. They undoubtedly have higher expenses as well.

Table 11. Population estimates by degree of isolation of communities (n = 10,543)

Community size category (number of residents)	Survey respondents
Remote-isolated	2.8%
Isolated	15.4%
Semi-isolated	5.9%
Non-isolated	76.0%

Table 12. Adults' incomes and sources of income variations by degree of isolation of community

	Isolation status			
	Remote isolated	Isolated	Semi-isolated	Non-isolated
HH income median (n=5071)	\$39,572	\$31,980	\$27,301	\$29,947
Sources of income (n=10543)				
Employment	63.7*	45.9	50.6	59.5*
Government	68.2	74.5	74.0	69.8
Other	24.2	7.5	14.0	15.4*

* significantly different from isolated communities.

Conclusions and Recommendations

Conclusions

For a variety of reasons that go beyond such factors as increased fertility, First Nations communities have more young people relative to adults. Whatever the reason, this increase in population has significant implications for family income, education systems, and health and social services accessibility.

While the gap between adults in First Nations communities and adults in the broader Canadian community (with regard to educational attainment, employment rates and incomes) has been well documented in this report and elsewhere, evidence of changes over time is difficult to measure. No such comparisons are available from the 1997 First Nations and Inuit Regional Longitudinal Health Survey (much briefer than the 2002 survey reported here). Due to the increase in the number of First Nations claiming their identity from 1996 to 2001 census, researchers are still uncomfortable making comparisons.

Educational attainment is greater for 30–59 year old adults than for the younger adults. Increasing educational attainment rates are important (especially when combined with the fact that when education is taken into account, there is little difference in labour force participation rates between First Nations and non-First Nations adults). The lower employment rates of First Nations adults compared to non-First Nations adults would, therefore appear to be due to their lower educational attainment. If more First Nations adults are

upgrading their skills through education of some form then employment rates should follow.

First Nations adults surveyed in the RHS with higher educational attainment had higher median incomes than their counterparts. Other researchers in a position to compare First Nations and non-First Nations data found the same, but showed that Registered First Nations men and women had lower median incomes than non-First Nations men and women. The fact that the gaps were greater at higher income levels suggests a glass ceiling for First Nations incomes.

Another study in the United States has shown that the collective educational attainment in a community has an impact on two important behaviour patterns of youth. When a community has between 5 and 40 percent of adults in professional, managerial or teaching positions, teen pregnancy rates and school drop-out rates are fairly uniform. When the percentage of higher status role models drops by as little as 2% and is less than 5%, drop-out rates and teen pregnancy rates double. It has been described as an epidemic in US neighbourhoods where the rates were observed.

Recommendations

There is a need for First Nations communities to plan ahead for both their changing demographics and potential changes in community income from federal sources. Those not already addressing the future potential changes may find a future crunch in community resources. The increase in First Nations population for the next two generations is accompanied by an increase in the number who do not qualify to be registered. There are serious implications for the increasing need for services followed or accompanied by a possible decline in federal funds flowing to the community. There may be no corresponding decline in population in the First Nations communities, just a decline in the number of children who qualify under Bill C-31. This is not new news, but it is further underscored by the RHS data.

Due to factors such as this, providing services to First Nations communities in the future may be challenging and complex. The level of educational resources needed for the increased number of children is current. Today's children will be the seniors of the second half of the century and the need for health care resources will appear as a bulge at that time. If the educational attainment challenge and the subsequent employment challenge is not addressed adequately, the social and income services needed will impact the resources of the communities even sooner.

Although current education and employment models rarely reflect a First Nations world view, the RHS findings and other research studies confirm that they are the key to increasing personal, family and community resources. Some success has been demonstrated that supports this approach for members of non-dominant cultures. Individuals may need the support of their communities in understanding the process of leading

a bi-cultural life. Current drop out rates for youth in First Nations communities are so high that they increase the risk that large portions of some communities will be unemployed or earning a poverty level income for some time to come.

Recommendations for the next survey include a more precise analysis of information on whether the respondent was a parent and/or living with his/her children. While there was information on marital status, number of adults/children in a household, more information on the particulars of household composition (and their interrelationships) could have made the chapter richer.

Lastly, in addition to the questions about a person's employment status, it would have been helpful to know whether the respondent was enrolled in any school or training (full or part time) at the time of the interview.

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Chapter 2

Language and Culture

Abstract

This chapter provides information about the state of First Nations languages and culture and explores the relationships between language and culture, on one hand, and health services and health on the other. The results show that First Nations languages, overall, are in rapid decline but are strongest in large and remote communities. Contrary to what was expected, those who attended residential school were more likely to understand and speak First Nations languages.

The vast majority of respondents consider traditional cultural events important. The same is true for traditional spirituality and for religion. Those who consider traditional cultural events important are more likely to have positive perceptions of their community's progress.

Those who speak First Nations languages and those who perceive cultural events as important are more likely to report difficulties and barriers accessing health care. Difficulties accessing culturally appropriate care, traditional forms of care and certain Non-Insured Health Benefits (NIHB) services represent particular challenges for these groups. Health risk factors and health status outcomes were not statistically different for those who could speak First Nations languages nor among those who consider traditional cultural events important.

The decline in First Nations languages, the unexpected findings about residential school and the widespread valuing of culture are discussed and a series of recommendations are made.

Introduction

Language and culture are intertwined. They are intrinsic to the total health of the total person and they are related to all other aspects of health. This chapter explores the current state of languages, the importance of traditional culture, and how each of these relates to health care access and various conventional measures of health.

A 1996 UNESCO report described Aboriginal languages in Canada as being “among the most endangered in the world.”¹ In 2004, the Assembly of First Nations (AFN) described First Nations languages as being in “crisis.”² The decline and loss of First Nations languages are documented in various ways.

A 1990-91 survey of 171 First Nations communities³ found that in 41% of them the local language was either “endangered” or “critical.”¹ The study noted that the level of First Nations language use in public venues (such as schools, social events or community meetings) was a good barometer of the status of the language.

Between 1996 and 2001, the proportion of Aboriginal peopleⁱⁱ able to carry on a conversation in an Aboriginal language decreased from 29% to 24%. In the same period, the proportion reporting an Aboriginal mother tongue fell from 26% to 20%. The trend varied from one language to another. Some showed increases while others showed decreases in the total number of speakers.⁴ Among First Nations living off-reserve, the proportion of people who both were able to carry on a conversation and had an Aboriginal mother tongue both started lower and declined as well. The use of an Aboriginal language at home, a key measure, fell from 8% to 6% among First Nations living off-reserve.⁵

As noted in the 1996 Royal Commission on Aboriginal Peoples (RCAP), when a language is no longer spoken at home, it cannot be passed along to the next generation. When children do not speak the language, it is likely to disappear.⁶

The disappearance of languages is an international phenomenon. In the 1990s, the UNESCO Ad Hoc Expert Group on Endangered Languages estimated that about 4% of the world’s languages are spoken by 97% of the world’s populations and that 96% of all languages are only spoken by only around 3% of the people.⁷ An international agency classified 516 of the world’s languages as “nearly extinct.” Included in the list are 16 of the 53 to 70ⁱⁱⁱ First Nations languages in Canada.^{8,9,10} A Canadian report identifies 13 of these as “nearly extinct.”¹¹ Although several languages spoken by small populations may be viable, the report considers only two First Nations languages, Cree and

Ojibway, secure from extinction in the long run because of the large populations that speak them.

In 2001, more than 10,000 people reported Cree as their mother tongue and more than 10,000 reported Ojibway. Dene and Montagnais-Naskapi each had more than 10,000 able to speak well enough to carry on a conversation.¹²

In Canada, residential schools are considered a primary instrument in the erosion of First Nations language. Recognizing its vital role in the transmission of culture, those responsible for “civilizing” First Nations children expressly targeted language. Replacing First Nations languages with one seen as capable of conveying the values and notions of “civilization” was considered of paramount importance.¹³ According to the 1995 annual report of the Department of Indian Affairs, without English, the Aboriginal person is “permanently disabled” and “so long as he keeps his native tongue, so long will he remain a community apart.”¹⁴

Language is the principle means for transmitting history, culture, knowledge and values. Indigenous knowledge is embedded in indigenous language.^{15,16} As stated by the RCAP:

*The threat of their languages disappearing means that Aboriginal people's distinctive world view, the wisdom of their ancestors and their ways of being human could vanish as well.*¹⁷

The AFN goes further:

*Language is our unique relationship to the Creator, our attitudes, beliefs, values and fundamental notions of what is truth. Our Languages are the cornerstone of who we are as a People. Without our Languages our cultures cannot survive.*¹⁸

And for Leroy Little Bear, language is the foundation of sovereign nations:

*We have all those attributes that comprise sovereign nations: a governance structure, law and order, jurisprudence, a literature, a land base, spiritual and sacred practice, and the one attribute that holds all of these...together: our languages. So once our languages disappear, each one of these attributes begins to fall apart until they are all gone.*¹⁹

Language and culture have also been associated with quality and access to health care.^{20,21} Linguistic and cultural barriers, as well as racism and stereotypes, lead not only to misunderstandings and frustration, but can result in inferior diagnosis, care and outcomes.^{22,23,24,25} The solutions are increasingly being discussed in terms of “cultural safety” for clients and “cultural competency” of health care workers and facilities.^{26,27,28} According to a Health Canada report that summarizes research on language barriers in health:

ⁱ “Critical” was defined as less than 10 speakers living in the community and “endangered” referred to communities either with less than 50% of the adult population speaking the language and few or no young speakers, or communities with no identified speakers under 45 years old, even if over 80% of the older population did speak the language.

ⁱⁱ Including First Nations, Inuit and Métis, both on and off-reserve.

ⁱⁱⁱ The variation in number of languages reflects the differing classification standards, including distinctions between dialects and languages.

There is solid evidence from Canadian programs that patients who do not speak an official language do not receive the same standard of ethical care as other Canadians.”²⁹

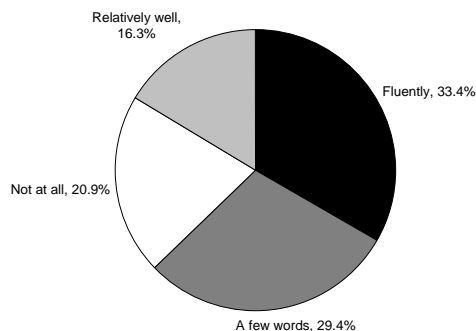
Language connects people to their past and provides spiritual and emotional grounding.³⁰ The Royal Commission explicitly identified revitalization of languages as a key to healthy individuals and communities.³¹

Results

Speaking and understanding First Nations languages

As shown in Figure 1, about half (49.7%) of respondents understand at least one First Nations language “relatively well” or “fluently.” Slightly fewer (43.9%) could speak a First Nations language at that level, while 22.3% reported that their First Nations language was the one they used most often in daily life. About one in fifty (2.2%) were categorized as First Nations unilingual, speaking a First Nations language, but neither English nor French “relatively well” or “fluently”.

Figure 1. How well respondents understand a First Nations language (n=10,962)*



*If participants understood more than one, their strongest language is counted.

First Nations languages and age

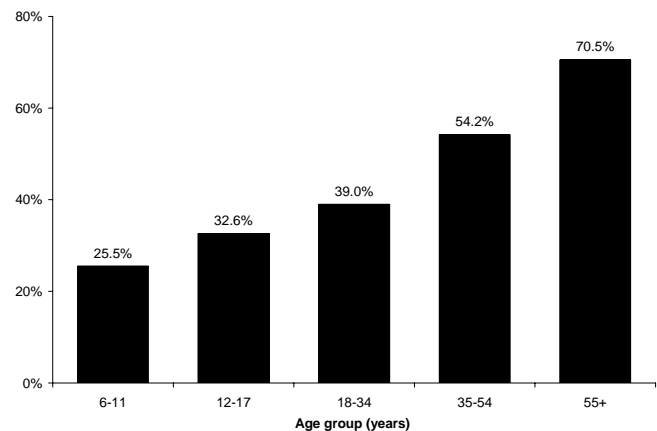
First Nations language comprehension decreases steadily as age decreases (moving to the left in Figure 2). The rapidly declining rates of comprehension indicate rapid loss of language. This erosion is occurring in First Nations communities, despite the fact that they are the places where the concentration of speakers is highest.

First Nations languages and community characteristics

The proportion who understand a First Nations language “relatively well” or “fluently” is considerably higher in communities that are isolated than in those that are not (76.1% vs. 44.0%) and is higher in larger communities

(59.2% vs. 45.5%).^{iv} The isolated communities may have experienced less influence and contact with English and French speakers and the large communities may have a “critical mass” of First Nations language speakers to help support language continuity.

Figure 2. Proportion who understand a First Nations language “relatively well” or “fluently” by age (n=19,574 including youth and children)



First Nations languages and residential school history

The relationships between residential school history and First Nations language comprehension were unanticipated. Those who attended residential school were actually more likely to understand a First Nations language “relatively well” or “fluently” compared with those who did not attend (74.8% vs. 43.6%). This association held within each age group (18–34, 35–54 and 55+ years old) and also persisted when other potentially confounding measures^v were factored out in cross-tabulations. Residential school attendance was also positively associated with the other language measures tested: speaking a First Nations language relatively well or fluently, speaking fluently (only) and having a First Nations language as primary language.

Also somewhat unexpectedly, those with at least one parent who attended residential school were no more or less likely to have a strong understanding of a First Nations language than those whose parents did not attend. Again, this pattern held true for different age groups.

Finally, and more consistent with general expectations, those with at least one grandparent who attended were less likely to understand a First Nations language “relatively well” or “fluently” (38.6% vs. 56.2%).

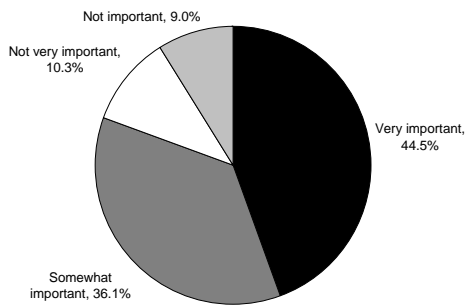
^{iv} For this chapter, isolated communities include those that lack road access to physician services within 90 kilometres and small communities have local populations between 300 and 1,499 while larger ones have 1,500 or more.

^v Highest level of education, personal income, importance of traditional cultural events, self-reported health, presence of a health condition, parent who attended residential school, measure of life balance and community isolation status.

Importance of culture, spirituality and religion

As shown in Figure 3, 44.5% considered traditional cultural events “very important” in their lives, and a further 36.1% said “somewhat important” for a total of 80.6%. About as many (76.4%) considered traditional spirituality and religion (70.3%), such as Christianity, important in their lives.

Figure 3. Importance of traditional cultural events (n=10,427)



Of those who indicated that cultural events were important, almost all (90.8%) also said that traditional spirituality was important to them. Those who considered traditional spirituality important were more likely to consider religion important (74.0%) than those who didn't consider traditional spirituality important (57.2%). Overall, 54.5% considered all three important.

Importance of culture, personal characteristics and residential school history

Considering traditional cultural events “very” or “somewhat” important was not associated with any of the personal and community factors examined. There were no significant differences related to gender, age group, personal income level, formal education level, First Nations language comprehension, and community size or isolation status.

Residential school history was, however, related. As with the language findings, those who attended residential school were more likely to consider traditional cultural events either somewhat or very important (85.8% compared with 79.2% of those who did not attend). Those who had one or both parents who attended residential school were also more likely to consider traditional cultural events important, as were those who had one or more grandparents who attended.

Importance of culture and perceptions of community progress

The survey asked respondents whether their communities had made any progress in various areas over the previous 12 months. Those who consider traditional cultural events important were more likely to perceive progress in many

areas, as shown in Table 1. This may reflect an overall more positive perspective.

Interestingly the culture-oriented group's relatively positive assessment of community progress is most pronounced in areas closely related to culture. They are twice as likely to perceive progress in the renewal of First Nations spirituality and 1.8 times as likely to identify progress in traditional ceremonial activity, renewal of relationship with the land and traditional approaches to healing.

Differences in perceptions between those with and without good First Nations language comprehension were less pronounced.

Table 1. Proportion identifying community progress (compared)

“Some” or “Good” Community Progress in:	Important of traditional cultural events		Ratio
	Important*	Not important**	
Renewal of First Nations spirituality	61.7%	30.4%	2.0
Traditional ceremonial activity	68.3%	37.8%	1.8
Renewed relationship with the land	58.9%	33.1%	1.8
Traditional approaches to healing	63.9%	34.8%	1.8
Reduction in alcohol and drug abuse	39.0%	26.6%	1.5
Use of First Nations language	65.0%	46.5%	1.4
Availability of First Nations health professionals	63.0%	47.5%	1.3
Cultural awareness in schools	80.4%	64.1%	1.3
First Nations control over health services	66.5%	57.5%	1.2
Education and training programs	80.2%	71.8%	1.1
Water and sewage facilities	71.0%	61.9%	1.1

*Includes those indicating “very important” and “somewhat important.”

**Includes those indicating “not important” or “not very important.”

Language, Culture and First Nations Spirituality

Despite the language-culture connection discussed in the introduction, language comprehension and interest in culture appear to not always go together at the individual level. As shown in Table 2, about 4 in 10 (40.8%) respondents both understand a First Nations language and consider traditional cultural events important, and about an equal proportion (39.8%) consider cultural events important but do not understand a First Nations language.

Looked at another way, those who understand a First Nations language (relatively well or fluently) are just as likely as those who don't to consider traditional cultural events important (82.3% vs. 78.9%, a non-significant difference). Likewise, those who consider traditional cultural events important are no more or less likely to understand a First Nations language. Culture, it seems, is important to almost everyone.

Table 2. Language comprehension* and importance of traditional cultural events**

	Proportion of respondents
Both understand a First Nations language* and consider traditional cultural events important**	40.8%
Understand a First Nations language* but don't consider traditional cultural events important	8.8%
Don't understand a First Nations language but do consider traditional cultural events important**	39.8%
Neither understand a First Nations language nor consider traditional cultural events important	10.6%
Total	100%

*Includes those who understand a First Nations language "relatively well" or "fluently."

**Includes those indicating "very important" and "somewhat important."

Nonetheless, given what is understood about the critical role of language in culture, values and spirituality, there would seem to be some advantage to having both an orientation to culture as well as language skills. A group was identified of those who understand a First Nations language (relatively well or fluently) and also consider both spirituality and traditional culture important. These individuals are potential leaders in the transmission and retention of First Nations knowledge.

Based on the RHS data, 37.6% of adults are in this group. Although they can be found in all categories, statistically, these potential leaders were more likely to be older (52.0% of those 55 or older compared with 28.4% of those 18–34 years of age), to live in large communities (1,500+ population) and in isolated communities. They were more likely to have attended residential school (60.4% vs. 31.3%) (a pattern that held true for each age group examined [18–34, 35–54 and 55+]) and were less likely to have had a grandparent who attended residential school.

Language, culture and health care access

First Nations report a variety of difficulties and barriers in accessing health care services. Table 3 shows the proportion experiencing barriers and difficulties, comparing those who speak and don't speak First Nations languages, and those who do and don't consider traditional cultural events important.

There is clear pattern. Those who speak a First Nations language and those who consider traditional cultural events important are more likely to experience barriers. The effect was strongest for the culture-oriented group, which was 1.7 times more likely to report difficulties/barriers when all ratios were averaged. This compares with an average ratio of 1.4 among those who understood a First Nations language.

A comparison of those who *spoke* a First Nations language as their primary language revealed fewer significant differences. Averaging across all items reported in Table 3, that group was 1.3 times more likely to experience difficulties/barriers. A comparison with unilingual First Nations language speakers was not possible. Results were below reportable thresholds for most items due to the small number of unilingual individuals in the database.

Although not necessarily identified by the largest proportion of First Nation language speakers overall, the ratios (i.e. the increased burden) among that group were highest for the following indicators:

- Difficulty accessing a hearing aid through NIHB (2.8);
- Difficulty accessing escort travel through NIHB (1.9);
- Difficulty accessing "other medical supplies" through NIHB (1.7);
- Felt that service was not culturally appropriate (1.6).

Health Canada's Non-Insured Health Benefits (NIHB) program appears to be an area of special difficulty among those who speak First Nations languages.

Among those who consider traditional cultural events important, the ratios were highest for the following:

- Felt that service was not culturally appropriate (3.2);
- Experienced difficulty getting traditional forms of care (2.6);
- Experienced difficulties accessing transportation services or costs (air or road) through NIHB (2);
- Experienced difficulties accessing dental care services through NIHB (2.0).

Not surprisingly, the group that considers cultural events important is much more likely to identify difficulties related to the lack of culturally appropriate and traditional care. They also appear to disproportionately experience difficulties with the NIHB program.

Table 3. Proportion reporting health care access barriers and difficulties

	Speaks FN language				Considers cultural events important		
	Yes*	No	Ratio		Yes^	No	Ratio
Feel they have less health care access than other Canadians	42.5%	30.2%	1.4		36.4%	30.2%	1.2 NS
One or more difficulties accessing traditional medicines	33.0%	33.2%	1.0	NS	35.6%	22.6%	1.6
Reported one or more barriers to health care access	62.1%	51.0%	1.2		59.3%	43.6%	1.4
Specific barriers reported:							
• doctor or nurse not available in area	22.7%	15.2%	1.5		18.3%	15.8%	1.2 NS
• health facility not available	13.4%	8.8%	1.5		10.6%	9.1%	1.2 NS
• waiting list too long	39.2%	28.6%	1.4		34.8%	26.5%	1.3
• unable to arrange transportation	17.4%	12.3%	1.4		15.4%	9.9%	1.6
• difficulty getting traditional care	16.6%	10.9%	1.5		15.2%	5.8%	2.6
• not covered by Non-Insured Health Benefits (NIHB)	22.0%	18.5%	1.2	NS	21.7%	13.0%	1.7
• approval for NIHB services denied	18.2%	14.7%	1.2	NS	17.9%	9.2%	1.9
• could not afford direct cost of care, service	16.0%	11.0%	1.5		14.7%	8.2%	1.8
• could not afford transportation costs	16.9%	11.2%	1.5		14.8%	9.0%	1.6
• could not afford childcare costs	8.5%	6.0%	1.4		7.7%	4.1%	1.9
• felt health care provided was inadequate	20.4%	14.2%	1.4		17.9%	12.2%	1.5
• felt service was not culturally appropriate	17.1%	10.6%	1.6		15.5%	4.8%	3.2
• chose not to see health professional	11.6%	10.4%	1.1	NS	11.6%	7.5%	1.5
• service not available in area	18.0	12.1	1.5		15.7%	11.1%	1.4 NS
Had any difficulty accessing NIHB services	36.2%	32.3%	1.1	NS	37.2%	24.1%	1.5
Specific difficulties accessing NIHB services:							
• medications	20.1%	16.0%	1.3	NS	19.0%	12.4%	1.5
• dental care	17.6%	16.9%	1.0	NS	19.0%	9.6%	2.0
• vision care	19.8%	15.2%	1.3		18.6%	11.7%	1.6
• hearing aid	5.4%	1.9%	2.8		3.5%	2.0%	1.8 NS
• other medical supplies	8.4%	5.0%	1.7		6.7%	4.1%	1.6 NS
• escort travel	10.7%	5.7%	1.9	NS	8.3%	5.3%	1.6 NS
• transportation services or costs (air or road)	11.0%	7.5%	1.5	NS	9.7%	4.8%	2.0

*Includes those speak a First Nations language relatively well or fluently.

^Includes those who consider traditional cultural events "very important" and "somewhat important."

NS refers to differences that are not statistically significant.

Language, culture and health

A set of five risk factors^{vi} and seven health measures^{vii} were analyzed, comparing first those who do and do not speak a First Nations language and second those who do and do not consider traditional cultural events important. Although some associations were initially present,^{viii} after adjusting for age, there were no statistically significant differences on any of the twelve measures.

Summary and Discussion

A survey database is inadequate to explore the relationships between language, culture and health. Still, some findings are clear and others provide interesting points of departure for further research and consideration.

To summarize the key findings with respect to language:

- Based on age trends, First Nations languages, overall, are in rapid decline;
- Only about one in fifty people are unilingual First Nations speakers.
- First Nations languages are strongest in large and remote First Nations communities;
- Unexpectedly, those who attended residential school are more likely to understand and speak First Nations languages, although those with grandparents who attended residential school are less likely to;
- Those who speak First Nations languages report more difficulties and barriers accessing health care, especially related to NIHB services; and
- Health risk factors and health status is similar among those who do and do not speak First Nations languages.

To summarize the key findings with respect to culture:

- The belief that traditional cultural events are important is widespread. The same is true for traditional spirituality and for religion. More than half consider all three important;
- Traditional cultural events are important to most people, regardless of their age, gender, income, education, First Nations language skills or their community's size or isolation;
- Somewhat unexpectedly, those who attended residential school as well as those whose parents and/or grandparents attended are more likely to consider traditional cultural events important;

- Those who consider traditional cultural events important are more likely to have positive perceptions of their community's progress;
- There is a potentially important group, representing more than one-third of adults, that understands a First Nations language and considers both traditional cultural events and traditional spirituality important;
- Those who perceive cultural events as important are more likely to experience difficulties/barriers to health care access, especially related to culturally appropriate, traditional care and NIHB services; and
- This culture-oriented group is no more or less likely to report health risk factors or problems.

The dramatically lower levels of language comprehension with each successive generation, supports the Assembly of First Nations' characterization of languages in "crisis."³² The small proportion of people who are unilingual may, in some respect, be a more important measure of the decline. The disappearance of unilingual First Nations language speakers can be seen as the loss of a vital source of knowledge and understanding. Important First Nations concepts and ways of thinking are embedded in the words and structure of the language. The increased reliance on bilingual speakers to transmit language (thus, knowledge and culture) may result in loss of meaning and the unwitting introduction of foreign concepts and meanings.³³

The unexpected association between residential school attendance and language is intriguing. One possible explanation is that, as part of the drive to "civilize," there may have been preferential recruitment of children consider less "assimilated," the children who were more likely to speak their language in the first place. This is partly supported by the data. Those who attended residential school reside disproportionately in isolated communities (where language skills are stronger). About one in four people now living in isolated communities attended residential school (26.9%) compared to one about one in six (17.3%) of those from non-isolated communities. Nonetheless, the association between residential school attendance and First Nations language comprehension persists, albeit to different degrees, for both isolated and non-isolated communities. Overall, those who attended residential school were 1.7 times as likely to understand a First Nations language (relatively well or fluently). The comparable ratios were 1.3 for isolated communities and 1.9 for non-isolated communities.

Contrary to the clear intent of many schools and their administrators, and contrary to widely held views, could the residential school experience have actually done less to damage First Nations languages than other types of schools and environments?

Although residential school students were generally discouraged, either gently or forcibly, from speaking their languages, most children likely continued to speak among

^{vi} Physical activity, overweight/obesity, smoking, heavy alcohol consumption, hashish use.

^{vii} Self-reported health, presence of one or more chronic conditions, presence of a disability, injury in the previous year, suicidal ideation (ever), suicide attempt (ever), feeling sad, depressed or blue for at least two consecutive weeks in the previous year.

^{viii} Before taking age into account, those who spoke a First Nations language were more likely to have one or more health conditions, more likely to have a disability and less likely to have used hashish. Also, before factoring out the effect of age, those who considered traditional cultural events important were more likely to have had suicidal thoughts at some time in the past and were more likely to have felt sad, depressed or blue for 2 weeks (or more) in a row in the reference year.

themselves, possibly in secret, possibly in active defiance. Meanwhile, those who did not attend residential schools may have been in schools where First Nations speakers were in the minority (e.g., in neighbouring towns)—schools in which First Nations language and culture were often ignored. In those settings, the First Nations children may have had no one to talk to in their First Nations language.

Another possible explanation for the unexpected association may relate to (re)learning one's First Nations language later in life. As adults, many people have sought, particularly through healing, to re-learn their languages and have developed or regained interest in their traditional cultures and spirituality.

Although there were no apparent associations with risk factors or health outcomes, this may be due to the limited scope of the data.

It is unclear exactly what *considering traditional cultural events or traditional spirituality important in one's life* might mean in practice or how this may vary from person to person. Nonetheless, based on the numbers, traditional culture and spirituality appear to be strong. The fact that traditional cultural events are considered important by the vast majority regardless of gender, age, income, education, First Nations language skills or the type of community they live in, suggests a pervasive undercurrent of shared values. The culture-orientation also appears to coincide with more a more positive attitude about the community.

Holistically, we view language and culture as part of well-being overall at both the individual and community/nation levels. The rapid loss of language creates imbalance. The apparent strength of culture, on the other hand, suggests resilience and offers hope.

Recommendations

Language

The RCAP report indicates that language protection involves maintaining or increasing the number of fluent speakers and using Aboriginal language in everyday life. A seminal report on Aboriginal language retention makes an important and obvious observation:

*The simplest way to keep a language alive is to ensure that the children speak it, and the simplest way to accomplish this is to teach them when they are infants.*³⁴

Unfortunately, this is no longer possible for an increasing number of families. If languages are to be retained and revitalized, urgent remedial action is required. Multiple mutually reinforcing strategies will have the greatest chance of success. Under the heading "what works and why," an Assembly of First Nations (AFN) report³⁵ identifies four

levels of intervention (noting that they are not always possible):

- From infancy within the family;
- In language immersion daycare programs;
- In schools; and
- In the community-at-large.

School-based approaches, such as the Kahnawake Survival School,³⁶ can be valuable, as can on-the-land/in-the-bush cultural immersion. Opportunities for receptive children and youth to spend time with elders can be valuable as well.

Although language is learned in the community and within the family, some regional and national strategies may be promising.

- Enhancing project funding, through programs such as the Aboriginal Language Initiative^{37, 38} and build on successes of language support programs, such as the Woodland Cultural Centre;³⁹
- Finally passing legislation to protect and support First Nations languages, similar to the private members bill initially introduced in 1989 or others proposed since;^{40, 41}
- Expanding research and training initiatives focused on language revitalization strategies, such as the one at the University of Victoria;⁴² and
- Further developing public school curricula.⁴³

Health services

There are numerous health care service problems to be addressed, including accessibility, cost, types and appropriateness of care. While addressing all of the access issues is critical, those that disproportionately affect First Nations language speakers and those who value traditional cultural events are of special concern here. Ensuring improvements in those areas is a matter of equity and cultural respect.

NIHB services in particular were identified as inadequate. Appropriate funding and policy revisions are needed to properly meet the needs. The fact that certain groups are more affected than others also suggests that policies are not consistently or evenly applied. Further development of guidelines, increased training and improved quality control or oversight may be needed to ensure that everyone receives the same level of care. Based on the excess burden experienced by First Nations language speakers and those who are culturally oriented, the following NIHB services require special attention:

- Dental services;
- Transportation services and costs;
- Escort travel; and
- Provision of hearing aids and other medical supplies.

Traditional forms of care need to be expanded and supported, and existing “mainstream” services need to be made more culturally appropriate. Cultural competency of health care providers needs to be developed through training, and cultural safety needs to be incorporated into the curricula of nursing, social work and medical school programs. Professional development courses and guidelines for practitioners, such as the one developed for the Society of Obstetricians and Gynaecologists of Canada⁴⁴ are also important tools to help raise awareness.

Further research

Additional research is needed into the unexpected associations between residential school attendance and both language skills and the valuing of culture. More information about the development of language skills through all stages of life as well as a better understanding of all the factors influencing language, especially among those who did not attend residential school, would be instructive.

Research into what happens when culture remains strong but language fades would also be useful. If indigenous knowledge is embedded in indigenous language, what actually happens to the knowledge when the language is diminished or gone? How do First Nations cultures and values change and how do they endure in the face of language decline?

Finally, from a First Nations perspective, language and culture *mean* health. Can further investigation of health outcomes show the same from an epidemiological perspective? More focused research is needed to investigate cultural and linguistic differences in diagnosis, treatment and outcomes among patients with similar symptoms and conditions.

Notes to Chapter 2

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Chapter 3

First Nations Housing and Living Conditions

Abstract

This chapter considers what the RHS data add to our understanding of the housing conditions, and the general living conditions, faced by First Nations (FN) people. It examines some of the more interesting observations in five areas of special interest:

The Nature of Home Occupancy. The 2001 Census reports that over 65% of Canadian families own their home. Most of the rest rent their accommodation. Social housing plays a minor role. This is reversed in the FN context: 61.9% of on-reserve families live in band-owned housing which is analogous to social housing. Of First Nations situated in the provinces, 74.1% of under-\$10,000 households are thus in social housing, as are 64.4% of under \$30,000 households. Over half (57.2%) of households reporting \$30,000 to \$79,999 income live in band houses, and 39.5% of the (few) over-\$80,000 households also live in band houses. These figures —radically different from the general population —are explained by factors like: extreme poverty; banks not giving on-reserve mortgages without a federal guarantee; and sometimes-prohibitive geography related construction costs.

Physical Condition of Housing. One third (33.6%) of FN homes need major repairs, up from the one quarter figure cited in 1985 by the Neilson Task Force. Another third (31.7%) need minor repairs. These are higher rates for necessary repairs than the Auditor General's 2003 estimates. First Nations adults are pessimistic about progress in improving the quality of their housing: 40.3% report there has been 'no progress'; 46.2% report 'some progress'; and only 13.5% report 'good progress'.

Housing Supply and Occupant Density. The mean room density rate in FN communities is 0.76 persons per room, almost double the national rate of 0.4 persons per room. The average Canadian house has 2.6 occupants while the average FN house has 4.2 occupants; 17.2% of FN houses meet the accepted definition of "overcrowded" (i.e., they exceed 1 person per room). The occupant density in the FN context appears to be increasing, while in the general population it has declined over two decades. The highest number of occupants recorded is 18 persons.

Basic Infrastructure and Amenities Found in Houses. A fifth (21.8%) of adults report no access to garbage collection services while 9.0% of FN homes lack a septic tank or sewage service. Only two-thirds of respondents (67.8%) consider their water safe to drink. Water delivery by pipe is the primary source for most respondents (63.2%). Of those, only 71.4% consider their water safe to drink despite this water having been treated. Although the main water supply may be piped water, bottled water is the main drinking water (61.7% of respondents). Nearly all FN homes have "necessary amenities": electricity (99.5%); hot running water (96.3%); cold running water (96.5%); flush toilet (96.5%); refrigerator (98.7%); and cooking stove (99.3%). Income has little bearing on whether a home has these amenities. Only 21% of under-\$10,000 homes have computers, rising with income to 81.6% of over-\$80,000 homes. Only 29.8% of FN homes are connected to the Internet, and the more isolated the community, the lower the connectivity.

Indoor Environmental Health. Of the 2.9% of respondents once diagnosed with TB, almost 1 in 3 (31.0%) live in an overcrowded house. Almost half (48.5%) of respondents living in band-owned housing report mould or mildew in their home. Fewer (36.9%) of respondents in other types of accommodation report mould or mildew. Preliminary tabulations of RHS environmental health data raise intriguing questions, e.g.: although under 10% of respondents suffer from asthma, 43.5% of those sufferers report mould or mildew. Only 3.2% of respondents reported having chronic bronchitis, but 52.2% of these people report mould or mildew.

Introduction

This chapter considers what the First Nations Regional Longitudinal Health Survey (RHS) data adds to our understanding of the housing conditions and the general living conditions faced by First Nations people. The RHS contains a great deal of data relevant to housing and living conditions. In this chapter we are able to consider only a few of the more interesting observations in the following areas:

- The Nature of Home Occupancy
- Physical Condition of Housing
- Housing Supply and Occupant Density
- Basic Infrastructure and Amenities Found in Homes
- Indoor Environmental Health

Housing and living conditions are among the more tangible determinants of population health. They would be classed by the Population Health Determinants Framework¹ of the World Health Organisation (WHO) as being within the high-level determinant “physical environment.” They fall under the determinant “living conditions” in NAHO’s (2002) elaboration of the WHO framework.²

The Nature of Home Occupancy

It is well known that the majority of on-reserve housing is social housing owned and administered by the community.³ This is mostly, depending upon the community, low-income housing. The legal landscape on reserves makes private home-ownership relatively uncommon. It is not unusual for most, or all, of the dwellings to have been provided by the band, a delivery agency such as a school board, or a “government” agency such as Health Canada or the RCMP. Furthermore, a relatively high level of welfare dependency in most First Nations⁴ necessitates a high level of low-income housing. Factors such as these mean that families usually live in a house owned by someone else.

The 2001 Census reports that over 65% of families in the general population own their home. Most of the rest of the general population lives in rental accommodation. The vast majority of rental housing in Canada is owned and operated by the private sector. Communal or municipal social housing account for the rest. Table 1 shows that this is reversed in the First Nation context: the RHS estimates that 61.9% of all on-reserve families live in band-owned housing. Individuals living in communities with less than 300 people were less likely to live in band-owned housing than their counterparts in communities of 300-1,499 people.

“Band housing” is more than simply social housing to low-income families such as those receiving social assistance. It can also be housing provided as a benefit of employment, with or without formal rental or wage deductions. “Government housing” (which today is often provided by the First Nation) for teachers, nurses, and police are examples.⁵ Caution: One might imagine from Table 1 that homes are

more likely to be band-owned in communities of 300-1,499 people, but the significance level and possible explanations are insufficient to support such a conclusion.

Table 1. Nature of home occupancy by community size (n=10,566)ⁱⁱⁱ

< 300 persons	300–1499 persons	1500+ persons	Total
54.1%	65.6%	57.9%	61.9%

Table 2. Nature of home occupancy by remoteness factor – all regions (n=10,566)

Remote-Isolated	Isolated	Semi-Isolated	Non-Isolated	Total
36.6%	80.2%	63.0%	58.2%	61.3%

Table 2 answers whether home ownership varies with the remoteness of the community. The answer is “yes” but the reasons are not immediately clear. There is no simple gradient between living in band housing and the remoteness of the community. We see that the most remote (remote-isolated) communities have by far the lowest reliance on band housing, while the second most remote (isolated) have by far the greatest reliance (statistically significant). Part of the answer to this puzzle comes to light when we isolate the responses from First Nations in the provinces from responses from First Nations in the two territories (Yukon Territory and Northwest Territories).ⁱⁱⁱ

Table 3. Provincial vs. territorial First Nations reliance on band – owned housing (n=10,566)

Provincial	Territorial	Total
63.3%	30.0%	61.9%

Table 3 shows that we do indeed see significant differences between provincial and territorial responses. The percentage of “band-owned” responses is double in the provinces. A major part of the explanation may be the fact that there is less First Nations administration of housing in the two territories, where non-First Nation governments and NGOs (e.g., territorial housing corporations) have a significant role in social housing.⁶ Note also that First Nation communities in the territories are disproportionately remote-isolated or isolated.

ⁱ To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

ⁱⁱ Comparisons between groups or categories are statistically significant except where “NS” —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

ⁱⁱⁱ The territories differ from the provinces in that territorial housing corporations, direct management of social housing by CMHC, and government-owned housing are involved to varying extents in First Nations communities. Particularly, there is only one reserve in the NWT (Hay River) and elsewhere in the NWT most First Nations communities have municipal government. For these and other reasons, there is more variation in the nature of band involvement in housing, and the combined territorial level of band ownership is lower.

Table 4. Nature of home occupancy by remoteness factor – provincial regions (n=8,944)

Remote-Isolated	Isolated	Semi-Isolated	Non-Isolated	Total
61.3%	80.4%	68.7%	58.6%	62.6%

Do the RHS data tell us anything about home ownership patterns in First Nations situated in the provinces, where many communities vary across all four remoteness categories? From Table 4 we see that there is no simple gradient between remoteness and living in band housing. We can, however, say two things with confidence. First, band housing shelters almost two-thirds (62.6%) of First Nation families in the provinces. Second, significantly fewer families in non-isolated communities rely on band housing than in all the more remote communities (Table 5).

Table 5. Nature of home occupancy by grouped remoteness factor— provincial regions (n=8,944)

Isolated	Non-isolated	Total
76.6%	58.6%	62.6%

In the general population it is assumed that most or all social housing occupants have low income. In fact, as a rule applicants must demonstrate their low income in order to qualify for social housing. To what extent is this true about First Nations situated in the provinces? Are the lower-income households the households who tend to live in band housing? Consider Table 6.

Table 6. Nature of home occupancy by household and personal income, provincial regions (n=4,608)

Income range	Lives in band-owned housing
< \$10,000	74.1%
\$10,000-14,999	66.9%
\$15,000-19,999	70.7%
\$20,000-29,999	63.9%
\$30,000-49,999	57.2%
\$50,000-79,999	54.8%
\$80,000+	39.5%

As with social housing in the general population, we see from Table 6 that, in the provinces, there is a correlation between the amount of household income and residency in band-owned housing. Band housing is also overwhelmingly occupied by families with low income. As household income increases, the percentage living in band housing decreases. Seen another way, band housing is predominantly occupied by low-income families. No less than 74.1% of households reporting under-\$10,000 income and two thirds (64.4%) of families with under-\$30,000 income live in band houses.

We also see something that is uncommon in the general population: over half (57.2%) of households reporting income of between \$30,000 and \$79,999 live in band houses, and over one third (39.5%) of the (few) households with over \$80,000 income also live in band houses. The point is that a higher household income does not necessarily predicate independence from relying on band-owned housing. This may reflect increases in household income after the housing was allocated to the family. It may also reflect occupancy by professionals such as nurses and teachers in “government houses” rather than band houses per se, or the policies of some First Nations to allocate band houses on a universal basis. Both practices may reflect the lack of a housing market and difficulty in obtaining personal home financing.

Is educational achievement a factor in whether a First Nation person lives in band housing or owns his or her own house? Table 7 suggests that people of all levels of education reside in band houses. The only markedly elevated group is persons without high school education. This statistically significant higher percentage suggests that, while band housing is important generally, it is of most importance to the less educated. The fact that half of respondents with a post-secondary diploma and 45.8% of those with a bachelor’s degree live in band houses reinforces our earlier comments that lack of housing market and other challenges make band housing important to all income groups and classes.

Table 7. Nature of home occupancy by highest formal education level attained, all regions (n=6,771)

Education	Lives in band-owned housing
Did not graduate high school	74.1%
High school graduate	66.9%
Post-secondary diploma	70.7%
Bachelor’s degree	63.9%
Graduate degree	-

*suppressed due to small cell size

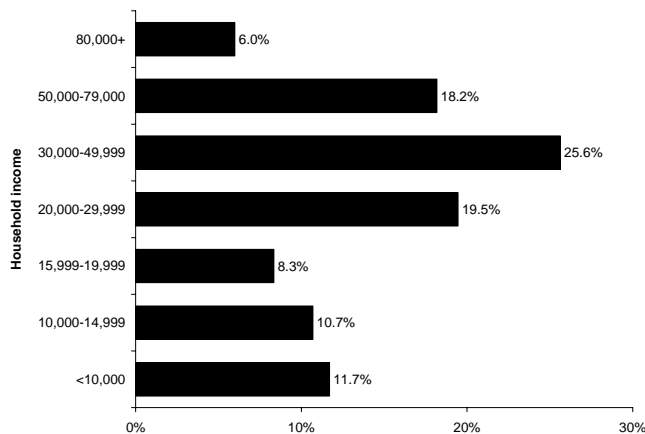
According to a commonly applied formula, housing is considered unaffordable when more than 30% of total household income goes towards rent, mortgage, or maintenance.^{iv} The National Aboriginal Housing Association estimates that 37% of off-reserve Aboriginal people inhabit housing that they cannot afford by this definition. Of these people, 15% spend 50% or more of their total income on rent.⁷ Unfortunately, we know almost nothing about the affordability situation on-reserve where a unique legal landscape and economic conditions prevail, housing

^{iv} “The measure of 30% is a widely used threshold (norm) used to identify affordability. It is the basis for the CMHC affordability measure in its core need model (albeit with an income modifier) and is the basis for subsidy payments in most social housing programs across Canada.” National Aboriginal Housing Association, 2004.

construction costs can be much higher^v and the rents charged to band housing occupants are unknown.

Poverty, by which we mean extremely low income, is a particularly strong determinant of the affordability of housing. There is no official poverty line in Canada. However, on the basis of low income cut-offs, in 2001 the Fraser Institute suggested that 8% of Canadians live in poverty, with a mean income of between \$18,000 and \$22,000.⁸ There is no compelling reason to think that the housing affordability threshold, 30% of household income, does not apply on-reserve just as it does off-reserve. The RHS suggests that a far greater proportion of First Nations households qualify by this definition as living in poverty. Consider the distribution of household income in First Nation communities (Figure 1).

Figure 1. Distribution of household income within First Nations (n=5,301)



We see from Figure 1 that one half (50.2%) of FN households have income under \$30,000 per year and 11.7% have income under \$10,000.

Physical Condition of Housing

A recent research bulletin from Canada Mortgage and Housing Corporation (CMHC) has this to say of the role of housing in overall population health:

It thus appears that socio-economic factors largely shape [population] health. Housing is likely a crucial component since it is a pivotal point of everyday life, but its role is little understood. While there has been a significant amount of research, it has been independently initiated and, as a body of work, lacks cohesion.⁹

Our understanding of the housing-health relationship in First Nations communities is even less developed than our understanding of the housing-health relationship in the general population.¹⁰ Although we see disproportionate housing challenges in many First Nations communities, the

body of on-reserve housing research is particularly lacking in cohesion. It is possible, using RHS data, to correlate certain health status data with housing data. However, given the limited understanding of the housing-health relationship generally and the limitations of the data, we are reluctant to risk drawing too many inferences. Let us instead consider what the RHS tells us about the physical condition of First Nations housing, and leave it to the reader to infer the broad health impacts that our housing condition statistics imply.

The housing and living conditions faced by most First Nation people are significantly poorer than in the provincial and national general populations.¹¹ The housing stock is diverse, even including trailers and very old houses that were relocated from elsewhere by bulldozer or barge.¹² Much of the on-reserve housing stock is aged. There is a backlog of essential renovations and upgrades to existing units. The stock varies from small-roomed “matchbox” type government houses dating from the first housing programs of the 1940s and 1950s, to larger modern units, which may or may not be well engineered for the local conditions. It is also not news that on-reserve housing units are often insufficiently maintained.

The existence of wide and unacceptable gaps in this diverse housing stock has been well documented over many years. The 1985 Neilson Task Force Report¹³ observed that on-reserve housing was still the poorest in Canada. One-quarter of the units required major repairs and one third were overcrowded. In 1992 the Standing Committee on Aboriginal Affairs observed that only half of the 70,000 on-reserve housing units were fit to live in.¹⁴ In 2003 the Auditor General observed that “around 44% of existing units required renovations.”¹⁵

What does the RHS add to our knowledge of the physical conditions of the First Nations housing stock? (See Table 8.) Perhaps the most interesting is that one-third (33.6%) of homes are reported to need major repairs, an increase from the one-quarter figure cited in 1985 by the Neilson Task Force. Another third (31.7%) are reported to need minor repairs while the remaining third (34.7%) is in acceptable condition. This also suggests a higher rate for necessary renovations than the 44% estimated by the Auditor General in 2003.

Table 8. Reported condition of housing (n=10,603)

Major repairs needed	Minor repairs needed	Only regular maintenance needed	No repairs needed
33.6%	31.7%	24.0%	10.7%

Is household income a factor in the physical condition of housing? Table 9 shows that the picture is not as simple as, say the lower the income the more run-down the house. The situation appears clearer in Table 10 where we apply a \$20,000 cut-off. Major repairs are more likely to be needed in the homes of those with household incomes below

^v Construction costs, like costs of living, tend to increase with geographic isolation. As a rule, the most expensive communities are the more northerly ones without year-round all-weather road access.

\$20,000 per year, compared with those in higher income brackets. Likewise, households above \$20,000 were more likely to only require regular maintenance.

Most First Nations adults are not satisfied with the pace at which housing quality in their community is changing for the

better. When asked about progress in improving the quality of housing in the community, 40.3% of RHS respondents felt there has been “no progress,” 46.2% report “some progress,” and only 13.5% report “good progress”.

Table 9. Reported condition of housing by household income category (n=5,233)

Primary type of household repairs needed.	Income range							Total
	< \$10,000	\$10,000-14,999	\$15,000-19,999	\$20,000-29,999	\$30,000-49,999	\$50,000-79,999	+ \$80,000	
Major repairs needed	38.9%	35.9%	40.1%	28.3%	26.5%	26.4%	17.4%	29.9%
Minor repairs needed	32.2%	39.7%	34.8%	35.0%	35.5%	31.4%	30.1%	34.3%
Only regular maintenance needed	17.7%	17.3%	19.9%	26.6%	27.2%	33.9%	40.2%	26.3%
No repairs needed	11.3%	7.1%	5.2%	10.1%	10.8%	8.3%	12.3%	9.5%

Table 10. Reported condition of housing by household income category under \$20,000 and over \$20,000 (n=5,233)

Primary type of household repairs needed.	Income range		Total
	<\$20,000	>\$20,000	
Major repairs needed	38.2%	26.2%	29.9%
Minor repairs needed (NS)	35.5%	33.8%	34.3%
Only regular maintenance needed	18.1%	29.9%	26.3%
No repairs needed (NS)	6.4%	10.1%	9.5%

Housing Supply and Occupant Density

In 2003, the Auditor General used direct terms in describing a problematic First Nations housing supply situation:

In 2001, Indian and Northern Affairs Canada (INAC) estimated that there was a shortage of about 8,500 houses on reserves and about 44% of the existing 89,000 houses required renovations. The growth rate of the on-reserve population is twice that of the Canadian average, with more than half the population under 25 years of age.¹⁶

In 2001... there were about 89,000 housing units on reserves to accommodate about 97,500 households, a shortage of 8,500 units. In addition, around 44% of existing units required renovations. About 4,500 new households are expected to be formed every year for at least the next 10 years. Current federal funding is expected to support the construction of about 2,600 houses and the renovation of about 3,300 houses a year.¹⁷

In 2005, INAC is describing the situation as follows:

According to the most recent census, about 12% of houses in First Nation communities are overcrowded, compared to one percent elsewhere in Canada. Data, as of March 31, 2005, indicates that of the almost 96,800 houses in First Nation communities, more than 21,200 (21.9%) are in need of major repairs and about 5,500 (5.7%) need to be replaced.¹⁸

Estimates of the backlog in units vary. The Assembly of First Nations (AFN) estimates the backlog at 80,000 units¹⁹, at the upper end of the range. The estimates vary from guesswork to figures based on modelling, because they do not reflect the actual numbers of families on the waiting lists held by First Nations housing authorities. Despite this limitation, few would dispute that the backlog numbers in the tens of thousands.

The survey nature of the RHS makes it unable to count the number of housing units or estimate the need for additional housing units. However, it is able to provide an indirect measure of housing need by measuring occupant density, a term which refers to the number of people residing in a house or per room of a house. Occupant density is sometimes described as “crowding.” When there are too many people in a house the term “overcrowding” is sometimes used.

A house where the density exceeds one person per room is considered overcrowded.^{vi} The 2001 Census suggests an overall Canadian room density of 0.4 persons per room. The RHS suggests a mean room density rate in First Nation

^{vi} The occupant density of a house is simply the number of people in the household divided by the number of rooms. The RHS uses the accepted 1.0 crowding index and the accepted conventions for which rooms to count or not to count: kitchens, bedrooms, living rooms, and finished basements. Bathrooms, halls, laundry rooms, and attached sheds are not counted.

communities of 0.76 persons per room, almost double the general population rate.

Table 11. Average occupant density (persons per household), First Nations houses vs. Canadian houses

	Census					2003 (RHS)
	1981	1986	1991	1996	2001	
First Nations			3.5			4.8
Canada	2.9	2.8	2.7	2.6	2.6	

The 2001 Census (Table 10) suggests that the average occupant density among houses in Canada today is about 2.6 persons per house. The RHS estimates the occupant density of First Nation houses at almost double (4.8 persons) that of houses in Canada overall (about 2.6 persons). Furthermore, the density in the First Nation context appears to be increasing, while in the mainstream context the density has been declining over two decades. In some instances the number of occupants in First Nations houses can be very high. The largest number of occupants recorded by the RHS is 18.

Table 12. Percentage estimates of overcrowding by community size category (n=10,545)

<300 persons	300–1499 persons	1500+ persons	Total
12.6%	15.5%	21.4%	17.2%

Table 12 shows that 17.2% of First Nation houses meet the definition of overcrowded.^{vii} Moreover, of all households with children, nearly a quarter (24.6%) were overcrowded. There is a strong inverse correlation between community size and overcrowding of housing; the largest communities exhibit an overcrowding rate almost double that of the smallest. The answer to this may lie in the methodology used by INAC to determine the distribution of capital construction funding. Whether this or another reason is the determinant, the connection between crowding and community size is a question worthy of further research.

Basic Infrastructure and Amenities Found in Homes

RHS provides household level information for two important socio-sanitary indicators of special relevance in Public Health: waste disposal and water quality. Community infrastructure, more broadly, will be addressed in an RHS community-level (“ecological”) survey, which is currently being completed.

Garbage Collection Services

More than one fifth (21.8%) of adults report that they have no access to garbage collection services. Access to garbage services varies by the remoteness of the community. Proportionately, the fewest people lacking garbage services are in remote-isolated communities (7.5%). The poorest level of access to these services is in isolated communities (38.1%). Semi-isolated communities show a 13.0% no-access rate and non-isolated communities show a 19.8% no-access rate.

The RHS does not allow us to explain this geographic pattern. The garbage disposal possibilities for the 21.8% of homes without garbage service include self-transporting garbage to a garbage site, periodically paying someone to remove the garbage to a garbage site, disposing of the garbage on the property, or no community garbage site at all. The public health implications of the 21.8% of homes without garbage collection service strongly imply further investigation. It would be interesting to see the extent to which nearby off-reserve communities also lack this service.

Sewage Service

The RHS indicates that 9.0% of homes in First Nation communities lack either a septic tank or sewage service. The association with community remoteness parallels that seen for garbage services; homes in isolated communities are many times more likely to be lacking a septic tank or sewage service than those in other types of communities (Table 13).

Table 13. Presence of septic tank or sewage service waste disposal by remoteness factor (n=10,332)

Remote-isolated	Isolated	Semi-isolated	Non-isolated
12.1%	29.5%	8.0%	5.0%

Water Supply and Quality

The RHS points to large variations in the confidence First Nation people have in the safety of their domestic water supply. Only two thirds of respondents (67.8%) consider their water safe to drink (Table 14).

Those people who draw water themselves from a river, lake, or pond are most likely to consider their water safe (80.3%, NS). Their choice of this water source may, or may not, be based on distrust of other water sources in the community. Water delivery by pipe from a local or community source is the primary source for the majority of respondents (63.2%). Of those, only 71.4% consider their water safe to drink, despite the fact that the water has presumably been treated.

^{vii} The RHS Adult Preliminary Report gives a higher overcrowding figure of 24.6%. This previous figure only included on households with children. The 17.2% figure report here is correct in the current context, that is, all households.

Table 14. Perception of water safety by source of supply

Water Supply	Source of drinking water							Total
	Piped in - local or community water supply	Trucked	Well - Individual or shared	Collect it yourself from river, lake, or pond	Collect it yourself from water plant	From a neighbour's house	Other	
Proportion	63.2%	15.9%	16.5%	0.9%	1.8%	0.7%	1.1%	100%
Felt that source was unsafe	71.4%	59.0%	63.4%	80.3%	65.6%	-	36.6%	67.8%

Although the main water supply may be piped water, based on a different question, we find that the main source of *drinking* water for First Nation people is bottled water (61.7% of respondents). This might be viewed as further testament to distrust or other concerns about the main water source. It would be interesting, in a future study, to correlate this seemingly reliance on high bottled water with other factors such as stomach problems and the availability of water from different sources.

It is a fact that “boil water advisories” are in effect in many First Nation communities. These advisories are issued upon evidence of actual bacterial, chemical, or mineral contamination beyond a threshold level. The number fluctuates as problems arise and may be addressed. The “official” numbers are politically charged, and indeed uncertain, since the evacuation of the Ontario Cree community of Kashechewan in October 2005. Media reports such as the following attest to the level of public interest:

A report based on Health Canada data that shows 30% of Ontario's First Nations reserves are under boil-water advisories actually understates the extent of the problem, the leader of the province's New Democrats said Thursday. The Ministry of Natural Resources released data showing 37 of the 123 Ontario native reserves surveyed by Health Canada have boil-water advisories in place, some going back as far as February 2002.²⁰

We can say that there are serious and widespread problems in First Nations water systems. One of the more credible reports is a 2003 study by INAC. This concluded that 16% of community *waste* water systems are at high risk of contaminating community drinking water systems. Another 44% were medium risk. “Less than” 10% of communities had “boil water advisories” in effect, nonetheless a high percentage. The same study found that 39% of total assessed water systems exceeded one or more of the risk indicator thresholds “occasionally or continuously.”²¹

Almost the same percentage (32.2%) of RHS respondents consider their drinking water unsafe. However, until the data are analysed further we cannot link these respondents with the communities where the risk is found to be high based on laboratory or other assessments. Nor can we say, yet, whether the 7.9% of respondents who boil their water are

concentrated in these communities. We can say that 7.9% seems low in light of one-sixth of communities being advised to boil their water; the answer may be in the population distribution of these communities.

Table 15. Homes with “necessary amenities” and “telecommunications amenities”

Amenity	Percentage of homes with and (without) amenity
“Necessary amenities”	
Hot running water	96.3% (3.7% without)
Cold Running Water	96.5% (3.5% without)
Flushing toilet	96.5% (3.5% without)
Refrigerator	98.7 % (1.3% without)
Stove for cooking	99.3% (0.7% without)
Electricity	99.5% (0.5% without)
“Telecommunications amenities”	
Telephone with service	81.7% (18.3% without)
Internet connection	29.3% (70.7% without)
Computer	40.8% (59.2% without)

The RHS captures whether First Nations households have certain amenities which Canadian society, as a whole, considers necessities (Table 15). Almost all (99.5%) homes were reported to have electricity. It would be interesting to know how many of these homes rely on electricity from the public grid, from a local diesel plant or from a home generator. Practically all homes reporting electricity also have a refrigerator and cooking stove.

It is encouraging that 96.3% of homes reported hot running water and 96.5% reported cold running water, although we must temper this optimism against the fact that over 3% of homes have no running water at all. The percentages of homes with running water include homes with mains water supply, homes with well water supply and homes with

trucked water stored in an indoor tank. Running water would almost certainly be drawn by an electric pump in the cases of trucked and well water. It is thought that nowadays very few First Nation homes in organised communities still obtain their water manually, but this is probably another matter in the case of homes situated in the bush.

A high percentage (96.5%) of homes reported having a flush toilet. We presume that the remaining 3.5% have indoor chemical toilets, primitive indoor solid waste arrangements, or outdoor privies. Increasing the prevalence of indoor flush toilets is another area where great strides have occurred in recent decades. Progress in this area reduces sewage-related public health risks, such as gastro-enteritis, which for decades were very problematic in some First Nation communities.

The RHS suggests that income has practically no bearing on whether a home has the “necessary amenities” shown in the table above. These necessities of life are usually provided in “government housing” as well as in band and other social housing. Otherwise, income assistance, such as social assistance and pensions, probably ensure that almost all First Nation households possess these necessary amenities.

The telecommunications amenities (telephone, Internet, and computer) are essential from the perspective of participation in the modern economy.^{viii} Unlike the so-called necessary amenities, possession of the telecommunications amenities depends strongly on household income. This stands to reason considering the relative prevalence of poverty and the fact that these items are seldom furnished through assistance programs. Computer ownership is strongly correlated with income. Only 21% of homes with income under \$10,000 have computers; this rate rises steadily through the other income categories to 81.6% of homes with income over \$80,000.

The low-seeming 29.8% Internet connectivity figure, shown in the table above, has strong determinants other than household economics; many First Nation communities are far away from Internet service providers and many communities lack broadband services. Table 16 shows the following proportion reporting Internet access in different types of communities: remote-isolated communities (15.5%), isolated communities (20.8%), semi-isolated communities (26.1%) and non-isolated communities (32.4%). The Internet and computer possession percentages for remote-isolated communities are half the corresponding percentages for non-isolated communities. For those communities where Internet is available, home Internet access is strongly related to income and, of course, to possession of a computer.

Table 16. Necessary amenities and telecommunications amenities by remoteness factor

	Percentage Estimates of Amenities by Remoteness Factor				
	Remote-isolated	Isolated	Semi-isolated	Non-isolated	Total
Necessary Amenities					
Hot running water	97.1%	83.2%	98.1%	98.6%	96.2%
Cold running water	97.2%	83.9%	97.6%	98.8%	96.4%
Flushing toilet	96.8%	84.4%	98.1%	98.7%	96.4%
Refrigerator	99.0%	95.5%	97.6%	99.4%	98.7%
Stove for cooking	97.1%	98.2%	98.6%	99.6%	99.3%
Electricity	99.8%	98.7%	98.0%	99.8%	99.5%
Telecommunications Amenities					
Telephone with service	65.6%	76.7%	75.6%	83.9%	81.8%
Internet connection	15.5%	20.8%	26.1%	32.4%	29.8%
Computer	22.2%	32.0%	31.6%	44.7%	41.4%

More than three quarters (77.3%) of households in First Nation communities report that their homes have a working smoke detector. This is higher than the 70% “Aboriginal” figure for all Aboriginal people reported in of the 1991 Aboriginal Peoples Survey (APS), but it is not possible to say whether the difference represents change over time or the fact that the APS included people living outside of First Nations communities. Only 18.2% of First Nation homes have a carbon monoxide detector. The risk associated with this low figure is not necessarily high; it depends on whether combustion-based appliances (e.g. wood stove, oil furnace or water heater) are in use. The RHS indicates that less than half (47.5%) of homes in First Nation communities have a fire extinguisher.

Indoor Air Quality and Health

The quality of air inside a dwelling affects the health of the occupants. For over a century, the Indian health service limited its concerns over indoor air quality to the effect of overcrowding in the spread of contagious diseases. Tuberculosis (TB) was the focus of this concern. Interestingly, the RHS indicates that of the 2.9% diagnosed with TB, almost one in three (31.0%) live in a technically overcrowded house. Although TB remains a feared disease, it is not the only disease whose spread is aided through situations with multiple people living in close quarters. The common cold and common influenza are obvious examples. The spread of shigellosis and hepatitis A are also associated with overcrowding, including in the First Nations context.²²

^{viii} See the RHS Adult Preliminary Report for a discussion of the “digital divide.”

Nevertheless, the RHS figure of 31.0% of once-diagnosed TB sufferers living in overcrowded houses is food for thought. Active cases of this disease, almost unheard of in the general population, still flare up in First Nation communities. When this happens, crowded housing conditions make the containment efforts of Public Health officials all the more difficult.

Notwithstanding that the spread of TB is still more likely in overcrowded dwellings, the field of Public Health nowadays accepts that environmental contamination of indoor air is a significant health determinant. This concern recognises the fact that most people spend most of their time indoors. The indoor tendency of modern society is a factor in the increasing prevalence of respiratory conditions. Recent rises in asthma affliction and allergies are particularly noteworthy.²³ The RHS measures certain indoor factors with potential to cause respiratory problems. Before discussing these statistics, we must balance the role of home contamination in this trend against the role of air pollution generally.

First, the average house offers little protection against aerosol, particulate, and gas contamination of the general air. Take, for example, Fort Frances in Ontario, where chimneys of paper mills release gases such as hydrogen sulphide. Portions of the town and the adjacent First Nation community often experience foul-smelling air. Quite simply, the air stinks indoors as well as out. This is hardly an isolated example. Also, particularly in southern Canada, weather conditions can create high concentrations of smog at ground level. The more extreme smog events have been correlated with increased reporting of respiratory problems, including higher respiratory-related inpatient and outpatient admissions. Fortunately for First Nations, the majority of the First Nations population resides in comparatively remote communities outside of main smog zones. This suggests a greater potential role of home contamination in statistics about First Nations respiratory ailments.

We do not know, because it has not been tried, whether the RHS can correlate respiratory and other ailments with living in communities where industrial pollutants are a particular problem. This is a research area worthy of exploration, following collection of data from the community-level survey currently underway. This is not specifically an indoor environmental health question, but it would be valuable to isolate the effects of contaminants of indoor origin from those of outdoor origin.

The groups considered most vulnerable to outdoor and indoor air pollution are the elderly, young children, and the chronically ill. This vulnerability is partially explained by clinical factors like fitness, resistance, and pre-existing conditions. These groups also tend to spend the vast majority of their time at home exposed to whatever contaminants are there.²⁴ The RHS does capture some chronic ailments, like general allergies and bronchitis, by age. These can be

correlated by geography and other factors. Nearly one in five (18.3%) of adult respondents report allergies and one in ten (9.7%) report asthma. The effects of indoor air quality in exacerbating these conditions requires further research because the RHS did not gather detailed information on all the factors influencing those conditions. For instance, the RHS could not incorporate air testing for any of the indoor environmental contaminants associated with chronic or acute respiratory or other conditions. We could not measure the pet detritus, such as hair and skin cells, responsible for allergies to pets. Likewise we could not sample building materials which can be problematic in cases of contact allergy, or which emit vapours. These may create responses in all residents or just individuals with sensitivities. It is also possible for chronic exposure to lead to sensitivity.

The RHS inquired about the presence of two major indoor contaminants, moulds and cigarette smoke (as indicated by whether smoking occurs in the house). In this chapter we consider the mould question. Smoking is another indoor contaminant, which is addressed elsewhere in other chapters of this RHS Report.

Toxic moulds, a contaminant of indoor air, are common and persistent in houses across Canada.²⁵ The moulds of special concern are those which live in, or on, the structure of the building itself. Some are similar to the familiar bread mould or blue cheese mould, but structural mould problems are not the result of food mould getting out of control. The spores are all-pervasive in trace concentrations. The question is whether the house's structure offers them a good environment to "take" and to multiply into problem concentrations. Some moulds can produce allergens, irritants, or toxins singly or in combination. Rhinitis, asthma, alveolitis and other allergies are associated with moulds. So too is decreased immunity which may lead to sensitivity and to secondary afflictions. Sensitive individuals are prone to eye and throat irritation, fatigue, and headache.^{26, 27}

Mould can make a house uninhabitable to persons with or without sensitivity. Municipal and provincial Public Health authorities periodically declare houses unfit for habitation due to high measured mould concentrations. In such cases they sometimes issue orders to vacate. These standards and measures do not apply on reserves, probably in large measure because First Nation community health authorities usually lack the ability to test for mould concentrations in the air. Besides, such evacuation orders mean nothing if no alternative accommodation exists; the inhabitants of mouldy houses on reserves seldom have the option of relocating.

Moulds need warmth, moisture, still air, and a food source. Many can metabolize organic building materials such as wood beams, plywood, and even wallpaper. Homes with high humidity levels and water seepage are ideal places for moulds to grow. Therefore, while homes in poor overall physical condition tend to be the ones with mould problems, age and dilapidation of a house does not always result in

mould. In order to have a mould problem the house foremost has to have a moisture problem.²⁸ As discussed earlier, the RHS suggests that two thirds of houses in First Nation communities require major or minor repairs. This hints at a higher risk of problem levels of mould. The RHS does not capture evidence of elevated moisture levels in homes, but a future RHS could, because moisture questions can be easily answered.

It is impractical to eliminate all growing mould and its spores from a house. The best way to control indoor mould is to control the moisture level, but a house may be so severely mould-ridden that expensive physical removal of contaminated materials is necessary. Usually this also requires costly measures to lower the humidity level, including stopping the entry or puddling of water. Sometimes the cost is uneconomic compared with demolition and rebuilding. It is typically difficult to find the money needed to correct mould problems or to relocate or demolish and rebuild. The usual result is continued habitation and suffering the health implications of mould.

The moulds with adverse health effects are typically able to survive for years in a dormant state, as spores, if the conditions are dry. Expensive corrective measures can still leave an intolerable level of dormant spores in dry air. These will bloom and grow as soon as the indoor humidity increases. Seasonal basement seepage is a common reason for mould to reach problem concentrations again. So too is inadequate ventilation coupled with bathing and cooking. Many First Nation homes are too old or rudimentary in design to have proper vents, extraction fans, or even strategically placed windows which can be opened. Particularly in remote communities, over-clothes, boots, and laundry are commonly hung to dry around a wood stove or over heat registers. This significant source of humidity arises from practical necessity and cultural norms. Likewise, steaming kettles and pots are a constant feature of many First Nation households. Sometimes it is necessary to heat large quantities of water over a stove in the absence of a water heater. This would be a useful data item for a future RHS to capture.

Problem concentrations of mould in First Nations housing have been documented in many communities over the years. So too have elevated rates of respiratory diseases such as bronchitis and asthma. The truth remains that there are factors other than mould that are able to cause respiratory diseases such as these. This, and a disconnect between those with the clinical medical data and those who would use it to test for mould-disease linkages, mean that there is little empirical evidence in the public realm about mould toxicity in First Nation houses. It is therefore easy for the federal players in the First Nations housing sector to downplay or ignore complaints about prevalence of mould.

Not many medical studies, anywhere, have drawn a direct link between mould, poor physical condition of the housing,

and specific respiratory ailments. The toxic respiratory affects of moulds are accepted; what is not as clear is how these moulds influence specific respiratory conditions rather than general respiratory health. One quantitative 2001 survey, of the Cree community of Chisasibi in Northern Quebec, is revealing. The survey revealed that over half of the “problem” homes studies had structural problems, and that there was an average of 7.2 people per house who often shared one bathroom. The health questionnaire found a strong association between the presence of moulds and health problems of an acute and chronic nature. The authors were able to reasonably conclude that “measures to reduce mould problems in houses are urgently required, and may lead to improved acute and chronic health of Chisasibi residents.”²⁹

Almost one half (48.5%) of the RHS respondents who reported living in band-owned housing reported mould or mildew^{ix} in their home. Recall that two thirds of respondents report living in band-owned homes. A significantly lesser percentage (36.9%) of respondents in other types of accommodation reported mould or mildew. Does this mean that band housing, which is predominantly social housing for lower income people, has more mould or mildew? It appears so, although we can only speculate at the reasons. A likely part of the explanation might be a tendency of communities to use scarce funding to build new units at the expense of construction quality or essential maintenance. This would be an interesting hypothesis to test, but additional data would be needed.

Finally, the RHS captures respiratory conditions data (e.g., incidence of asthma) which can be correlated against data about housing conditions (e.g., crowding, mould or mildew, necessary repairs), but we are reluctant to draw any conclusions based on preliminary cross-sectional study. The reason is that we do not want to issue statistics that should not be read in isolation from others, but we can say that the RHS data raise fascinating questions about respiratory health.

Caution: these are tabulations and not necessarily actual relationships between data items. We give these examples only to illustrate that interesting results suggest a need for further research. For instance, although less than 10% of respondents report suffering from asthma, 43.5% of those sufferers report mould or mildew in their home. The RHS indicates that 18.3% of adult respondents report allergies. Almost a quarter of these adults were over age 50. This should not be interpreted without considering the proportion of people with allergies in mouldy houses vs. proportion without allergies in mouldy houses. Only 3.2% of

^{ix} It is uncertain whether respondents knew the difference between mould and mildew. Moulds that generate the indoor biotoxins are of greater concern. A future RHS could explain, in the survey instrument, what a mould looks like.

respondents report chronic bronchitis, but 52.2% of these people reported mould or mildew in their homes.

But what should we compare this with: the percentage of persons without bronchitis? Would this be statistically different? Is there a link medically between chronic bronchitis and mould? Are the proportions who have mould and mildew significant among those who do have a disease and who do not? These are among the useful questions that further analysis of the RHS data can help answer.

Notes to Chapter 3

1. http://www.phac-aspc.gc.ca/ph-sp/phdd/case_studies/appendix_1/analysis.html. Accessed 15 October 2005.
2. NAHO, *Evidence-Based Decision Making Framework*, unpublished [online]. 2002. Available from World Wide Web: <<http://www.naho.ca/firstnations/english/fdq.php>>.
3. Royal Commission on Aboriginal Peoples, "Housing," *Report of the Royal Commission on Aboriginal Peoples, Vol. 3* (Ottawa, Ont.: Royal Commission on Aboriginal Peoples, 1996). **Note:** Although written a decade ago, this chapter still provides the best overview of the on-reserve housing landscape, including a useful discussion on social housing.
4. • Andrew Webster, *Trends and Growth Factors in First Nations Social Assistance*, report prepared by Atelier Pika Ltd. for the Department of Indian Affairs and Northern Development, 1996.
• Four Directions Consulting Group, *Implications of First Nations Demography—Final Report*, report prepared for Indian and Northern Affairs Canada [online]. [Gatineau, Que.]: Indian and Northern Affairs Canada, 1997. Accessed 2 November 2005. Available from World Wide Web: <http://www.ainc-inac.gc.ca/pr/ra/execs/serv-2_e.html>.
Note: See *Trends and Growth Factors in First Nations Social Assistance* for an exhaustive discussion on the dependency problem. The grim social assistance forecasts in that work are further illustrated in *Implications of First Nations Demography—Final Report*.
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Chapter 4

Disability and Chronic Conditions

Abstract

This chapter explores disability and long-term health conditions among First Nations adults 18 years and older.

The research found that there is a higher prevalence of disability among First Nations adults than in the general adult population in Canada. Disability becomes more common as First Nations people age. First Nations adults with disabilities generally fare less well than their counterparts without disabilities in terms of formal educational attainment, income, employment and health. They fare considerably less well in these areas than the broader adult population in Canada.

First Nations women with disabilities are about as likely as First Nations men with disabilities to report fair or poor health. Older First Nations adults with disabilities and adults with disabilities and low personal incomes are more likely than younger people and people with higher incomes to report fair or poor health. Like their counterparts without disabilities, First Nations people with disabilities report good diet, social supports, sleep, being happy/content and reduced stress among the factors that contribute to excellent or very good health. They are less likely to report physical activity or participation in sports.

The most prevalent long-term health conditions facing First Nations adults with and without disabilities are arthritis/rheumatism, chronic back pain, allergies, diabetes and high blood pressure. These are also leading long-term health conditions in the general adult population in Canada. First Nations women are more likely than their male counterparts to report multiple long-term health conditions. When age-adjusted by gender, arthritis/rheumatism, high blood pressure, asthma and heart disease appear to be more prevalent among First Nations adults than in the Canadian population overall.

First Nations adults with disabilities are more likely than their non-disabled counterparts to face a range of barriers and other difficulties gaining access to health-related services. Cost, affordability and lack of coverage by publicly funded programs are widespread issues. Women with disabilities face particular difficulties concerning access to health services. The chapter concludes with recommendations.

Note: Due to spacing issues, some tables have been placed at the end of the chapter.

Introduction

Chapter overview

This chapter explores disability and long-term health-related conditions among First Nations and Inuit adults 18 years and older. It looks at general demographics (e.g., prevalence of disability, gender, age, marital status, education, employment, income, general health) as well as specific health-related conditions and issues of access to health-related services. The chapter provides selected comparisons of First Nations adults with and without disabilities, as well as comparisons with the broader adult population in Canada.

The chapter draws statistical data from the First Nations Regional Longitudinal Health Survey (RHS) of 2002–2003, the Canadian Community Health Survey (CCHS)ⁱ of 2003, the National Population Health Survey (NPHS)ⁱⁱ of 1998–99, and, to a limited extent, the Participation and Activity Limitation Survey (PALS) of 2001 and the Health and Activity Limitation Survey (HALS) of 1991.ⁱⁱⁱ

For comparisons between First Nations adults and other adults in Canada, the research provides tables that show results for the RHS, CCHS and NPHS. The discussion focuses on the CCHS for points of comparison because this is a more recent survey than the NPHS.

Working definition of disability

For the RHS, the research defines respondents 18 years and older as having a disability if they said that, because of a physical or mental condition or health problem, they are limited in the kinds or amount of activity they can do at home, work or school, or in other activities such as leisure or travelling. Respondents could indicate that they feel limited “often” or “sometimes.” For the CCHS the research defines respondents 20 years and older^{iv} as having a disability if they said the amount or kind of activities they can do at home, work or school or other activities (such as leisure or travelling) has been reduced because of a long-term health condition or problem. Again, such reductions of activity may occur “sometimes” or “often.” For the NPHS, respondents 20 years and older^v are defined as having a disability if they said that, because of long-term physical or mental condition or a health problem, they are limited in the amount or kind of

activity they can do at home, school, work or in other activities (such as transportation to or from work or school, or leisure time activities) or if they said they have a long-term disability or handicap. The NPHS did not ask whether respondents were limited “sometimes” or “often.” Most respondents who indicated that they had a long-term disability or handicap also reported an activity limitation on one of the other questions.^{vi} The CCHS and NPHS define a “long term” condition as one that has lasted or that is expected to last six months or more. The RHS did not stipulate that the activity-limiting condition had to be long-term.

These surveys all use somewhat different approaches to flagging respondents as having disabilities. The federal Office for Disability Issues has developed a helpful document that explores some of the complex differences in survey design and how these play out in terms of disability estimates.¹ Subtle differences in broad-level disability indicators include the RHS and NPHS asking whether respondents *are limited* in the amount or kind of activity they can do, whereas the CCHS asks whether a *condition reduces* the amount or kind of activity the respondent can do. Statistics Canada has speculated that respondents may be less inclined to indicate that they are personally limited in activities than to indicate that a condition reduces their activities.²

Other disability variables are available on the RHS and CCHS, which the research has not used to any great extent. The research did not use the general CCHS question that asks respondents whether they experienced any difficulties seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities. The research adopted the present approach because this was the best possible “fit” that could be achieved between the RHS, CCHS and NPHS in terms of disability indicators.

Results

Basic demographics of disability

Prevalence

There are significant challenges to comparing the prevalence of disability among First Nations and other adults in Canada. In part the difficulties are due to differences in the designs and contexts for population surveys such as the RHS, the Census, CCHS, NPHS and PALS. Survey design, context (e.g., whether it is a health-oriented survey, a general Census, a disability-specific survey or a labour market survey) and placement of disability questions (e.g., at the beginning, in the middle or towards the end of a survey) all affect response patterns.

Table 1 provides results based on the RHS, CCHS of 2003 and the NPHS of 1998–99. Unadjusted and age-adjusted

ⁱ The CCHS provides a wealth of information on the health and health-related behaviours of Canadians. The CCHS did not survey people in the northern territories, on military bases, in institutional collective dwellings or living on First Nations reserves.

ⁱⁱ The NPHS is the forerunner to the CCHS. The research drew from both the General and Health files. The General file has a larger sample but does not provide the detail on health and income available on the Health file. The research used the file that had the largest sample size for any given research question.

ⁱⁱⁱ PALS and HALS are Statistics Canada’s “flagship” surveys with a specific focus on disability. PALS did not survey people in the northern territories, on military bases, in institutional collective dwellings or living on First Nations reserves. HALS did survey people in the northern territories.

^{iv} In the CCHS public use file, respondents are grouped into 5-year age categories. The research selected 20–24 as the youngest age group on that data set. The public use file does not facilitate disaggregating 18–19 year-olds from the 15–20 age group.

^v The research followed the same approach to age cut-off in the NPHS as with the CCHS.

^{vi} The NPHS public use file does not allow for disaggregation of the question on handicap or disability from the questions on activity limitations.

totals are provided for First Nations adults.^{vii} Age adjustment provides a more accurate picture because the age structure of First Nations adults is considerably different than that of the general population. Among First Nations adults, only 23.0%^{viii} are 50 years or older compared with 35.2% in the general population. Totals not adjusted for age reflect a bias towards younger First Nations adults, amongst whom the prevalence of disability is relatively low.

Table 1 shows that the age-adjusted prevalence of disability amongst First Nations adults ranges between 27.8% and 28.4% and between 1.1 and 1.6 times the prevalence of disability in the general population.

The NPHS rather than CCHS figures for general prevalence of disability are likely more comparable with the RHS because the “high level” disability questions asked on the NPHS are more similar than those in the CCHS to the questions asked in the RHS. Like the RHS, the NPHS asked whether, because of a long-term physical, mental or health condition, respondents *are limited* in the kind or amount of activity they can do at home, school or work or in other activities such as leisure or travelling. The CCHS asked whether respondents feel that a long-term *condition reduces* the kind or amount of activity they can do in such situations.

Using unpublished data based on disability questions from the 2001 Census, Social Development Canada’s Office for Disability Issues (ODI) recently reported that the age-adjusted prevalence of disability is one and a half times higher amongst Aboriginal people than in the general adult population in Canada.^{3xi} That finding is in keeping with the figures using the NPHS as the comparator as shown on Table 1 (end of chapter).

ODI also reported higher prevalence of disability among Aboriginal peoples based on the disability questions in the Canadian Community Health Survey of 2001.⁴ Statistics Canada’s flagship survey on disability, that is, the Participation and Activity Limitation Survey (PALS) of 2001, did not include enough First Nations, Inuit or other Aboriginal people in its sample to allow for comparative analysis of disability among First Nations people and the general population. However, an earlier report based on the Aboriginal Peoples Survey of 1991 and the Health and Activity Limitation Survey (HALS) of that year, which was the forerunner to PALS, also found significantly higher prevalence of disability among First Nations and other Aboriginal peoples.⁵

Age and gender and disability

Disability becomes more common as people age. For example, roughly half (49.7%) of First Nations people in the 60 + age group have a disability,^{xii} compared with 13.1% in the 18–29 age group (Table 1). In part, the increase of disability with age is due to increased exposure to factors that place people at risk of disability across the lifespan, such as accidents, the natural aging process, illnesses and other conditions (e.g., arthritis, heart conditions and progressive hearing loss).

Roughly the same proportion of women and men report disabilities (24.6% of First Nations women have disabilities compared with 21.2% of First Nations men (NS)).^{xiii} Table 2 shows the prevalence of disability by gender after age-adjustment in contrast to the results for the CCHS and NPHS results for the Canadian population overall.^{xiv}

Table 2. Prevalence of age-adjusted disability among First Nations and other adults in Canada, by gender

Gender	First Nations (RHS)	Canada (CCHS)	Canada (NPHS General file)
Male	25.7%	23.2%	18.3%
Female	31.3%	28.2%	20.3%
Total	28.5%	25.8%	19.3%

Marital status

Table 3 shows the marital status of First Nations adults. It shows that a lower proportion of First Nations adults with disabilities are single than is the case among their counterparts without disabilities (27.5% compared with 40%). In part, this finding is likely due to the fact that the onset of disability tends to occur in adulthood for many people, that is, sometime after people have a chance to enter into a long-term relationship with a spouse or partner.

First Nations women with disabilities are particularly likely to be widowed (16.4% compared with 4.4% of all First Nations adults taken together). In part, this finding may be due to the lower life expectancy of men and the late onset of disability among women who are pre-deceased by their husbands/partners. The rate of divorce and separation is similar among men and women with disabilities (9.7% vs. 15.8%; NS) and among men and women without disabilities (8.1% vs. 7.0%).

^{vii} Age adjusted totals were calculated by multiplying the age-specific prevalence rates for First Nations adults by the total numbers of people of those ages in the general population to establish the numbers of people in the general population who would be expected to have disabilities in the age categories based on First Nations’ rates. The expected figures were then added to arrive at the total number of people expected to have disabilities in the general population if the rates for First Nations adults prevailed. We then divided that total by the total adult population 20 years and older. This approach was replicated using the CCHS and the NPHS.

^{viii} To simplify the text, confidence limits are only reported for overall adult estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

^{xi} The term “Aboriginal people” as used by ODI includes First Nations, Métis and Inuit people.

^{xii} That estimate is likely conservative. Unpublished data received from ODI based on the Census of 2001 indicates disability prevalence of 60.3% among First Nations seniors 65 years and older and 54.4% among Inuit seniors in this age group.

^{xiii} Comparisons between groups reported in this chapter are all significant unless “NS” —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

^{xiv} Reported differences between First Nations (RHS) and for Canadians overall could not be assessed for statistical significance as confidence intervals were not available for the Canadian estimates. Relative statements about differences between First Nations and Canadians should be interpreted cautiously, particularly when the estimates are close or the groups are small.

Table 3. Marital status of First Nations adults, by disability status and gender (%)

	Non-disabled	With disability	Total
Male			
Married	29.1	36.2	30.6
Common-law	19.8	16.6	19.1
Widowed	1.1	5.2	2.0
Separated/ divorced	7.0	9.7	7.6
Single/ never married	42.9	32.3	40.7
Total	100.0	100.0	100.0
Female			
Married	31.6	28.3	30.8
Common-law	19.6	16.4	18.8
Widowed	3.8	16.4	6.9
Separated/ divorced	8.1	15.8	10.0
Single/ never married	36.9	23.1	33.5
Total	100.0	100.0	100.0
All			
Married	30.3	32.0	30.7
Common-law	19.7	16.5	19.0
Widowed	2.4	11.1	4.4
Separated/ divorced	7.5	12.9	8.8
Single/ never married	40.0	27.5	37.2
Total	100.0	100.0	100.0

Education

Taking less than high school graduation as an indicator of low formal educational attainment, Table 4 (end of chapter) shows that the spread in educational attainment between adults with and without disabilities is not so pronounced among First Nations adults as in the general population. For instance, in the 30 – 59 age groups, First Nations adults with disabilities are about as likely as their non-disabled counterparts to have less than high school graduation. In the general population in these age groups (CCHS), adults with disabilities are between 1.3 and 1.4 times less likely to have graduated high school. Overall, First Nations adults with disabilities fare less well in terms of educational attainment than adults with disabilities in the general population.

The less pronounced spread in educational attainment between First Nations adults with and without disabilities occurs in a context where educational attainment is lower overall for First Nations adults compared with adults in the general population. This suggests that First Nations people, regardless of disability, face considerable challenges in securing formal education.

Income and employment

Income

Canadians with disabilities tend to have lower personal incomes than others and are more than twice as likely to be living below Statistics Canada's Low-Income Cut-Off (LICO),^{xv} an unofficial measure of household poverty.⁶ Table

5 (end of chapter) shows that First Nations adults with disabilities have less personal income on average than their non-disabled counterparts. Some 58.7% of First Nations people with disabilities had personal incomes of less than \$15,000 or no income in the year before the RHS was conducted. The same was true for 46.9% of First Nations adults without disabilities. Taking adults with disabilities in the general population as the baseline, First Nations adults with disabilities are 1.7 times more likely to have incomes less than \$15,000 or no income at all.

Employment

The low incomes of First Nations adults with disabilities are in part a reflection of their lower levels of paid employment. Table 6 shows that, consistent with the broad trend in the general population, First Nations adults with disabilities are less likely to be employed than their non-disabled counterparts (37.3% compared with 52.2%). Where employed, they tend to work fewer hours per week (35.5 compared with 38.1 hours on average).^{xvi}

Taking people with disabilities in the general population as the baseline (CCHS), First Nations adults with disabilities are a little more than 0.6 as likely to be employed.

The RHS doesn't enquire into specific factors that, aside from disability, impede the paid employment of First Nations adults with disabilities. Owing to data capture problems Statistics Canada suppressed the PALS 2001 data on issues that discourage the search for work among people with disabilities in the general population. However, the Health and Activity Limitation Survey (HALS) of 1991, provides some useful information. It reveals that the top four reasons why people with disabilities were out of the labour force when HALS was conducted, aside from various and sundry responses that Statistics Canada classified as "other," were concern about loss of current income support, inadequate training, lack of available jobs and concern about loss of additional supports such as housing or drug plans.⁷ Other reasons included family responsibilities, discrimination, lack of accessible transportation, worry about being isolated on the job by other workers, lack of accessible information about available jobs and family/friends who discouraged working.

As well, education level, the need for and availability of various job accommodations, the need for and availability of disability supports such as assistance with daily activities or aids/devices (e.g., for mobility, seeing, communicating), and access to workplaces with intentional strategies to hire, promote and retain people with disabilities, all have a bearing on their employment situation.⁸

It is likely that these and perhaps further factors (e.g., cultural, environmental, geographical, human, technological,

^{xv} I.e., where a household spends 20% more of its income on food, shelter and clothing than an average family of the same size living in a community of the same size. Families that fall beneath the LICO are considered by Statistics Canada to be in "straitsened circumstances".

^{xvi} Some individuals with disabilities may prefer fewer hours of work as a job accommodation.

community size and remoteness) have a bearing on the employment situation of First Nations people with disabilities.

Health status

Disability and general health

Table 7 (end of chapter) shows that First Nations adults with disabilities are nearly four times more likely than their non-disabled counterparts to report that their general health is only fair or poor (45.9% compared with 12.8% respectively).

First Nations adults with disabilities are nearly 1.5 times more likely than adults with disabilities in the general population (CCHS) to report fair or poor health (45.9% compared with 31.1%). Among First Nations adults who report fair or poor health, 51.5% have disabilities.

Disability, health and gender

First Nations women with disabilities are about as likely as First Nations men with disabilities to report fair or poor health (45.5% compared with 46.4%). In the general population women with disabilities are also about as likely as men with disabilities to report fair or poor health (32.2% compared with 29.7%).

Disability, health and age

Table 8 (end of chapter) shows that, at any given age, First Nations adults with disabilities are considerably more likely than their counterparts without disabilities to report fair or poor health. For example, 30.2% of First Nations adults 18 to 30 years old with disabilities report fair or poor health, compared with 11.0% of non-disabled individuals of the same age. Similarly, 64.5% of First Nations seniors 60 years and older with disabilities, contrasted with 18.3% of First Nations seniors without disabilities, report fair or poor health. The same general pattern prevails in the broader adult population in Canada, but in any given age group fair or poor health is not as widespread as among First Nations adults.

Taking the adult population in Canada with and without disabilities in a given age group as the comparator (CCHS), First Nations adults with disabilities are between 2.6 and 6.6 times more likely to report that their health is fair or poor (Table 8, Column C1).

Disability, health and income

Table 9 (end of chapter) shows that, generally speaking, people with higher rather than lower incomes tend to report better health. Among First Nations people as a whole, the relationship between income and general health is systematically linear when looking at the proportions that report fair or poor health. The pattern is not quite so clear-cut when looking at the proportions that report excellent or very good health.

Similarly, among First Nations adults with disabilities, the relationship between income and health is systematically linear when looking at the proportions that report fair or poor health. Sampling variability is too high for First Nations adults with disabilities and incomes of \$50,000 or more to establish a clear connection between income and excellent or very good health for these people.

To some extent, health and income are mutually reinforcing in the sense that the higher the income, the greater the chances people can shield themselves from adverse health effects through proactive prevention, e.g., by means of good and varied diet, safe drinking water, safe and healthful housing and other general living circumstances. There are also greater chances of being able to afford therapeutic measures such as medications and other treatments that may not be covered under programs such as the Non-insured Health Benefits program to stem adverse health symptoms upon diagnosis. On the other hand, the lower the income the less likely that people will be able to avail themselves of preventative and non-insured therapeutic measures.

Accordingly, people with lower incomes tend to be more susceptible to accidents, chronic respiratory disease, pneumonia, tuberculosis and other adverse health conditions.⁹ They tend to have less control over stressors and other personal circumstances, which can compromise the immune and hormonal systems, resulting in adverse health effects.¹⁰

However, even at higher levels of income, there remains a significant health gap between First Nations and other adults in Canada, whether with or without disabilities; lower proportions report excellent or very good health regardless of income bracket or disability status. This finding points to health determinants beyond income that influence First Nations health.

Selected personal determinants of good health

When respondents with excellent or very good health were asked about the things that make them so healthy, First Nations adults with and without disabilities who took part in the RHS were about as likely to report good social supports (60% compared with 59.5% respectively) and good sleep (61.4% compared with 60.6%). Adults with disabilities were slightly, but not significantly more likely to report reduced stress (38.5% compared with 32.4% - NS), being in physical, emotional, mental and spiritual balance (53.5% compared with 49.4% - NS) and good diet (67% compared with 59.2% respectively - NS). First Nations adults were somewhat less likely to report happiness and contentment (60.9% compared with 65.3% - NS) yet were significantly less likely to report physical exercise or being active in sports (38.7% compared with 57.7%).

The present chapter does not explore other health determinants such as non-traditional use of tobacco, specific nutritional intake and physical activities or obesity.

Long-term health conditions

Prevalence by disability status

The RHS asked respondents about long-term health-related conditions that have lasted, or that are expected to last, six months or more and that have been formally diagnosed by a professional. Table 10 provides a summary. The top five most widely reported conditions among First Nations adults are arthritis/rheumatism, allergies, high blood pressure, diabetes and chronic back pain (conditions that are also prevalent in the general adult population).

The RHS also asked respondents whether they are limited in their activities because of any of the conditions shown in the left hand column of Table 10 (end of chapter). In effect, those questions could serve as a further “layer” of disability indicators. The percentages of respondents with activity limitations stemming from each health condition are not shown on the table because there are no similar indicators of condition-specific disability in the CCHS. The general approach to disability that has been used throughout this chapter has been applied to the table, that is, people are classified as having disabilities if they reported limited activities at home, school or work or other situations. The table shows the extent to which people with disabilities (in that sense of the term) reported long-term conditions.^{xvii}

The table shows that First Nations adults with disabilities are more likely than their counterparts without disabilities to report any given health condition presented. Figures for First Nations adults have been age-adjusted by gender.

More than half (52.2%) of First Nations adults with disabilities reported arthritis or rheumatism compared with 14.6% of their non-disabled counterparts. Chronic back pain is about four times more widespread among First Nations adults with disabilities (34.5% compared with 9.6%). Heart disease is about six times more common (18.8% compared with 3.2%) and high blood pressure is more than twice as prevalent (34.7% compared with 14.7%). Long-term stomach and intestinal problems also stand out for First Nations adults with disabilities, who are more than twice as likely as their non-disabled counterparts to report such conditions (16.6% compared with 6.4%). Diabetes, for which a separate chapter has been dedicated, is about twice as common among First Nations adults with disabilities (30.9% compared with 15.3%). Allergies are also considerably more prevalent among First Nations adults with than those without disabilities (25.3% compared with 17.6%), as is asthma (14.6% compared with 9%).

^{xvii} 10.7% of First Nations adults indicated that they have activity limitations stemming from one or more of the long-term conditions shown on Table 10 but did not report activity limitations at home, school or work or other situations due to a long-term health or other condition. The three broad disability questions on the RHS, then, likely understate the full dimensions of disability among First Nations adults.

Prevalence of long-term health conditions by gender

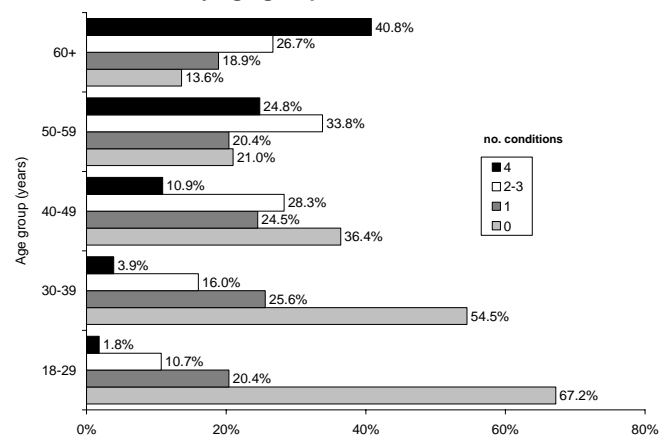
Some 22.3% of First Nations adults reported one of the conditions shown on Table 10. Another 20.1% reported two or three of those conditions and 11.3% reported four or more to a maximum of 14.

First Nations women are more likely than men to be dealing with multiple conditions, with 13.2% of women reporting four or more of the conditions compared with 9.3% of First Nations men.

Prevalence of long-term health conditions by age

Figure 1 shows the increase in the prevalence of long-term conditions by age group. There is an almost perfectly linear drop by age group in the prevalence of those who reported having none of the conditions, declining from 67.2% in the youngest age group to 13.6% among First Nations seniors 60 years and older. Among First Nations seniors, 40.8% reported four or more such conditions compared with only 1.8% in the 18–29 age group. The reporting of two or three conditions increases with age until age 60 and older, after which it is more common that respondents will report four or more conditions. The prevalence of one long-term condition holds relatively constant regardless of age, ranging from 18.9% to 25.6%.

Figure 1. Percentage of First Nations adults reporting long-term health conditions by age group

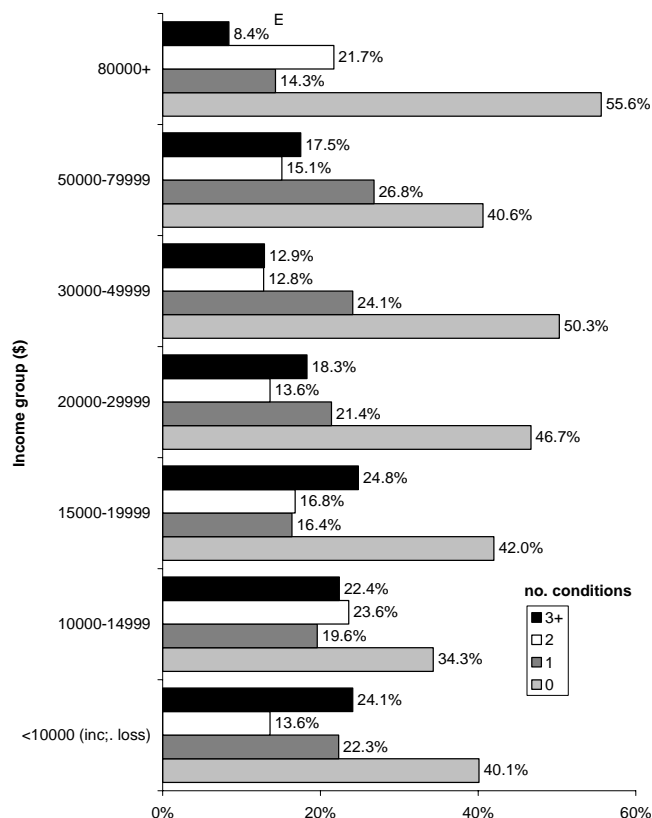


Prevalence of long-term conditions by total household income

Figure 2 shows the prevalence of long-term health conditions by total household income from all sources. Although not statistically significant at each level, overall there is an upward trend in the reporting of “no such conditions” as household incomes increase. For instance, 55.6% of First Nations adults with household incomes in the highest bracket reported no long-term health conditions compared with 40.1% with household incomes of less than \$10,000 (NS). Similarly, although not significant at each level, there is a general but downward trend in the reporting of three or more such conditions as household incomes increase. Among First

Nations adults in households with incomes in the \$80,000+ bracket, 8.4% reported three or more such conditions compared with 24.1% with household incomes less than \$10,000. These findings are consistent with the findings earlier in the chapter that linked better general health with higher incomes.

Figure 2. Percentage of First Nations adults reporting long-term health conditions by total household income



E High sampling variability. Use figure with caution.

Prevalence of long-term conditions by isolation status of community of residence

The RHS flags respondents according to the isolation status of their community of residence. The definitions of isolation status follow.

- Remote isolated: no scheduled flights
- Isolated: flights, good telephone, but no road access
- Semi-isolated: road access, greater than 90 km to physician services
- Non-isolated: road access, less than 90 km from physician services

Although differences between groups are not statistically significant, there is a general trend towards fewer conditions as isolation increases. In non-isolated communities, 55.4% of adults had one or more long-term condition. This compares with 51.2% in semi-isolated communities, 48.6% in isolated communities and 38.9% in remote isolated communities.

This may reflect the need of some people with long-term conditions to move closer to services.

Prevalence of selected conditions by age and gender

Figure 3 shows the prevalence of arthritis, high blood pressure, asthma and heart disease by age group. Totals have been age-adjusted by gender.

Arthritis/rheumatism is a joint disorder featuring inflammation and is often accompanied by joint pain (arthralgia). Forms of arthritis range from those related to wear and tear of cartilage (such as osteoarthritis) to those associated with inflammation resulting from an over-active immune system (such as rheumatoid arthritis). Causes depend on the form of arthritis and include injury, abnormal metabolism (such as gout), hereditary susceptibility, infections and reasons that remain unclear.¹¹ Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints; it can also cause inflammation of the tissue around the joints and of other organs. Autoimmune diseases are illnesses that occur when the body's immune system mistakenly attacks its own tissues. Rheumatoid arthritis is typically a progressive illness that has the potential to cause joint destruction and functional disability.¹² The research grouped RHS respondents who had arthritis or rheumatism.

High blood pressure or hypertension means high pressure (tension) in the arteries. An elevation of the blood pressure increases the risk of developing heart disease, kidney disease, hardening of the arteries, eye damage and stroke (brain damage). Risk factors include excess salt intake, age, obesity, hereditary susceptibility and kidney failure (renal insufficiency).¹³

Asthma is a chronic inflammation of the airways that causes swelling and narrowing of the airways, resulting in difficulty breathing. The bronchial narrowing is usually either totally or at least partially reversible with treatments. Triggers include allergens and irritants (respiratory infections, tobacco smoke, smog and other pollutants, Aspirin, other nonsteroidal anti-inflammatory drugs, physical exercise and various other environmental, emotional and hormonal factors).¹⁴

Heart disease includes any disorder that affects the heart. Sometimes the term is used narrowly and incorrectly as a synonym for coronary artery disease. Heart disease is synonymous with cardiac disease but not with cardiovascular disease which is any disease of the heart or blood vessels. Heart disease includes conditions such as angina, arrhythmia, congenital heart disease, coronary artery disease, dilated cardiomyopathy, heart attack (myocardial infarction), heart failure, hypertrophic cardiomyopathy, mitral regurgitation, mitral valve prolapse and pulmonary stenosis.¹⁵ Risk factors include age, heredity, gender (male sex), tobacco smoke, high blood cholesterol, high blood pressure, physical inactivity, obesity, diabetes, stress and excess alcohol consumption.¹⁶

Figure 3 shows that the prevalence of all these conditions generally increases with the aging of First Nations adults.

The prevalence rates of arthritis and high blood pressure among First Nations adults increase in a linear pattern with increases in age. So does heart disease, although that pattern becomes most noticeable among adults 30 years and older.^{xviii}

Arthritis/rheumatism is more prevalent among First Nations adults than in the general population in Canada (25.3% compared with 19.1% respectively). It is more prevalent among First Nations adults in the 30–39 age group (12.7% compared with 6.6%), in the 40–49 age group (21.4% compared with 13%) and in the 50–59 age group (39% compared with 25.7%).

High blood pressure is somewhat more prevalent among First Nations adults overall when comparing with the general population (20.4% compared with 16.4%). The rates are higher among First Nations adults in the 30–39 age group (7.8% compared with 4.2%), in the 40–49 age group (16.3% compared with 10%) and in the 50–59 age group (30.5% compared with 22.4%).

Asthma is less clearly related to age than the other conditions (Figure 3). The rates ranged between 7.2% and 9.4% among adults younger than 50 years and between 13.3% and 13.4% among older adults. The only significant difference was between the lowest rate (7.2% among 30–39 year olds) and the two highest rates. In the general Canadian adult population, asthma fluctuates between 6.9% and 9.7% among adults younger than 50 years and between 7.2% and 7.7% among adults in the 50–59 and 60+ age groups. Overall, there is a slightly higher prevalence of asthma among First Nations adults than in the general adult population in Canada (9.7% compared with 7.8%).

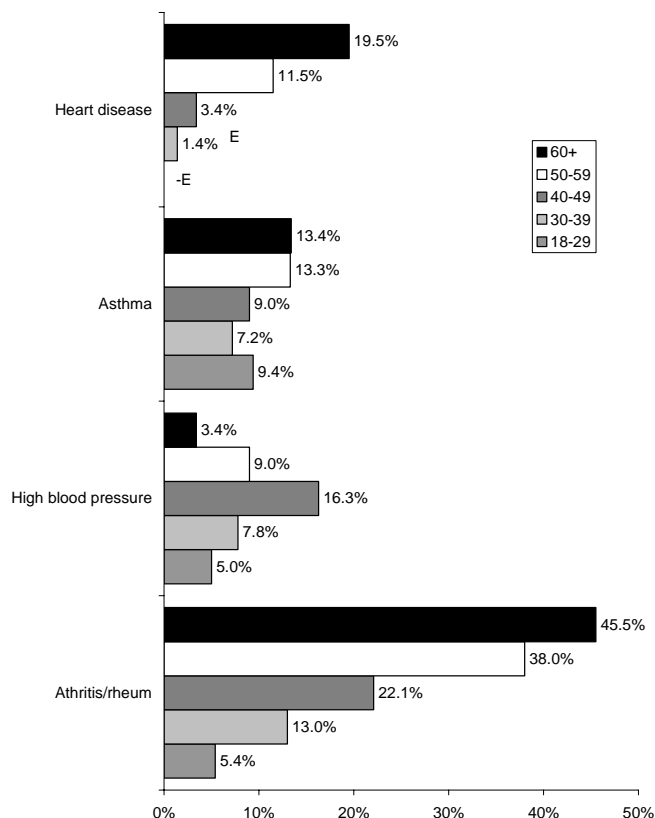
Heart disease is slightly more prevalent overall among First Nations adults than in the general adult population (7.6% compared with 5.6%). However, it is considerably more widespread among First Nations adults in the 50–59 age group than in the general population this age (11.5% compared with 5.5%).

Figure 4 shows the prevalence of the same conditions by age group and gender. First Nations women are more likely than men to report the conditions shown. The somewhat higher proportion of First Nations women than men with heart disease (8% compared with 7.3%) is not statistically significant.

The overall prevalence rates for arthritis/rheumatism, high blood pressure, asthma and heart disease are higher for First Nations women than for women in the general population.

First Nations women are more likely than women in the general population to report asthma (13.2% compared with 8.7%).

Figure 3. Prevalence of selected long-term health conditions among First Nations adults by age group (total age adjusted)

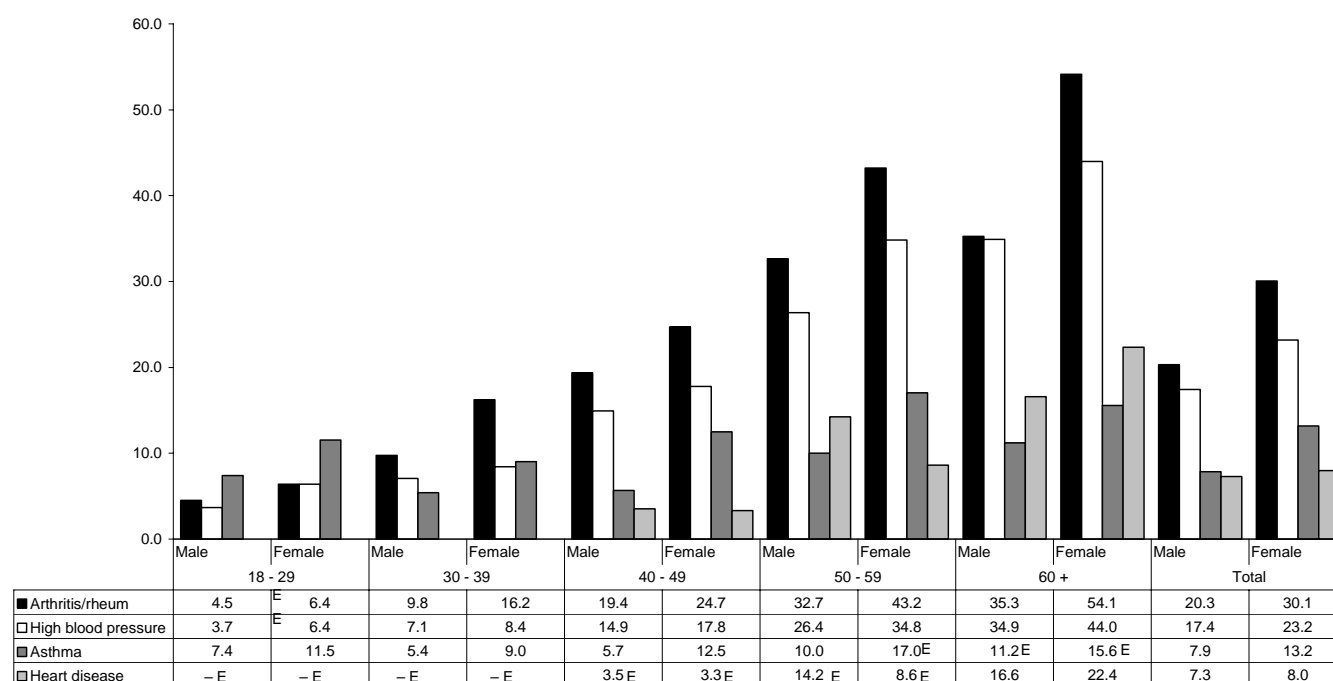


E High sampling variability. Use figures with caution.

- E Sampling variability too high for release of data.

The prevalence of arthritis/rheumatism is higher among First Nations than other women (30.1% compared with 17.4%), with the differences being most notable among women younger than 60 years. For instance, the rates are similar among First Nations and other women 60 years and older (54.1% compared with 51.6%). However, in the 50–59 age group, 43.2% of First Nations women reported these conditions compared with 32.9% of other women; in the 40–49 age group 24.7% of First Nations compared with 15.8% of other women reported these conditions. In the 30–39 age group, 16.2% of First Nations women compared with 7.6% of other women reported these conditions, and 6.4% compared with 2.5 % younger than 30.

^{xviii} The figure for prevalence of heart disease in the 30–39 age group should be used with caution owing to high sampling variability. The prevalence figure for the 18–29 age group has been suppressed owing to very high sampling variability.

Figure 4. Prevalence of selected long-term health conditions among First Nations men and women by age group (total age adjusted)

E High sampling variability. Use figures with caution.
 - E Sampling variability too high for release of data.

Similarly, high blood pressure is more prevalent among First Nations than other women (23.2% compared with 17.4%). In the 60 + age group the figures are similar for First Nations and other women (44% compared with 44.6%). However, First Nations women in the 50–59 age group were more likely to report this condition (34.8% compared with 22.3%), as were women in the 40–49 age group (17.8% compared with 9.2%) and in the 30–39 age group (8.4% compared with 3.2%). Some 6.4% of First Nations women 18–29 years reported high blood pressure compared with only 1.8% of other women 20–29 years.

Heart disease is more prevalent among First Nations women than other women in Canada (8% compared with 5.1%). The rate is higher among First Nations than other women 60 years and older (22.4% compared with 15.6%), in the 50–59 age group (8.6% compared with 3.9%) and in the 40–49 age group (3.3% compared with 2%). Given high sampling variability for First Nations women with heart disease in the latter two age categories, the findings are probably not be statistically significant for those age groups.

Generally speaking, then, one can expect to find higher prevalence of asthma among First Nations women than other women, especially among First Nations women 40 years and older. The higher prevalence of arthritis and high blood pressure among First Nations women is particularly evident among women younger than 60 years. The higher prevalence of heart disease among First Nations women is most notable among those 50 years and older.

Access to health-related services

General difficulties for people with disabilities

Given that the general health situation of First Nations adults is poorer on average than that of their counterparts in the general population, and that people with disabilities face additional health challenges, how do First Nations adults fare in terms of access to health-related practices/services? Table 11 shows the extent to which First Nations adults with and without disabilities reported difficulties on the RHS in accessing various treatments and services, and the reasons for the difficulties.

In all cases the “universes” for figures reported in the bulleted rows are people who didn’t decline to answer the RHS question for a given row or who reported something other than “don’t know.” Figures shown on the non-bulleted rows are totals of any “yes” responses across the bulleted items underneath concerning difficulties accessing traditional medicines, barriers to health care access and difficulties accessing services under the Non-Insured Health Benefits (NIHB) program for First Nations and Inuit people.

Table 11 (end of chapter) shows that, overall, First Nations adults are more likely than their counterparts without disabilities to report difficulties with most of the services presented.

Issues for which First Nations adults with disabilities are at least 1.5 times more likely than their counterparts without disabilities to encounter difficulties follow.

Cost, affordability and eligibility for public program coverage

- Unaffordable traditional medicines
- Unaffordable direct cost of other health care services
- Unaffordable transportation to health care services
- Unaffordable childcare so health care can be accessed
- Sought-after traditional medicines not covered by NIHB
- Other needed health care services not covered by NIHB
- Denial of approval for service under NIHB
- Difficulties accessing medications, dental care, medical supplies and transportation services (or cost coverage for transportation) under the NIHB
- Difficulties accessing other “medical supplies” under the NIHB. These include disability-specific items such as wheelchairs, magnifying aids, walkers, crutches, canes, artificial limbs, modified kitchen utensils, modified clothing or shoes and special cushions.

Availability

- Unavailability of traditional medicines through the respondent’s health centre
- Lack of doctor or nurse in the respondent’s area
- Non-available health facility
- Other needed health care service is not available in the respondent’s area.

Transportation and distance

- Too far to travel for traditional medicines
- Difficulties arranging transportation to health care

Adequacy and suitability

- Health care services are perceived as inadequate or not culturally appropriate
- Concern about the effects of traditional medicines
- The respondent chose not to see a health professional for unspecified reasons.

General

- Difficulties getting traditional care

Particular healthcare access difficulties for First Nations women with disabilities

Overall, First Nations women are more likely than First Nations men to report difficulties with the issues shown on Table 11. For example, they are:

- 1.9 times more likely to report that they cannot afford childcare so they can access health care;
- 1.4 times more likely to report the lack of a doctor or nurse in their area, that a health facility is not available in their area, that they do not know enough about

traditional medicines and that they have difficulties with transportation or related costs under the NIHB program; and

- 1.3 times more likely to report various other difficulties arranging transportation for health care, affording transportation costs, getting traditional care and accessing vision services under the NIHB.

Summary of Key Findings

This chapter has explored disability and long-term health conditions among First Nations and Inuit adults 18 years and older, and has drawn selected comparisons with the broader adult population in Canada.

The research found that there is a higher prevalence of disability among First Nations adults than in the general adult population in Canada. As in the general population, disability becomes more common as First Nations people age.

First Nations adults with disabilities are more likely than adults without disabilities to be never-married, single people. In part this finding may be due to the fact that the onset of disability occurs in adulthood for many people, that is, sometime after they have entered into a long-term relationship with a spouse or partner. First Nations women with disabilities are particularly likely to be widowed, which may in part be due to the lower life expectancy of men and late onset of disability among women pre-deceased by their husbands/partners.

First Nations adults with disabilities generally fare as well as their counterparts without disabilities in terms of formal educational attainment, yet less well in terms of income, employment and health. They fare considerably less well in these areas than the broader adult population in Canada.

First Nations women with disabilities are about as likely as their male counterparts to report fair or poor health. Older First Nations adults with disabilities and First Nations adults with low personal incomes are more likely to report fair or poor health than younger people or people with higher incomes.

The top five long-term health conditions facing First Nations adults with and without disabilities are arthritis/rheumatism, chronic back pain, allergies, diabetes and high blood pressure. These are also leading health conditions in the general adult population in Canada. Diabetes is much more widespread among First Nations adults with disabilities than among both their non-disabled counterparts and the adult population more broadly in Canada.

Nearly a quarter (22.3%) of First Nations adults reported at least one of the 27 long-term health conditions shown on Table 10 in this chapter. Another 20.1% reported two or three of those conditions and 11.3% reported four or more to a maximum of 14 conditions. First Nations women are more likely to report multiple (four or more) conditions.

The prevalence of these conditions increases with the aging of First Nations adults, with 67.2% aged 18–29 years reporting no such conditions compared with only 13.6% among First Nations seniors 60 years and older. The prevalence of multiple conditions increases with age.

The research explored arthritis, high blood pressure, asthma and heart disease. It found that, when age-adjusted by gender, these conditions are more prevalent among First Nations adults than in the general adult population in Canada. First Nations women are more likely than both First Nations men and women in the general population to report these conditions.

The higher prevalence of asthma among First Nations women compared with other women is most noticeable among women 40 years and older. The higher prevalence of arthritis and high blood pressure among First Nations women is particularly evident among women younger than 60 years. The higher prevalence of heart disease among First Nations women is most notable among those 50 years and older.

First Nations people face a range of health challenges. First Nations adults with disabilities are more likely than their counterparts without disabilities to face a range of barriers and other difficulties gaining access to health services. Issues of cost, affordability and lack of coverage by publicly funded programs are widespread. However, First Nations adults with disabilities are also more likely than their counterparts without disabilities to experience barriers and other difficulties with the availability, adequacy and cultural appropriateness of services and with issues of distance and transportation.

Women with disabilities face particular difficulties in the area of health services, including women's concern about the effects about traditional medicines, not having enough information about traditional medicines and difficulties getting traditional care; the affordability of child care so health care can be accessed; lack of doctors, nurses and facilities in their area; and difficulties arranging and paying for transportation services.

Recommendations

Disability indicators

A more consistent approach to disability indicators in the RHS and Statistics Canada population surveys would better facilitate comparisons of the situations of First Nations adults and other adults in Canada across a range of measures drawn from the surveys.

As well, the RHS could add a question about the cause of the condition that results in reduced activities. Only about one-third of adult disabilities are caused by illness or disease, which RHS question 34 explores in some detail. The rest are caused by factors such as accidents (e.g., at home or work, motor vehicle and other accidents), the natural aging process, emotional or mental health problems, work conditions,

genetic/congenital factors and various other causes. An RHS question that mirrors the ones in the CCHS or PALS about cause of disability could help shed light on why disability is occurring among First Nations people, which in turn could inform prevention and amelioration efforts.

Improving education, employment, Income Security and Health

It is difficult to imagine how the educational, employment, income and general health situation of First Nations adults with disabilities can be improved without concerted efforts by policy makers and other leaders within and beyond First Nations communities to more broadly improve the social and economic situation of First Nations people.

In the process, adults with disabilities need to be recognized as constituting a large share of First Nations adults and should be brought explicitly into the foreground in strategies to improve health, education, employment and income security.

Health risk behaviours (for example obesity, physical inactivity, non-traditional use of tobacco and food intake that results in high blood cholesterol and other factors) that contribute to high prevalence conditions (such as arthritis/rheumatism, asthma, high blood pressure and diabetes), could be targeted by preventative health and health promotion strategies to ensure a focus on reaching First Nations adults with disabilities. Allergies among First Nations people probably require more research into the nature and causes, with due attention to allergies among First Nations adults with disabilities. Stomach/intestinal problems and asthma among First Nations adults need further research and practical attention, again with some focus on disability.

Personal health strategies used by First Nations adults with disabilities in excellent or very good health could be researched and made widely available in “user-friendly” formats.

Issues of health care access require serious attention for First Nations adults with disabilities, who disproportionately face difficulties gaining access to a wide range of health-related services. Some of the difficulties (such as those that relate to NIHB services) fall within the jurisdiction of the federal government. Other issues fall to provincial/territorial governments or to First Nations Bands to which responsibility for health care service delivery has been transferred (e.g., general supply of facilities, doctors, nurses and ensuring the services provided are adequate and culturally appropriate). Federal, provincial/territorial and First Nations governments, and health authorities need to work closely with First Nations people with disabilities and long-term health conditions in addressing their barriers and other challenges.

Particular difficulties that First Nations women with disabilities face need to be explored and understood in

greater depth. For example, a better understanding of the challenges and barriers women with disabilities experience in relation to women's health and access to health services could inform the development of differential strategies to improve women's health and well-being. As many First Nations men with disabilities also face difficulties in the area of health and health care access, measures to improve the situation of women could be modified and extended to address the needs of men as well.

Notes to Chapter 4

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Table 1. Prevalence of disability based on the RHS, CCHS 2003 and NPHS 1998-99, showing First Nations totals unadjusted and adjusted for age¹

Age group	First Nations - RHS	Canada – Selected CCHS indicators	First Nations to Canada Differential	First Nations - RHS	Canada - NPHS	First Nations to Canada Differential
<30 ¹	13.1%	16.2%	0.8	13.1%	8.8%	1.5
30-39	16.0%	18.7%	0.9	16.0%	11.7%	1.4
40-49	22.7%	24.2%	0.9	22.7%	14.9%	1.5
50-59	38.2%	29.9%	1.3	38.2%	21.1%	1.8
60+	49.7%	38.1%	1.3	49.7%	31.8%	1.6
Total - Unadjusted for age	22.9%	25.8%	0.9	22.9%	17.8%	1.3
Total - Age adjusted	28.5%	25.8%	1.1	27.8%	17.8%	1.6

¹ Age 18 – 29 for First Nations; age 20 – 29 for other adults.**Table 4. Percentage of First Nations and other adults in Canada with less than high school graduation, by age and disability status**

Age group	First Nations/Inuit (RHS)			Canada (CCHS)			Canada (NPHS General file)		
	Non-disabled	With disability	Total	Non-disabled	With disability	Total	Non-disabled	With disability	Total
<30 ¹	45.3	38.7	44.4	8.4	13.5	9.2	10.3	18.9	11.1
30-39	25.6	27.8	26.0	8.7	11.0	9.1	12.1	16.2	12.6
40-49	24.2	26.4	24.7	11.8	16.4	12.9	15.1	18.0	15.5
50-59	33.2	32.5	32.9	17.5	22.2	18.9	24.0	28.6	24.9
60+	58.5	61.2	59.8	40.6	46.3	42.8	45.9	50.8	47.4
All adults	35.6	38.7	36.3	16.7	26.3	19.2	20.2	32.2	22.5

¹ Age 18 – 29 for First Nations; age 20 – 29 for other adults.**Table 5. Personal incomes of First Nations/Inuit and other adults in Canada, by disability status**

Income group	First Nations/Inuit (RHS)			Canada (CCHS)			Canada (Health file)		
	Non-disabled	With disability	Total	Non-disabled	With disability	Total	Non-disabled	With disability	Total
No income ¹	7.1	9.1	7.6	4.5	4.5	4.5	5.3	4.7	5.2
Less than \$15,000	39.7	49.5	42.0	19.4	29.4	22.0	24.9	39.5	27.7
\$15,000-\$29,999	31.1	26.2	30.0	23.4	26.0	24.1	27.4	26.2	27.1
\$30,000-\$49,999	16.4	12.4	15.5	27.2	21.9	25.8	25.7	18.1	24.2
\$50,000 or more	5.6	2.7 E	4.9	25.5	18.1	23.6	16.8	11.5	15.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Includes income loss.

E High sampling variability. Use figure with caution.

Table 6. Percentage of First Nations and other adults employed, by age group and disability status

Age group	First Nations (RHS)			Canada (CCHS) ¹		
	Non-disabled	With disability	Total	Non-disabled	With disability	Total
<30 ²	40.1	37.7	39.8	77.4	70.2	76.2
30-39	61.7	45.6	59.1	85.4	77.3	83.9
40-49	64.3	55.9	62.4	87.4	75.9	84.6
50-59	62.3	40.5	53.9	77.4	59.8	72.1
60+	29.3	12.9	21.3	26.5	19.0	24.0
All adults	52.2	37.3	48.8	74.1	58.7	70.4

¹ For the CCHS, percentage at work in the week before the survey, or had a job but were absent. The NPHS has no similar variable² Ages 18 – 29 for First Nations; ages 20-29 for the general population.¹ Owing to differences in survey methodologies, these estimates need to be treated with caution when using other surveys to compare the prevalence of disability across First Nations and non- Aboriginal people.

Table 7. General health of First Nations and other adults in Canada, by disability status

General health	First Nations (RHS)			Canada (CCHS)			Canada (NPHS Health file)		
	Non-disabled	With disability	Total	Non-disabled	With disability	Total	Non-disabled	With disability	Total
Excellent or very good	46.7	16.6	39.9	66.3	32.9	58.0	71.3	27.8	62.9
Good	40.5	37.4	39.8	28.3	36.0	30.2	24.6	36.0	26.8
Fair or poor	12.8	45.9	20.3	5.4	31.1	11.8	4.1	36.3	10.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 8. General health of First Nations and other adults in Canada, by disability status and age

Age group and general health	First Nations (RHS)			Canada (CCHS)			Canada (NPHS Health file)			Factor	
	Non-disabled	With disability	Total	Non-disabled	With disability	Total	Non-disabled	With disability	Total	C1: First Nations with disability + Canada (CCHS) total	C2: First Nations/Inuit with disability + Canada (CCHS) non-disabled
<30 ¹											
Excellent or v good	51.9	27.5	48.7	72.7	47.4	68.6	77.3	43.8	73.8	0.4	0.4
Good	37.1	42.3	37.8	24.1	37.1	26.2	20.2	39.8	22.2	1.6	1.8
Fair or poor	11.0	30.2	13.5	3.2	15.5	5.2	2.5	16.4	4.0	5.9	9.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
30-39											
Excellent or v good	48.4	21.6	44.1	72.6	44.2	67.3	77.3	34.6	71.5	0.3	0.3
Good	41.9	42.2	41.9	24.9	37.3	27.2	20.9	36.8	23.0	1.6	1.7
Fair or poor	9.7	36.3	14.0	2.5	18.5	5.5	1.9	28.6	5.5	6.6	14.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
40-49											
Excellent or v good	45.9	18.8	39.7	67.6	37.5	60.3	73.3	33.8	67.2	0.3	0.3
Good	41.9	42.1	41.9	28.2	37.7	30.5	23.5	35.6	25.4	1.4	1.5
Fair or poor	12.2	39.1	18.4	4.2	24.8	9.2	3.2	30.6	7.4	4.2	9.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
50-59											
Excellent or v good	35.3	13.4	26.9	63.6	28.4	53.1	67.9	27.2	57.9	0.3	0.2
Good	39.3	33.7	37.1	30.3	35.3	31.8	27.6	33.0	29.0	1.1	1.1
Fair or poor	25.4	53.0	36.0	6.1	36.3	15.1	4.4	39.9	13.1	3.5	8.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
60+											
Excellent or v good	31.5	– E	18.8	50.8	20.4	39.2	57.1	18.3	44.4	–	–
Good	50.2	29.6	40.0	36.8	34.8	36.1	33.1	36.4	34.2	0.8	0.8
Fair or poor	18.3	64.5	41.2	12.4	44.8	24.7	9.8	45.4	21.4	2.6	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		

¹ Ages 18 – 29 for First Nations; ages 20 – 29 for the general population.

– E Sampling variability too high for release of data.

Table 9. General health of First Nations and other adults in Canada, by disability status and personal income

Income group and general health	First Nations (RHS)			Canada (CCHS)			Canada (NPHS Health file)		
	Non-disabled	With disability	Total	Non-disabled	With disability	Total	Non-disabled	With disability	Total
No income ¹									
Excellent or very good	42.0	13.9	34.2	62.8	22.9	52.5	65.9	30.2	59.7
Good	39.8	34.3	38.3	30.4	38.5	32.5	28.5	29.4	28.7
Fair or poor	18.2	51.7	27.6	6.8	38.6	15.0	5.5	40.4	11.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$15,000									
Excellent or very good	42.9	14.3	35.1	59.6	22.3	46.7	63.1	17.3	50.5
Good	41.9	36.2	40.3	31.4	33.6	32.2	30.1	36.2	31.8
Fair or poor	15.2	49.5	24.6	8.9	44.1	21.1	6.9	46.4	17.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
\$15,000-\$29,999									
Excellent or very good	52.7	21.3	46.3	64.2	30.8	54.9	70.3	26.6	62.1
Good	36.9	37.2	37.0	29.9	36.2	31.7	24.6	37.7	27.1
Fair or poor	10.3	41.5	16.7	5.9	33.0	13.5	5.1	35.7	10.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
\$30,000-\$49,999									
Excellent or very good	47.8	27.8	44.0	69.4	41.0	63.2	76.2	41.1	71.1
Good	44.3	35.8	42.6	27.1	37.6	29.4	22.0	34.9	23.9
Fair or poor	8.0	36.3	13.4	3.5	21.4	7.4	1.8	24.0	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
\$50,000 or more									
Excellent or very good	58.9	– E	53.1%	74.2%	46.8%	68.8%	80.8	45.2	75.8
Good	38.3	– E	40.0%	23.3%	38.4%	26.3%	17.8	38.3	20.7
Fair or poor	– E	– E	6.8 E	2.5%	14.8%	4.9%	1.4	16.5	3.5
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0	100.0	100.0
All income groups									
Excellent or very good	46.7	16.6	40.6	66.3	32.9	58.0	71.3	27.8	62.9
Good	40.5	37.4	39.5	28.3	36.0	30.2	24.6	36.0	26.8
Fair or poor	12.8	45.9	19.9	5.4	31.1	11.8	4.1	36.3	10.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Includes income loss.

E High sampling variability. Use figures with caution.

– E Sampling variability too high for release of data.

Table 10. Specific health conditions of First Nations (age adjusted) and other adults in Canada, by disability status

Long-term conditions	First Nations (RHS)					Canada (CCHS)		
	Non-disabled	With disability		Total		Non-disabled	With disability	Total
Arthritis or rheumatism	14.6		52.2		25.3	11.9	39.8	19.1
Chronic back pain ¹	9.6		34.5		16.7	14.1	42.4	21.4
Osteoporosis	1.6		12.4		4.7			
Asthma	9.0		14.6		10.6	6.1	12.8	7.8
Chronic bronchitis	2.5		6.9		3.7	1.7	5.9	2.8
Emphysema ²	0.5	E	2.4	E	1.0	0.6	3.4	1.4
Allergies	17.6		25.3		19.9	27.5	38.5	30.3
Cataracts	4.3	E	15.3		7.4	2.9	9.0	4.5
Glaucoma	–	E	3.6	E	2.7	1.2	3.4	1.8
Blindness or serious vision problems	2.2		8.3		4.0			
Hearing impairment	8.5		18.7		11.4			
Epilepsy	0.6	E	2.3	E	1.1	0.4	1.1	0.6
Psychological or nervous disorders	1.7		6.5		3.1			
Cognitive or mental disability	–	E	2.8	E	1.1			
ADD or ADHD	0.3		2.0	E	0.8			
Learning disability	1.4		3.0	E	1.9	1.1	3.9	1.8
Heart disease	3.2		18.8		7.6	3.1	12.9	5.6
High blood pressure	14.7		34.7		20.4	13.1	25.8	16.4
Effects of stroke (brain haemorrhage)	0.8		5.4		2.1	0.4	3.4	1.2
Thyroid problems	3.5		8.6		5.0	5.1	9.5	6.2
Cancer	1.4		4.9		2.4	1.2	4.0	1.9
Liver disease (excluding Hepatitis)	1.1		3.1		1.7			
Stomach and intestinal problems ³	6.4		16.6		9.3	2.1	5.9	3.1
HIV-aids	–	E	–	E	–			
Hepatitis	0.9		2.1	E	1.2			
Tuberculosis (TB)	3.3		5.5		3.9			
Diabetes	15.3		30.9		19.7	3.8	9.2	5.2

1 For the general population in the CCHS, back problems excluding fibromyalgia and arthritis

2 For the general population in the CCHS, emphysema or chronic obstructive pulmonary condition

3 For the general adult population in the CCHS, stomach or intestinal ulcers

E High sampling variability. Use figures with caution.

– E Sampling variability too high for release of data.

Table 11. Percentage of first Nations adults facing difficulties accessing health-related services, and barriers to health care access

	First Nations (RHS)			
	Non-disabled	With disability	Total	Ratio (With disability + non-disabled)
Had any difficulties accessing traditional medicines	30.9	40.5	33.1	1.3
Specific difficulties accessing traditional medicines:				
• do not know where to get them	15.0	19.3	16.0	1.3
• can't afford it	2.3	6.6	3.3	2.9
• too far to travel	5.2	12.7	7.0	2.4
• concerned about effects	2.8	5.5 E	3.4	2.0
• do not know enough about them	19.2	20.5	19.5	1.1
• not available through health centre	7.8	13.1	9.4	1.7
• not covered by Non-insured Health Benefits	6.6	13.9	8.3	2.1
Use traditional medicines	36.5	44.6	38.3	1.2
Faced any barriers to health care access	51.6	70.3	55.9	1.4
Specific barriers to health care access:				
• doctor or nurse not available in respondent's area	16.7	24.4	18.5	1.5
• health facility not available	9.2	16.2	10.8	1.8
• waiting list too long	30.8	41.2	33.2	1.3
• unable to arrange transportation	11.9	23.3	14.5	2.0
• difficulty getting traditional care	11.3	20.4	13.4	1.8
• not covered by Non-insured Health Benefits	16.9	30.3	20.0	1.8
• approval for services under NIHB was denied	13.4	25.6	16.1	1.9
• could not afford direct cost of care, service	10.5	22.4	13.2	2.1
• could not afford transportation costs	10.9	23.1	13.7	2.1
• could not afford childcare costs	6.2	10.3	7.1	1.7
• felt health care provided was inadequate	14.2	25.8	16.9	1.8
• felt service was not culturally appropriate	11.3	20.7	13.5	1.8
• chose not to see health professional	9.9	14.5	10.9	1.5
• service was not available in respondent's area	12.4	22.2	14.7	1.8
Had any difficulty accessing NIHB services	30.1	47.5	34.1	1.6
Specific difficulties accessing NIHB services:				
• medications	14.0	30.1	17.8	2.1
• dental care	15.2	23.6	17.2	1.6
• vision care	15.9	21.5	17.2	1.3
• hearing aid	3.0 E	5.1 E	3.4 E	1.7
• other medical supplies	4.6	12.6	6.5	2.7
• escort travel	6.8	11.3	7.8	1.7
• transportation services or costs (air or road)	7.2	15.3	9.1	2.1
E High sampling variability. Use figures with caution.				

Chapter 5

Diabetes

Abstract

Diabetes has been identified as a serious nationwide health problem among First Nations populations in Canada. The First Nations Longitudinal Regional Health Survey (RHS) was designed to track health issues—including the health impacts directly attributable to having diabetes and the extent to which diabetes education and treatment are reaching those diagnosed with diabetes in First Nations communities.

The diabetes epidemic is growing; 19.7% of First Nations adults have been diagnosed with diabetes (mainly type 2). The prevalence increases with age and is higher among adults living in isolated communities and those speaking or understanding a First Nations language. There is no longer a difference in prevalence between men and women due to a large increase in diabetes in middle-aged men. Although diabetes and being overweight go hand in hand, no significant relationship was observed in this survey between diet and physical activity. The rate of diabetes among First Nations adults continues to be higher than among the general population and the rate of increase in prevalence by age is steeper.

Diabetes poses a high burden to health. Almost all diabetics report adverse health consequences and over one-quarter experience activity limitations. The rates of heart disease and other co-existing conditions are higher among diabetics than among other First Nations adults. The majority are being treated, primarily by medication or lifestyle changes, but a lack of access to diabetes education is an issue for more than one in ten. Half of adult diabetics monitor their blood glucose every day; (one in five did not do so in the previous 2 weeks).

A comprehensive, culturally appropriate diet and physical activity strategy is needed that is and that includes promotion, policy and environmental change strategies. Early detection, treatment and control are essential to stem the personal and public health burden of diabetes in the community.

Introduction

The 1997 First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS)¹ signalled an important reality. Diabetes had become an increasingly serious nationwide health problem among Aboriginal populations in Canada. At that time,² the prevalence of diabetes increased by age group and was higher among women than men.

The first evidence that diabetes might be an issue came in the mid 1950s.³ In the 1980s, the Pima Indians had a very high incidence rate of diabetes with the prevalence rate being as high as 40% to 50% among adults 35 years and older.⁴ Obesity was then linked to diabetes, with incidence rates of diabetes being 90 times higher among those morbidly obese than among those with low body weight (72.2 cases per 1,000 among those morbidly obese compared to .8 cases per 1,000 among those with body mass index less than 20 kg/m²).⁵ Moreover, having one or more parents with diabetes substantially increased the risk of incidence of diabetes, taking obesity into account. This might indicate a genetic susceptibility to diabetes, or a “thrifty” genotype in which fat stores are efficiently stored and maintained to aid in survival when food is relatively scarce or available intermittently.^{6,7} In addition, gestational diabetes led to higher rates of obesity among offspring,⁸ which indicates that the problem could worsen in successive generations.

The diabetes story of the Pima Indians is not unique; the prevalence of diabetes is consistently higher among other First Nations populations in North America (for example among the Plains Indians⁹ and Algonquins¹⁰) than the non-Aboriginal population. Obesity, a prevalent risk factor, is located mainly on the trunk (in at least one group) and is a significant predictor of diabetes.¹¹ Furthermore, as with the Pima Indians, high birth weight is associated with mothers’ diabetes during pregnancy among First Nations children in Saskatchewan^{12, 13} and, judging by the studies of the James Bay Cree, one in eight women may have gestational diabetes.¹⁴ If higher birth weights later translate into higher rates of obesity among offspring, these children could face an increased risk of diabetes.

The 1997 FNIRLHS measured diabetes prevalence among First Nations adults. The new Longitudinal Regional Health Survey (RHS) was designed to track changes in the prevalence of diabetes among First Nations adults every 4 years from 2002–03 through 2014. In addition, it was designed to gather in-depth information not generally available from health surveys in Canada on the health impacts directly attributable to having diabetes and the extent to which diabetes education and treatment are reaching those diagnosed with diabetes.

Approach

This chapter describes the current situation by examining the prevalence rate of self-reported diabetes (“Have you ever

been told you have ...diabetes?”). In doing so, it explores whether some groups are experiencing higher prevalence rates than others. An ecological or holistic perspective is used to identify such groups considering factors related to the individual and their community. In particular, rates are examined among groups differing in age, sex, household income, education and language status (understood or spoke a First Nations language) and between communities of differing population sizes, degree of isolation and health transfer status. In addition, associations with obesity, diet and physical activity are considered by comparing the prevalence rates of these with those reporting diabetes and those who did not.

The health impact of diabetes among First Nations adults is investigated by considering the number and type of adverse consequences directly related to diabetes (problems with vision, heart problems circulation problems, kidney function, infections, problems with lower limbs, problems with feeling in hands or feet, and amputations). In addition, activity limitation directly related to diabetes is described. General health status, and co-morbidities or co-existing conditions round out the components considered to quantify the personal health impacts of diabetes. Finally, the impact on the family is considered to some extent by examining one indicator, namely receipt of home care by family members.

A range of topics related to the detection, treatment and secondary prevention of diabetes is explored. Differences in the prevalence of a range of diagnostic tests are examined between those diagnosed with diabetes and those who were not. Self-monitoring practices are also described (frequency over a two week period). In addition, adults’ current experiences with diabetes education are described and issues related to lack of education (lack of access, cost, inadequate or culturally inappropriate services) are investigated. Finally, treatment regimes are outlined and access to treatment differs between those with diabetes versus others seeking access to the health system is compared.

As with trends in diabetes, differences in the health impact, detection, education and treatment of diabetes are described according to the individual’s age, sex, household income, education, and language status (understood or spoke a First Nations language) and by communities of differing populations, degree of isolation and health transfer status.

Results

Current situation

Overall, 19.7%ⁱ of First Nations adults have been diagnosed with diabetes. Of those having diabetes, most (78.2%) have

ⁱ To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

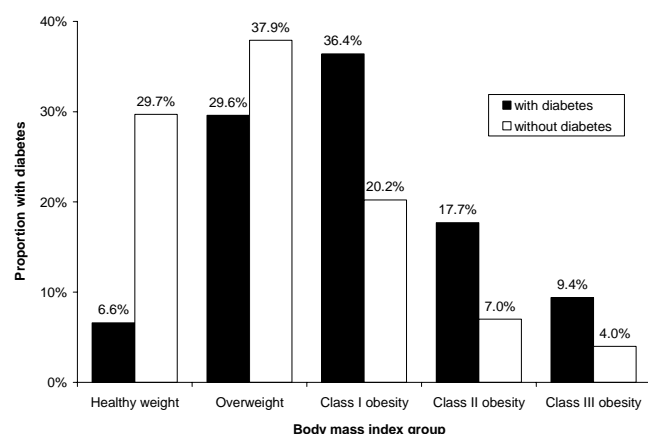
been diagnosed with type 2 diabetes, 9.9% with type 1 diabetes and 9.8% have been told they are in a pre-diabetes state. One in eight First Nations women (11.9%) report having gestational diabetes.

The prevalence of diabetes is lowest among 18–29 year-olds (3.0%*) and doubles each decade to a high of about one in three adults among those 55 years and older (36.4% among those 55–64 years and 35.2% among those 65 years and older).

Relatively fewer adults who have graduated from high school have diabetes compared to both those not graduating and those with college or university graduation. A higher prevalence rate of diabetes is observed among adults who live in isolated communities that have flights but no road access, compared to those in non-isolated communities. Understanding or speaking one or more First Nations languages was associated with rates almost 3 times higher, and this was evident when controlling for degree of isolation and age (although the magnitude of the difference was less pronounced). There were no significant differences by gender, income, community size or health transfer status.

A major risk factor for diabetes is being overweight or obese. Figure 1 compares the distribution of body weight among the population with and without diabetes. Being diagnosed with diabetes is associated with excess body weight in First Nations adults. Whereas most adults without diabetes are classified as being of a healthy weight or overweight, most adults with diabetes are classified as being obese. Only about one in twenty (6.6%) adults with diabetes have a healthy weight, compared to almost one in three adults (29.7%) without diabetes. Despite this, adults with diabetes are just as likely as those without to report almost always eating a balanced nutritious diet and being active.

Figure 1. Distribution of body mass index among those with and without diabetes (n=8,610)



* Comparisons between groups or categories are statistically significant except where "NS" —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

Healthy weight represents body mass index ≥ 18.5 and < 25 ; Overweight represents body mass index ≥ 25 and < 30 ; Class I obesity represents body mass index ≥ 30 and < 35 ; Class II obesity represents body mass index ≥ 35 and < 40 ; Class III obesity represents body mass index ≥ 40

Personal and public health burden of diabetes

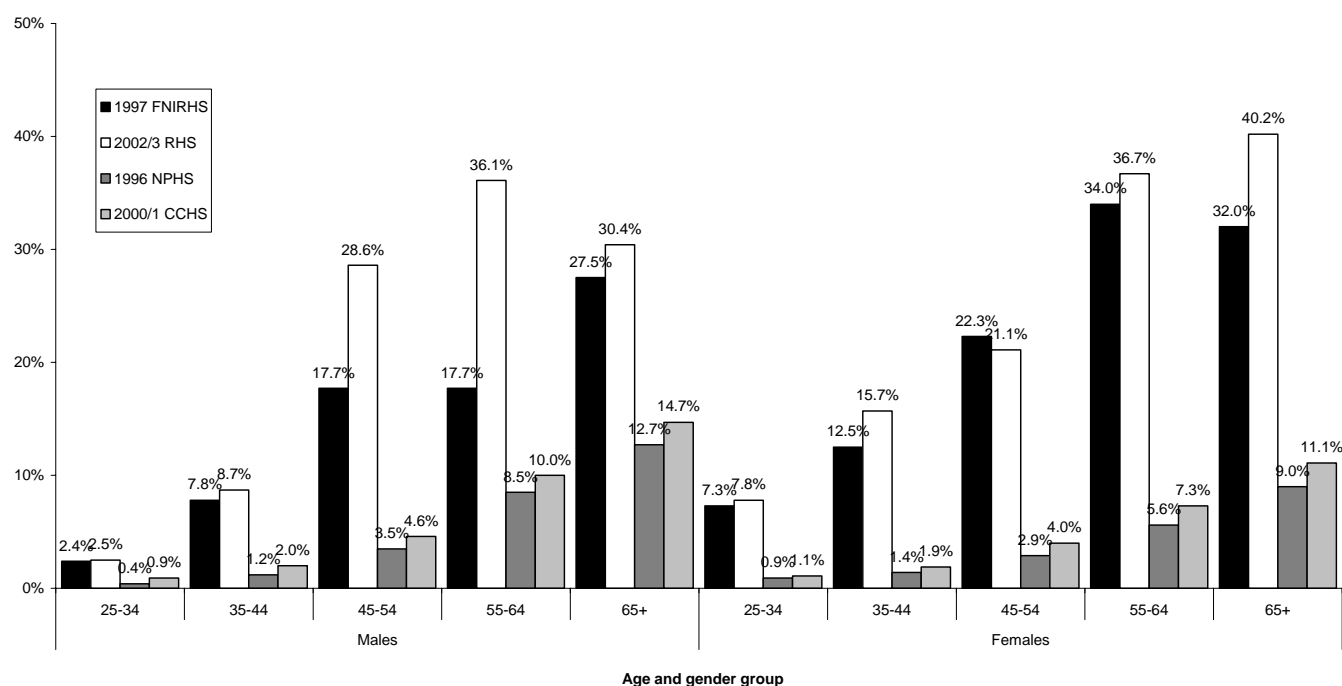
The higher prevalence of diabetes among First Nations adults than the general adult population in Canada imposes a relatively higher public health burden on First Nations communities. As illustrated in Figure 2, in both 1997 and 2002, the prevalence of diabetes was higher among Aboriginal men and women in every age group than it was among the general population. Moreover, this age-related gap appears to have widened between First Nations adults and the general population, particularly among men aged 45–54 and 55–64 years.

Roughly one-quarter of those diagnosed with diabetes experience activity limitations due to this condition. Experiencing limitations is more prevalent among those with high school education (or less) than among college graduates (The small sample size precludes comparison to those with university education).

Although only 28.6% of adult diabetics report activity limitation, 88.7% report one or more adverse consequences related to their diabetes, including: problems with feeling in hands or feet (37.1%), vision (36.8%), circulation (21.6%), lower limbs (20.9%), kidney function (15.9%), infections (14.7%), and heart (11.3%). One-quarter (24.1%) report having 4 or more of these adverse consequences, 30.1% report 2–3 consequences and 34.5% report one such consequence. Problems with lower limbs are more prevalent among older than younger adults. Adults who understand or speak at least one First Nations language were more likely to report adverse consequences related to kidney function. This was particularly noticeable among those 55 to 64 years of age, in that those who speak or understand a First Nations language were less likely than others to report no problem related to kidney function.

Consistent with the number and range of adverse consequences, relatively more adults diagnosed with diabetes rate their health as “poor”, “fair” or “good” than do other adults (85.0% versus 55.9% respectively), whereas only 2.7% of those with diabetes say their health is “excellent” compared to 15.2% of other adults. Furthermore, heart disease and hypertension are roughly four times as prevalent among adults with diabetes than others (14.9% versus 3.3% respectively for heart disease; 42.0% versus 10.3% respectively for hypertension), indicating that co-existing conditions may also pose a higher health burden among this group than among other First Nations adults.

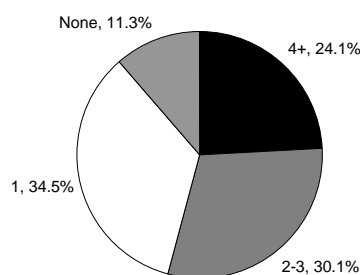
Roughly three in ten adults with diabetes receive some home care from family, which is more than twice the rate of that among those without diabetes (29.0% versus 12.2% respectively). Of this 29.0%, half often receive help.

Figure 2. Diabetes trends among First Nations and the general adult population in Canada

FNIRHS: 1997 First Nations and Inuit Regional Health Survey
 RHS: 2002/3 Regional Health Survey
 NPHS: National Population Health Survey, Statistics Canada
 CCHS: Canadian Community Health Survey, Statistics Canada

Education, treatment and control

Four in ten diabetics (41.3%) currently attend a diabetes clinic or see someone for diabetes education. Among the six (in ten) who are not, half (50.9%) stated that they did not require diabetes education and 31.2% did not state a reason. Access (22.2%) is the main reason that those needing education did not receive it, and this was more apparent among those living in isolated communities (47.2%) compared to non-isolated (12.9%). It was also more apparent among those understanding or speaking a First Nations language compared to those who did not. Compared to those without diabetes, a higher percentage of adults diagnosed with diabetes report that lack of Non-Insured Health Benefits (NIHB) (27.0% versus 18.7%) and denial of approval for services under NIHB limit access to health care (21.2% versus 15.2%). In particular, those with diabetes are more likely than others to report difficulty accessing medication, other medical supplies and hearing aids. Other reasons for not attending a clinic or seeing someone for diabetes education are cost (6.2%), insufficient available information (4.7%), and culturally inappropriate or inadequate services (3.3%).

Figure 3. Number of adverse consequences of diabetes (n=1,400)

Almost all those diagnosed with diabetes (89.8%) are receiving some form of treatment. A combination of regimes are used to control diabetes; the most prevalent are medication and diet (68.0% and 65.5% respectively), followed by exercise (52.9%), insulin (16.7%), traditional medicines (12.9%), and seeing a traditional healer or taking part in traditional ceremonies (6.0%). Diet is more likely to be used as a treatment among those with college education compared to those with less education, and by those residing in communities where the health services were transferred directly to the community. Adults under 40 years of age (66.2%) are more likely than adults over 60 years of age (43.6%) to control their diabetes with exercise. Adults who understand or speak a First Nations language and those living

in smaller communities (< 1,500 residents) are more likely than others to take traditional medicines.

Figure 4. Diabetes education: Proportion receiving education and reasons for its lack (n=762)

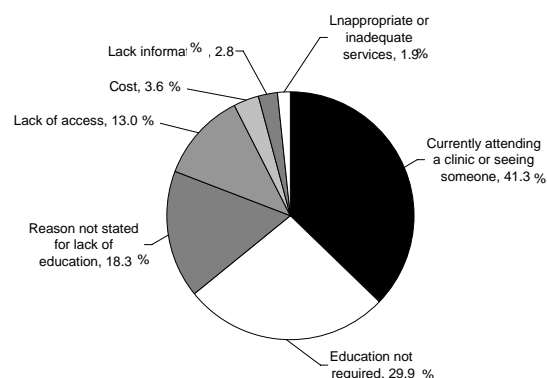
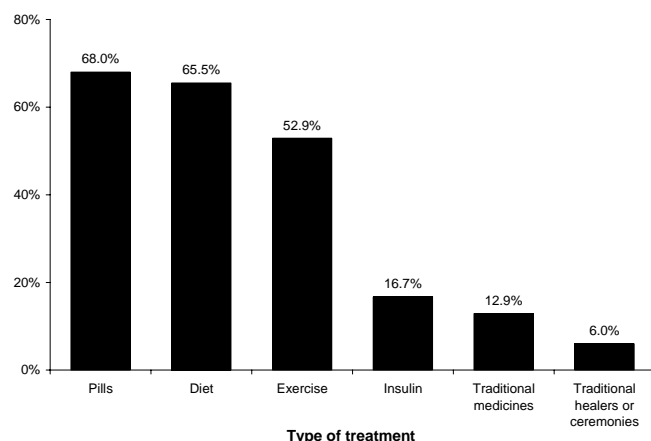


Figure 5. Treatment of diabetes (n=1,301)



Adults with diabetes are more likely than other adults to have received the full range of diagnostic and monitoring tests that were queried in the RHS. Not surprisingly, this difference is largest for blood sugar tests (92.1% versus 47.1%). Rates are also higher for cholesterol tests, blood pressure tests, vision or eye examinations, complete physical examinations, and rectal examinations.

Half of those diagnosed with diabetes monitor their blood sugar levels regularly; 27.6% do so about daily and 22.8% more than once a day. One in five did not check their blood sugar in the two weeks prior to the survey. Regular monitoring is more prevalent among older adults, those living in low-income households, and those who understand a First Nations language. However, the association with language was not evident when age was taken into account.

Consistent with diet's use as a means to control diabetes, more adults with diabetes cite having a good diet as one of the things that personally "makes them so healthy" compared with those without diabetes. The other thing cited more frequently is "good sleep". Although just as likely to

regularly eat a balanced nutritious diet, those with diabetes are less likely than others to report often eating added sugar or soft drinks. With the exception of consuming coffee or tea more frequently than others, there were no differences with regard to other aspects of diet (such as fatty foods, salt or traditional foods).

Discussion

Diabetes continues to be a major health issue for First Nations. Its prevalence rate is high and growing, particularly among older women and among men 45 to 64 years old. Not only is this condition more pervasive than among the general adult population, the difference between the two groups has increased, alarmingly so among middle-aged men and, to a lesser extent, older women. Furthermore, the rate of 19.7% is likely an underestimate. The rates of diabetes reported in other Aboriginal studies (such as self-reports among Métis) have proven to be lower than rates in healthcare databases,¹⁵ and the rate of undiagnosed diabetes may be significant.

In the general population, the likelihood of being diagnosed with diabetes is 1.6 to 2.0 times higher among men and women who are overweight, and 7.2 to 10.8 times higher among men and women who are considered morbidly obese (after controlling for socio-demographic and lifestyle factors).¹⁶ Obese Aboriginal children may be 5 times more likely to have impaired fasting glucose than leaner children.¹⁷ This suggests that, with three-quarters of First Nations adults classified as overweight or obese (see Chapter 8) and high rates of childhood and youth obesity (see Chapters 18 and 29), the overall situation can be expected to worsen before it improves, particularly taking into account the likely stronger relationship between obesity and the subsequent risk of diabetes among Aboriginals.⁵ This underscores the urgent need for widespread implementation of strategies to prevent diabetes and reduce the potential for adverse health consequences.

Preventing and controlling the impact of diabetes requires a comprehensive strategy that focuses on primary prevention of obesity, early detection and treatment of diabetes (including detection of impaired glucose tolerance), and prevention of adverse consequences. Given the pervasiveness of the disease, a population-wide strategy is required. With one third of adults 50 and older currently diabetic and with the prevalence likely to continue to increase in the next five years, almost all adults will be touched by the disease, either directly or through family, friends and neighbours. Each aspect of a comprehensive strategy (prevention, detection, treatment and control, research and surveillance) requires urgent attention.

Primary Prevention

Diet and physical activity are key considerations in preventing diabetes, both directly and arising from obesity. Compared to the typical North American diet, a diet that was

relatively high in complex carbohydrates, dietary fibre, insoluble fibre, and vegetable proteins was found to be associated with the lower risk of developing diabetes among Pima Indians.¹⁸ Similarly, controlling for body mass, it was found that after six years, the incidence rate for diabetes was generally lower among more active men and women¹⁹ and is associated with lower insulin concentrations.²⁰ Moreover, these results appear applicable to First Nations adults in Canada.²¹

A holistic strategy addressing obesity and diabetes in First Nations communities is needed that focuses on improving diet and increasing physical activity (see Chapter 8). It should focus on policy and environmental approaches as well as tailored individualized strategies.²² Raine has provided an evidence-based framework outlining these types of approaches that could provide a basis for designing, customizing and enhancing local action to prevent obesity and diabetes.²³ Due to the high prevalence of being overweight and obese, strategies should target First Nation adults, especially women of childbearing years. A diet and physical activity strategy to prevent obesity and diabetes must also place emphasis on prevention efforts for children and youth.

Culturally appropriate strategies need to be developed at the community level, which take into account local conditions and history. However, it is important that approaches, tools and resources are shared between communities so that successful programs may be adapted. The National Aboriginal Diabetes Association's handbook of Healthy Living Activities for Grades 4 to 6²⁴ that is targeted for use by parents, caregivers and educators is an example of one such resource. Their ongoing efforts to document the success stories of communities in developing diabetes prevention programs may help others learn from each other and network to share approaches.²⁵

Education, Treatment and Control

Manitoba data has shown that about 50% of diabetes cases are undiagnosed in the general adult population.²⁶ This means that 7% of First Nations adults may currently have diabetes without knowing it. To address this issue, the adoption of screening programs has been recommended to improve detection among those at higher risk of diabetes (that is those having high abdominal adiposity (among men), high triglycerides (among women), hypertension or parental history of diabetes). Although typically recommended only every three years among those 40 years and older,²⁷ widespread early screening programs for diabetes are needed given higher rates of diabetes occurring at younger ages, particularly among 35–44 year olds.

Although the vast majority of those with diabetes are receiving some form of treatment to control the condition, almost one in ten are not. This is cause for concern, as a recent study has found that glycemic control decreased with

the duration of diabetes despite increasing treatment level and that those who had diabetes longer experienced higher rates of hypertension, dyslipidemia, and both microvascular and macrovascular complications.²⁸ The researchers concluded that current treatment approaches are not intensive enough for many patients with diabetes of longer duration. This implies that, with higher prevalence rates among younger adults than previously, more adults will be living with diabetes longer, so the prevalence of these co-existing conditions may be expected to increase among First Nations adults. It is therefore essential that diabetes be detected early and that treatment begin without delay. Furthermore, the condition needs to be regularly monitored and, if necessary, more progressive treatment instituted.

Routine identification and treatment may be difficult in communities without access to regular diagnostic services. A mobile diabetes clinic, supported by interactive electronic health services from doctors, successfully increased access to diabetes care in remote areas of British Columbia.²⁹ Similar approaches may prove helpful in other isolated or remote communities to increase access to diabetes education, diagnosis and treatment.

Research and Surveillance

The RHS has provided valuable information on the current prevalence of diabetes and its impact on First Nations adults. Monitoring the situation is critical to determining whether or not progress is being made to contain rising prevalence rates, and this will require continued investment in national monitoring programs.

More detailed information is required within First Nations communities to track the prevalence locally and monitor progression of the disease. The Cree have used computerized databases to track diabetes.³⁰ This approach provides a model and lays the foundation for much-needed prospective research on diabetes.³¹ Locally based information is also helpful in devising relevant solutions to promote nutritious diets, physical activity and healthy body weights by addressing specific socio-cultural and environmental influences on these. Evaluation results of successful (and unsuccessful) programs need to be shared between communities so that promising solutions can be quickly adapted and integrated in programs elsewhere.

Aboriginal Diabetes Initiative

The epidemic of diabetes among Aboriginals has been recognized in recent years. In the Federal Government, the Canadian Diabetes Strategy has earmarked support for local programs under the Aboriginal Diabetes Initiative. The program respects the principle of self-determination by supporting programs for diabetes programs for prevention and treatment that are “community-based, culturally appropriate, holistic in nature and more accessible”.³² An environmental scan conducted by the National Aboriginal

Diabetes Association revealed that 84% of communities were involved in prevention activities.³³ This clearly demonstrates that most communities are aware of the need. As well, many are developing a solid base for prevention education. However, access to treatment may be even more limited than the data from the RHS would suggest; 56% of those surveyed in the environmental scan were diagnosed off-reserve, perhaps suggesting that, although treatment is available, it is not readily accessible.³³

Finally, the data from the RHS supports many of the recommendations from the consultations leading to the development of the Aboriginal Diabetes Initiative. In particular, it recommends that:

- Prevention and education activities be community-wide as most adults are affected by diabetes, either directly or indirectly through family, friends and neighbours;
- Screening programs be community-wide among adults and youth at risk (overweight or obese) as the prevalence of diagnosed diabetes is higher at younger ages than previously;
- Women of child bearing years be screened for diabetes as part of regular physical examinations;
- Nutrition and physical education programs be taught in schools with promotional components targeting parents as well as children;
- Comprehensive diet and physical activity strategies be developed in each community, that include environmental and policy initiatives to reduce barriers to accessing enjoyable, safe opportunities for physical activity and healthy affordable foods;
- Community wide education be provided on the adverse consequences of diabetes and its early warning signs;
- Trained personnel be available to help with diabetes screening and education, and with training and support for home care givers;
- The role of mobile clinics and telemedicine be further investigated as a means of providing increased service to remote and isolated communities;
- The problem be regularly monitored through a diabetes surveillance system involving administrative records and on-going surveys such as the RHS; and
- Promising approaches be rigorously evaluated to understand what works and why, so that they may be successfully adapted to and adopted by other communities.

In sum, the diabetes epidemic among First Nations adults is growing. A comprehensive diet and physical activity strategy is needed that is culturally appropriate and includes promotion, policy and environmental change strategies particularly for middle-aged men who have emerged as a key at-risk group. Early detection, treatment and control of

diabetes are essential to stem the personal and public health burden of diabetes in the community. Community-wide screening and education programs are needed, given the pervasiveness of risk factors in the population. Access to progressive treatment regimes is necessary to ensure glycemic levels are controlled and adverse conditions avoided. Surveillance is needed to monitor the scope of the problem and the prevalence of risk factors. Research and evaluation of programs are needed to understand what works and why, so that promising approaches can be quickly shared between communities.

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Chapter 6

Injuries

Abstract

Injuries are a serious public health problem in Canada, and even more so in many First Nations communities. Like previous studies, the First Nations Regional Longitudinal Health Survey (RHS) results show that First Nations injuries tend to follow a similar pattern to the rest of the Canadian population but occur with much greater frequency. Falls, sports, motor vehicle crashes and violence are all frequent causes of injury. Alcohol contributes to some types of injuries, particularly suicide attempts and violence. Certain groups are at higher risk of injury, including younger adults, men, people living in lower-income households, people with problems such as depression or substance abuse, and those living in isolated communities. Preventing injuries is likely to require action at several levels: attacking the root causes (e.g., reducing social inequities, strengthening families); modifying the environment or equipment (e.g., enforcing seatbelt laws); and introducing programs to modify lifestyles (e.g., education on risks, treatment for substance abuse).

Introduction

Injuries are a serious public health problem throughout Canada. Research indicates that in addition to death and disability, injuries (including sexual violence) contribute to a variety of other health problems including depression, alcohol and substance abuse, eating and sleeping disorders, and HIV and other sexually transmitted diseases.¹ The consequences of these deaths and disabilities affect not only the victim, but their families, communities and societies at large.

Injuries can be broadly classified according to whether they are intentional or unintentional. Unintentional injuries are those for which there is no intent to harm, either from the victim or someone else for example, falls or car crashes. Intentional injuries include self-inflicted injuries (suicide or self-harm) and those inflicted by someone else (homicide or assault).

Injuries involve a complex interaction of factors.^{2 3 4 5} At a societal level, these include low socioeconomic status, cultural norms that support violence to resolve conflict, and rigid gender roles.⁶ A community's commitment to injury prevention is another factor unsafe roads, easy access to firearms and poor enforcement of seat belt use contribute to injuries.^{7, 8} At the individual level, there is evidence to suggest that injury risk is linked to income and education as well as alcohol and substance abuse.^{9, 10}

In First Nations communities, injury is an even more pressing issue than in the rest of Canada. It is one of the leading causes of death for First Nations people, and is responsible for approximately one quarter of all deaths and over half the potential years of life lost.¹¹ Rates of injury death for First Nations were almost triple the Canadian average in 2000,¹² and injuries are among the most common reasons for hospitalisation.¹³ However, although injury death rates in First Nations remain high, they have decreased considerably since 1979 especially for unintentional injuries.^{14, 15}

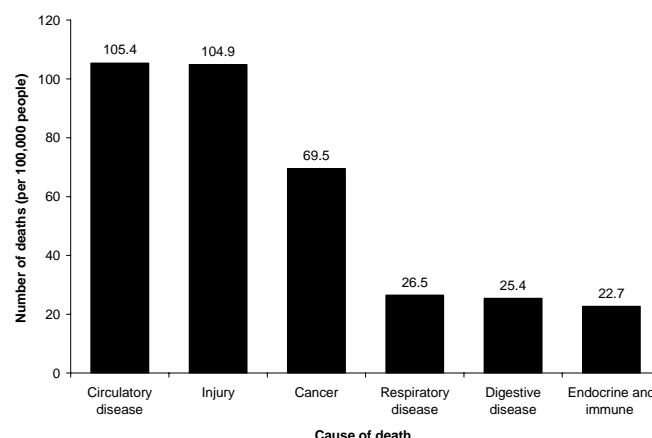
Injuries can be looked at in various ways. Many studies use mortality data, while others focus only on injuries serious enough to require hospitalisation. In contrast, surveys allow for a more detailed picture of the smaller day-to-day injuries. The RHS asked about any injury in the preceding year that was serious enough to require care from a health professional. This chapter presents the resulting information on what types of injuries people are experiencing what caused these injuries and which groups are at greatest risk.

Interpretation Methods

The RHS asked three sets of questions on injury. The first set focused on the *nature* of injury. People were asked if, in the year prior to the survey, they had experienced any of a list of injuries such as major cuts, sprains, broken bones or

concussion. Each of these questions was answered with “yes” or “no,” so the resulting numbers reflect *how many people* experienced a given type of injury, rather than *how many injuries* happened in total. The different types of injury are not mutually exclusive; some respondents might have been injured more than once during the year.

Figure 1. Leading causes of death in First Nations, 2000



Source: First Nations and Inuit Health Branch, Health Canada: unpublished statistics.

The second set of questions asked about the *causes* of injury, such as falls or car crashes. Again, these were yes/no questions. For each “yes” answer, a third follow-up question asked if the incident was alcohol-related. Because of the way the questions were structured, some assumptions had to be made when analysing the alcohol responses. Many people refused the alcohol questions; under-reporting is likely because of the stigma associated with alcohol use. In short, the numbers on alcohol involvement should be treated as estimates only.

Results

Types and causes of injuries

According to the RHS, 28.8%ⁱ of First Nations adults sustained an injury serious enough to require medical care in the year prior to the survey. This rate is far above the Canadian average: in 2003, the proportion of Canadians age 12 or older that was injured seriously enough to limit their normal activities was only 13.1%.ⁱⁱ¹⁶ Rates for Aboriginal peoples living outside First Nations communities appear to be halfway between the RHS and general Canadian figures. Over the 2000-2003 period, 20% of Aboriginal people living off-reserve sustained an injury serious enough to limit their normal activities.^{iii 17}

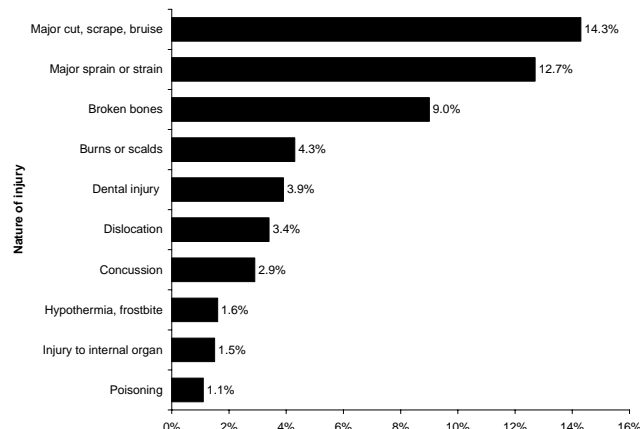
ⁱ To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

ⁱⁱ The comparison is not perfect, because the age groups are not identical and also because of differences in question wording: RHS asked about injuries that required medical care, whereas the Canada-wide survey asked about injuries that limited the person's usual activities. Note also that these figures are not age-standardized.

ⁱⁱⁱ This figure is for people with any First Nations ancestry living off-reserve in any of the provinces. It does not cover the Territories.

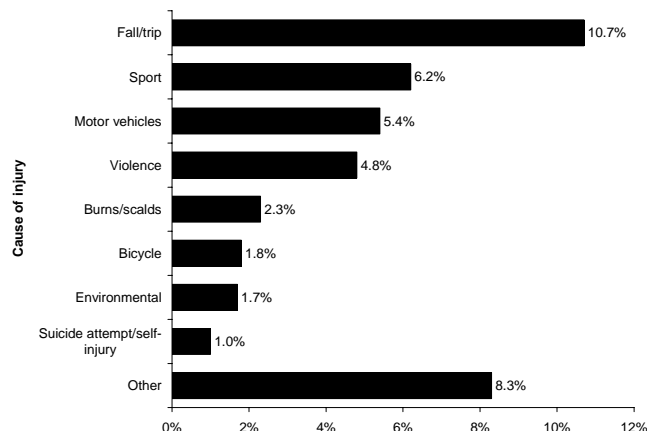
What are these injuries? In the RHS, the most commonly reported types were major cuts, scrapes, or bruises; major sprains; and broken bones or fractures. The picture among other Canadians, and among First Nations people off-reserve, was similar; sprains/strains and broken bones were among the most common types of injury.

Figure 2 Proportion of respondents who sustained various types of injuries (n=10,877)



The causes of injury most frequently mentioned by respondents were falls, sports injuries, incidents with motor vehicles (cars, snowmobiles, ATVs), and violence (family violence or other assault).

Figure 3. Proportion of respondents reporting various causes of injury (n=10,962)



* Collisions between bicycles and motor vehicles would be placed in the Motor vehicles group.

Overall, alcohol was said to be involved in just 5.1% of all the incidents that people mentioned but it contributed disproportionately to certain *types* of incidents. Thus, while alcohol was rarely mentioned in connection with burns or sports incidents, it was implicated in about a quarter of the motor vehicle crashes and falls (27.6%, 25.7%), over half (56.9%) the instances of violence, and fully 80% of the suicide attempts. The same associations between alcohol use and violence or suicide have been documented in other populations.¹⁸

Groups at greater risk of injury

Injuries are not random: certain people may be particularly at risk because of their age, sex, personal characteristics, occupations, or living environment. The RHS results show that males are at much higher risk than females;^{iv} 33.6% of males and 23.8% of females reported being injured in the previous year. In particular, men were significantly more likely than women to have an injury caused by sports, bicycle accidents, or environmental factors (such as insect stings or frostbite). This pattern is frequently found in injury statistics, and is often attributed to men being more likely to engage in sports and to work in higher-risk occupations.¹⁹

The RHS results show that rates of injury are lowest in children, and are far higher in youth and young adults (18–34) than in older age groups. In the adult age ranges, younger men are at significantly greater risk than other age/sex groups; almost half (42.8%) of men between the ages of 18 and 34 report having had some type of injury in the previous year. These findings are consistent with studies of the Canadian population as a whole, which usually find the highest injury rates in youth and young adults.²⁰

Table 1. Proportion of respondents who reported one or more injuries in the previous year, by age group (n=22,543)

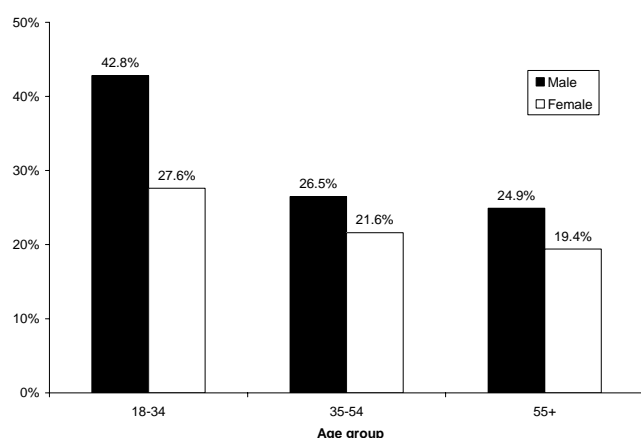
Age group	with 1+ injuries
0-11	17.5%
12-17	49.5%
18-34	35.3%
35-54	24.2%
55+	22.1%

* All differences statistically significant except between adults 35-54 and those 55+.

There appears to be a general decrease in injury rates with higher levels of formal education, this finding was not statistically significant. Moreover, the RHS results suggest that lower-income people are at greater risk of injury; 30.9% of people in the lower-income households, but only 23.4% of those in higher-income households,^v reported having been injured. Studies elsewhere in Canada have come to conflicting conclusions on the relationship between income and injury.²¹ Some have found that high-income people are at greater risk, presumably because they can afford risky activities such as skiing;²² others have found that people in low-income groups are at greatest risk.²³

^{iv} Comparisons between groups or categories are statistically significant except where “NS” —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after bonferroni adjustment).

^v “Lower income” was defined as a household income that fell into these ranges: under \$15,000 for 1-2 person households; under \$20,000 for 3-4 person households; and under \$30,000 for households with five or more people. All remaining incomes were placed in the “higher” group. Note that many people did not respond to the income question.

Figure 4. Proportion of respondents who reported one or more injuries in the previous year, by age group and sex (n=10,903)

* Percentages shown are within each age/sex group.

Table 2. Proportion of respondents who reported one or more injuries, by education (n=10,812)

Education	with 1+ injuries
Did not graduate high school	30.5%
High school graduate	29.9%
Post-secondary	25.2%
University degree(s)	23.8%

Unexpectedly, injury rates were not associated with personal characteristics such as life control (the degree to which the person believes they control events in their own life) or the perception of being “in balance” in the physical, mental, emotional and spiritual aspects of life. They were, however, associated with a series of factors indicative of a troubled life and/or residence in a troubled community. Thus, injury rates were significantly higher in people who had used illegal drugs in the previous year; in people who are frequent, heavy drinkers; in people who had been depressed, or had ever considered suicide; and in people who had had a close friend or family member who committed suicide in the previous year.

Table 3. Proportion of respondents who were injured in the previous year, by indications of problems in life (n=10,313)

Type of problem	Yes	No
Used illegal drug(s) in the past year	40.3%	22.8%
Is a frequent, heavy drinker	39.5%	31.6%
Felt depressed for two weeks or more in past year	38.8%	24.2%
Considered suicide at some time in his/her life	36.3%	25.1%
Close friend or family member committed suicide in past year	41.0%	26.3%

The community environment and injury

The community environment both physical and social can affect both the likelihood of injury, and the types of injuries

that are most common. For instance, the presence or absence of roads, and the condition of those roads, will affect the risk of motor vehicle crashes. A community’s size might be reflected in its recreational facilities, and hence in its incidence of sports injuries. The extent to which a community controls its own services, cultural facilities and land base has been shown to be related to suicide rates.²⁴ Arguably, community control might also be associated with lower rates of other intentional injuries such as assault or family violence.

In the RHS results, injury rates did not seem to be associated with either a community’s size or its transfer status. However, a community’s level of isolation did seem to have an effect: the more isolated communities had higher injury rates compared to non-isolated communities.

Table 4. Proportion of respondents with an injury in the previous year, by isolation of community (n=10,543)

Isolation status	with 1+ injuries
Isolated (no road access)	34.6%
Semi-isolated (more than 90 km to a physician)	32.2% (NS)
Non-isolated (within 90 km of a physician)	27.1%

Falls and trips

Falls were the cause of injury most frequently mentioned by the adults who answered the RHS. This is consistent with the picture for other Canadians and for First Nations people who live off-reserve. In both of these groups, falls are similarly the leading cause of injury.²⁵

The RHS results show that rates of falls are significantly higher in young adults (18–34) than in adults aged 35–54 years. Possible explanations for the higher rates in young adults might include more risk-taking behaviour, higher levels of participation in sport, and perhaps more use of alcohol. Unlike many types of injury, falls appear to be equally common in men and women.

Table 5. Proportion of respondents who reported falling in previous year, by age group (n=10,903)

Age group (years)	% reporting fall
18-34 years	13.6%
35-54 years	8.2%
55+ years	8.7% (NS)
Total	10.6%

Sports injuries

Sports injuries are common: 6.2% of RHS respondents indicated that they had incurred one or more injuries due to sports in the year prior to the survey. Predictably, sports injuries are far more likely to happen to men than to women: 9.3% vs. 3.0% respectively. There is also a clear age pattern:

10.8% of adults age 18–34 had a sports injury, compared to just 2.7% of the people age 35–54.

Motor vehicle crashes

In the RHS, 5.4% of all adults reported that they had been involved in one or more accidents involving a motor vehicle in the previous year. Men were significantly more likely than women to have been injured in a motor vehicle crash (6.8% vs. 3.9%). However, there were no statistically significant differences in crash rates among the various age groups.

Throughout Canada, rates of fatal motor vehicle crashes have dropped steadily over the past twenty years. This decline results from a combination of factors, including mandatory seat-belt laws, more crashworthy car designs, safety features like airbags and child restraints, road improvements and decreases in the proportions of people who drink and drive.^{26,27} Like other Canadians, First Nations people have been part of this trend; First Nations death rates from motor vehicle crashes have been decreasing since 1979.²⁸

Despite the decreases, First Nations people are still at greater risk than other Canadians of being involved in a fatal crash. For instance, a recent study in British Columbia showed that “Natives” were 4.3 times more likely to die from motor vehicle crashes than other residents of the province.²⁹ However, figures from Alberta show that First Nations people are only slightly more likely than other Albertans to need emergency room care for a crash³⁰ and the motor vehicle injury rates reported to the RHS, while not directly comparable to Canadian ones, do not appear to be radically higher than average. In short, it may be that the gap between First Nations and other Canadians is widest for *fatal* crashes.

Why would First Nations people be at greater risk of a motor vehicle crash, fatal or otherwise? A large part of the explanation probably lies in their living situation. Motor vehicle crashes have been observed to occur more frequently in areas of low per capita income and in rural areas in Canada.³¹ Many First Nations communities are located far from centres that provide everyday services or activities, so people travel frequently and they may need to travel over ice or on roads that are in poor condition—icy, flooded or with animals crossing them.³² Bad weather, mechanical failure, a lack of driver training, carrying too many passengers and driving under the influence of alcohol raise the risks of a crash. And low use of seatbelts raises the risk that any crash that does happen will be fatal.³³ Finally, people in rural areas are more likely to use vehicles such as snowmobiles and ATVs that are hard to manoeuvre and to see on public roads.

Violence

Violence in this analysis included both family violence and other types of assault although both types are likely to be under-reported in a survey. The risk factors for family violence have been extensively studied, although less is

known about other forms of assault. At an individual level, family violence is said to be more common in people who are young, who have low income and education levels, who have personality traits like insecurity and low self-esteem, and who experienced abuse in their own families of origin.³⁴ At a social level, it is believed that women are especially vulnerable in societies where there are marked gender inequalities, rigid gender roles, and general acceptance of a man’s right to inflict violence on his partner.³⁵ Efforts to prevent family violence typically involve support for victims (such as shelters, legal assistance and job training) and legal reforms such as criminalizing family violence. Treatment programs for abusers have also been tried, but often suffer from high drop-out and no-show rates.³⁶

Overall, 4.8% of adults told the RHS that they had suffered at least one instance of violence in the preceding year. This proportion did not differ significantly by gender. It can be speculated that the lack of a gender difference in instances of violence is because, although women suffer more domestic violence, men are more likely to suffer other types of assault as a result of fights and brawls.

Conclusions

By identifying the common causes of injuries, the RHS results can help communities to plan programs that reduce injury rates. As well, the results clearly show that certain groups are at greater risk, and should perhaps be targeted in any intervention. Men, younger adults, people living in low-income households, and people with problems such as depression, thoughts of suicide, illegal drug use or frequent, heavy drinking behaviour are amongst these groups.

How can injuries be prevented? It is useful to think of making changes at three levels: the *person* (education), the *equipment*, and the *environment*.³⁷ Often, a combination of all three levels is most effective. For instance, experience has shown that education programs have little or no impact on their own³⁸ and work best when paired with action at other levels. Some of the more successful initiatives in Canada have involved a combination of education and legislative action. Death and disability rates have declined appreciably because of seat belt laws, designated-driver programs, and regulations governing fire-retardant clothing and upholstery.

Other strategies can be implemented at the level of the family or community. For example, many falls (especially by seniors) can be prevented by simple modifications to the environment, such as removing loose rugs, adding handrails to stairs, or removing snow and ice from walkways.³⁹ Rates of sports injuries can be reduced through education (e.g. skiing lessons), creating safer environments (e.g. bike paths) and promoting use of protective equipment (e.g.: helmets, elbow protectors for skateboard users).⁴⁰ Sidewalks, one-way streets and reflective clothing all help to reduce the number of collisions between pedestrians and cars⁴¹ and enforcing

laws on speeding and driving under the influence help prevent motor vehicle crashes of all types.

Violence may be harder to prevent than other types of injury. Its root causes are said to be unemployment, feelings of powerlessness caused by racism and discrimination, and past experience of violence in the home.⁴² However, communities may find it easier to tackle intermediary factors that are more directly under their control such as alcohol abuse, exposure to violence and deterioration of “buffer” services like schools, recreation centres, libraries and mental health programs.⁴³

Many injuries are preventable, and First Nations people do not have to accept injury as an inevitable part of life. Even a small reduction in injury rates would have a substantial effect on the health and quality of life of First Nations people.

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Chapter 7

Access to Dental Care and Treatment Needs

Abstract

This chapter describes the level of access to dental care and the treatment needs of First Nations adults in Canada aged 18 and over —estimated from the 2002/03 First Nations Regional Longitudinal Health Survey (RHS). An interviewer-administered questionnaire collected data on health and dental care access and health conditions. In addition, the survey also collected information on behavioural and sociological determinants of health for 10,962 adults. Fifty-nine percent of respondents indicated they received dental treatment in the past year, with rates lowest among males and older adults. Only 34.4% of First Nations elders (65+) received dental care in the past year compared to 46% of non-Aboriginal Canadians aged 65+. Differences for receiving dental care within the past year varied by education level. Principal barriers in accessing dental care included long waiting times, lack of dental coverage under Health Canada's Non-Insured Health Benefits Program (NIHB), cost and unavailability of service. Receipt of dental care was associated with the respondent's level of education, employment status, self-reported health status, activity limitations, and the community's degree of isolation. Dental treatment needs have increased since 1997 for all treatment types. The highest relative increases occurred for urgent dental care, periodontal treatment and maintenance. Being overweight or obese and having diabetes were found to be associated with the need for prosthetics and periodontal treatment. A collaborative approach to prevent oral disease for First Nations people will be more effective than a disease-specific approach.

Note: The tables are located at the end of this chapter.

Introduction

Health services for Aboriginal people in Canada are currently undergoing an important transition. Authority over the delivery of services has shifted from the federal, provincial and territorial governments to First Nations, Inuit and Métis, the three federally recognized Aboriginal groups in Canada. Since 1989, Health Services Transfer Agreements between Health Canada and First Nations and Inuit (and to a lesser extent, the Métis) have provided the opportunity for Aboriginal communities to manage their own health programs and services, thereby overcoming some of the administrative and jurisdictional barriers that previously impeded the delivery of health care services to these groups.¹ Although this political development has been important with regard to the health status of Aboriginal Canadians, its impact on the health of Aboriginal people in general, and on their oral health in particular, has yet to be fully determined.

Analyses of the First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS) of almost 10,000 adults residing on reserves in 1997 revealed that the effects of changes in Aboriginal lifestyle in recent decades were clearly evident in the case of dental health, an area where problems have rapidly escalated due to changes in diet.² Overall, just over half of the respondents in the FNIRLHS indicated that they received dental care within the previous year, but approximately 50 percent needed dental treatment at the time of the survey. For those who needed dental treatment, the most common treatment required was restorative work such as fillings. This was followed by maintenance (dental check-ups and teeth cleaning), dentures and tooth extractions. Relatively few respondents mentioned periodontal work, while 22 percent had experienced dental problems or pain in the past month.³

Historical overview

The 1997 FNIRLHS did not include a clinical examination component to assess the oral health status and the extent of the dental treatment needs of the survey participants. However, regional oral health surveys of adults conducted over a decade ago indicate that Aboriginal Peoples have poorer oral health status than Canadians as a whole. In 1990, 22 percent of Inuit in the Keewatin region of the Northwest Territories (NWT) were completely edentulous as compared with 13 percent of non-Inuit persons living in the region.^{4, 5} The median number of decayed, missing and filled teeth (DMFT index) observed was 23.1 for Inuit adults and 19.7 for non-Inuit. Seventy-three percent of the dentate individuals had bleeding gums, but only two percent had an average pocket depth greater than 3 mm, as pocket depth is associated with age and there were very few Inuit and non-Inuit adults older than 55 years. Two-thirds of the sample required preventative and/or dental treatment services. At

that time, most dental services were available only for children. These findings are consistent with other surveys of adult Inuit populations in Canada. Among Canadian Inuit elders aged 60 years and over living in three communities in the Keewatin region of the NWT, total edentulism was observed in 35 percent of the population, although only 47 percent wore dentures.^{6, 7} Periodontal assessments revealed that the vast majority of the Inuit elders examined required scaling and/or complex periodontal treatment.

The levels of caries and periodontal disease in the Inuit in the 90s are much higher than those reported for Inuit residing in Foxe Basin aged 16 years and over in 1969 and 1973,⁸ and in First Nations adults living in communities in British Columbia and the Yukon Territories in the early 70s.⁹ Although no epidemiologic study of the oral health status of Canadian Aboriginal adults has been conducted since the early nineties, there appears to be a trend toward a higher prevalence of oral diseases in today's Aboriginal people than there was a decade or two ago. The increased incidence of dental problems might explain the high levels of dental treatment need found in the 1997 FNIRLHS.¹⁰ Also, the 2003-04 annual report of the Non-Insured Health Benefits (NIHB) Program of Health Canada documents a 22 percent increase in expenditures on dental benefits provided to registered First Nations and Inuit people since 1993-94.¹¹

Findings from the 1991 Indian Health Service (IHS) Patient Oral Health Status and Treatment Needs Survey present similar trends in caries experience, tooth loss, periodontal disease and treatment needs among American Indian and Alaska Native adult populations since 1984.¹²⁻¹⁶ It has been suggested that Type II diabetes accounts for the significant increase in periodontal diseases and tooth loss in Native American populations.¹⁷⁻²⁰ Similarly, Canada's Aboriginal people suffer disproportionately from chronic diseases (obesity, Type II diabetes, cardiovascular diseases, and arthritis) in comparison with the rest of the country.^{21, 22}

Diet is also an important determinant of oral health that can be modified through improvements to nutritional education and greater availability of healthy foods in remote communities. However, when oral diseases occur, treatment remains the only option to restore health and this will require greater access to care. Therefore, the availability of health care services will continue to be one of the most important determinants of general and oral health among Aboriginal peoples.

This chapter focuses on the level of access to dental care currently available to Canadian Aboriginal adults aged 18 and older and the factors influencing accessibility to dental services as recorded in the 2002-03 First Nations Regional Longitudinal Health Survey (RHS). The chapter also addresses the perceived levels of dental treatment need and the prevalence of self-reported dental injuries among First Nations adults.

Finally, this chapter includes comparisons with comparable estimates for the general Canadian adult population. Sources for comparative Canadian results include the 2003 Canadian Community Health Survey (CCHS)²³ and the 1996-97 National Population Health Survey (NPHS)^{24, 25} from Statistics Canada.

The RHS Cultural Framework (as outlined in the introduction) was used to analyze the data and interpret the results. The Cultural Framework considers total health to be inclusive of the total person in the total environment.²⁶ Total health is understood, in its broadest sense, as all aspects of health and well-being, interconnected and interdependent. The total person encompasses the mind, body, heart and spirit, and includes all the factors that affect the person's physical, mental, emotional and spiritual health. To have total health is to be in harmony with oneself and with the living environment – Mother Nature.²⁷

This framework was also used to select the items from the questionnaire that were used as explanatory variables in the analysis. For the analyses in this chapter, six outcomes were selected and based on the following questions:

1. Whether the respondent had any difficulty accessing dental care provided through the NIHB program for status First Nations and Inuit persons through Health Canada;
2. When was the last time the respondent had any dental care;
3. Whether the respondent had ever faced any problems accessing dental care;
4. What type of dental treatment he/she currently needed;
5. How they would rate the level of access to health services available to them compared to Canadians generally; and,
6. Whether they had experienced any injuries that required the attention of a health care professional in the previous 12 months (dental injury was then selected for analysis among those injuries that had).

Results

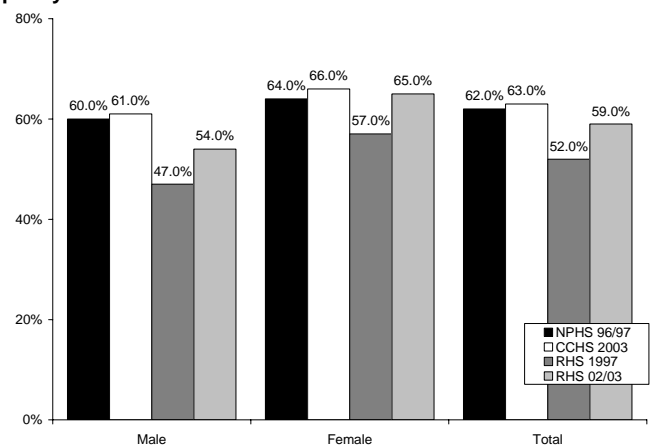
Dental care utilization

Table 1 shows the percentage distribution of the interval since First Nations adults' most recent instance of obtaining dental care, by selected demographic and socioeconomic categories. Less than 1% had never had dental care, 10.0% of the population had not had dental care in the previous 5 years or more, and a similar percentage (13.4%) received dental care between 2 and 5 years previously. Approximately seventeen percent (16.7%) had received care between 1 and 2 years before the survey and the majority (59.2%) received some type of dental care within the year preceding the survey. Although 59.2% of the First Nations adult

respondents received dental care recently, nearly 79% of the adolescent participants in the RHS, and 69% of the children, received dental care in the previous year.

RHS results presented in Figure 1 and Table 1 show variation in dental care by sex, i.e., females had a higher rate of dental care in the previous year (64.8%) than males (53.6%). Figure 1 also illustrates that rates of dental care have increased for both sexes since the previous RHS conducted in 1997 (59.2% in the 2002-03 RHS, up from an estimated 52% in 1997). More non-First Nations males aged 20 and over (63%) have consulted with a dental professional (dentists, orthodontists or dental hygienists) in the previous 12 months than Aboriginal males (Figure 1).

Figure 1. Proportion of adults who received dental care in the past year

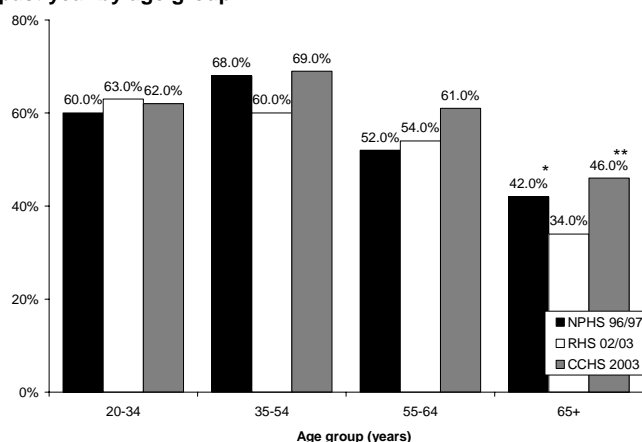


NPHS - 1996-97 National Population Health Survey (n=21,599), 20, 21
 RHS 1997 - National Health Survey of First Nations and Labrador Inuit (n=9,870), 2
 RHS 2002-03 - First Nations and Inuit Regional Longitudinal Health Survey, n=10,455
 CCHS 2003 - Canadian Community Health Survey (CCHS)* (n=?), 19 participants aged 20 years and older.

Analyses by age groups that are consistent with the NPHS and CCHS reveal that only 34.4% of Aboriginal adults aged 65 and older received dental care in the past year as compared to 46% of older non-Aboriginal Canadians (Figure 2). Generally speaking, the likelihood of a recent dental visit has increased for Canadians of all ages since the NPHS in 1996-97.

Table 2 presents the age-specific results for the 2002-03 RHS. 60.2% of seniors aged 60 and over did not report receiving dental care in the previous year, compared with 36.6% of those aged 18 to 29 years. Although a similar trend by age was reported in the 1997 RHS,²⁸ the situation appears to have improved for those aged 18-29 years, with a slightly lower prevalence of “no dental care” reported in 2002/03.

Individuals who did not graduate from high school reported the highest rate of lack of dental care in the preceding year (45.5%) compared with those having a college diploma (34.2%) (Table 2). A larger proportion of unemployed individuals had not had dental care in the previous year compared with those who were employed full-time (45.9% vs. 34.7%, respectively) (Table 2).

Figure 2. Proportion of adults who received dental care in the past year by age group

NPHS - 1996-97 National Population Health Survey (n=21,599), 20, 21
 RHS 1997 - National Health Survey of First Nations and Labrador Inuit (n=9,870), 2
 RHS 2002-03 - First Nations and Inuit Regional Longitudinal Health Survey, n=10,455
 CCHS 2003 - Canadian Community Health Survey (CCHS)* (n=?), 19 participants aged 20 years and older.
 RHS 2002-03 distribution significantly different from NPHS 1996-97 (Chi-squared test, *p<0.05) and CCHS 2003 (Chi-squared test, **p<0.01).

Lack of dental care was also associated with self-reported health status, as shown in Table 2. Those who reported 'poor' health (48.9%) or 'fair' health (51.0%) had not had any dental care within the past year, compared with 35.0% of those reporting 'very good' and 33.6% reporting 'excellent' health. Disability and activity limitations were also found to be related to dental care utilization in the Aboriginal population. Among those who reported physical limitations in activities to occur 'often', 50.6% had not received dental care in the year before the RHS 2002-03, compared with 39.7% of those with no limitations or who were able to carry out their usual activities.

Accessibility of dental care services was associated with the degree of isolation and remoteness of the community in which the individual resides. Although the relationship was not linear, 55.6% of those residing in isolated communities had not had dental care within the previous year as compared to 37.7% of those living in non-isolated communities (Table 2).

Barriers to dental care access

Principal barriers faced by participants in accessing dental care are given in Table 3. One in five (20.8%) reported that long waiting times ('waiting list too long') was the primary barrier. This was followed by 'service not covered by NIHB' (17.6%) 'can't afford it' (16.9%) and service 'not available' in the area (15.1%). Denial of approval for dental services under NIHB was the next most frequently reported barrier to care, but only 14.3% reported to have faced this problem.

Adults between 30 and 59 years old were more likely to feel that services were inadequate compared to younger adults (Table 3). Similarly, adults between 30 –and 49 are more likely than older adults (60+) to report that waiting lists are

too long and that services are not covered by the NIHB. As expected, those in the higher household income brackets were less likely to cite 'can't afford it' and are generally less likely to cite transportation costs as a barrier. Perhaps the most important findings (presented in Table 3) were that, for many of the barriers cited by the surveyed population, residents in communities with a multi-community health services transfer agreement were more likely to report these barriers than both residents in communities who had control over the delivery of health services (and managed their own health programs) and those living in communities that were not part of the health transfer agreement.

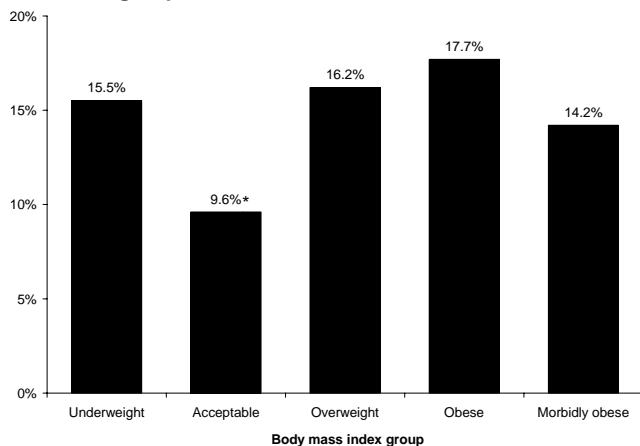
Dental treatment needs

The proportion of adults who reported having a need for dental care is presented in Table 4. It is shown by the kind of dental care the respondents required, and whether or not they had any difficulty in accessing dental services provided through the NIHB program (*last column*). Table 4 also includes on-reserve comparisons from other periods, namely the 1997 RHS,²⁹ and a global rating of access to health services that asked respondents whether their level of access was 'better' or the 'same / less' than that available to Canadians in general.

There was a dramatic increase in the reported need for dental care (all types of treatment) specified by the respondents over time. The need for dental fillings, crowns or bridges increased by 2 1/2 times, (from 15.4% in 1997 to 36.9% in 2002/03). The increase was much higher for urgent dental problems and for periodontal care and maintenance (see Table 4).

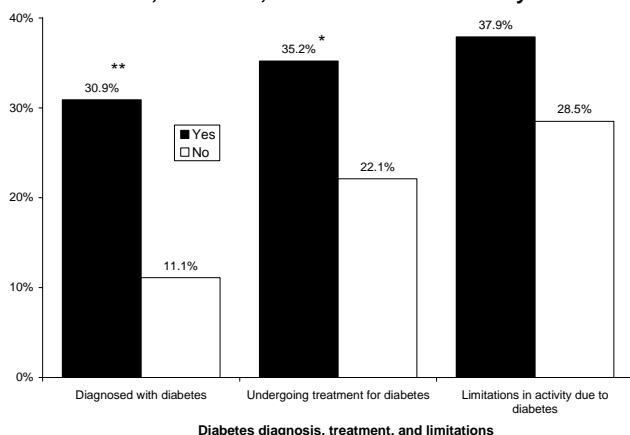
Slightly less than half of those reporting the need for urgent dental treatment (45.5%) said that they had difficulty accessing NIHB services. This was followed by 42.1% of those who needed periodontal work and by 36.1% who required orthodontic work (Table 4). Nearly 60% (55.7%) of the respondents who needed urgent dental treatment due to pain or other problems perceived they had less access to health services (including dental services) compared to the rest of the Canadian population. This finding is strikingly similar to the 1997 FNIRLHS results, where almost 60% of the Aboriginal population believed that health services offered to First Nations/Inuit people were not equal to those offered to other Canadians.³⁰

Interestingly, the need for dentures or other prosthetic work was positively associated with an individual's percent of body fat, as measured by the Body Mass Index (BMI) (Figure. 3). Specifically, those who were overweight or obese were more likely to need denture placement or repairs than those with 'healthy' BMI. There is ample evidence in the literature to support an association between edentulousness or poor dentition status and a lower BMI, as well as with overweight and obese adults.^{31, 32}

Figure 3. Proportion of adults needing prosthetic work by body mass index group* chi-square $p < 0.001$

This link is significant. Obesity has become a major health problem facing American Indians and Aboriginal Canadians and is believed to be associated with the adoption of a diet high in fats and sugars and the rapid transition to a sedentary lifestyle.³³⁻³⁵ In the RHS 2002-03, 31.2% of respondents had a BMI ranging from 30 to 39.9 and 4.8% had a BMI in excess of 40. Being underweight was uncommon in the Aboriginal adult population, with only 1.1% having a BMI less than 18.5.

Because Aboriginal Canadians are especially vulnerable to Type II diabetes - due in part to genetic susceptibility and to the same risk factors for obesity - the association between prosthetic needs and diabetes was investigated. The results are presented in Fig. 4. Higher proportions of adults in need of prosthetic work were found among those who have been diagnosed with diabetes (30.9%).

Figure 4. Proportion of adults needing prosthetic work by diabetes status, treatment, and limitations in activityChi-square test: * $p < 0.05$, ** $p < 0.001$

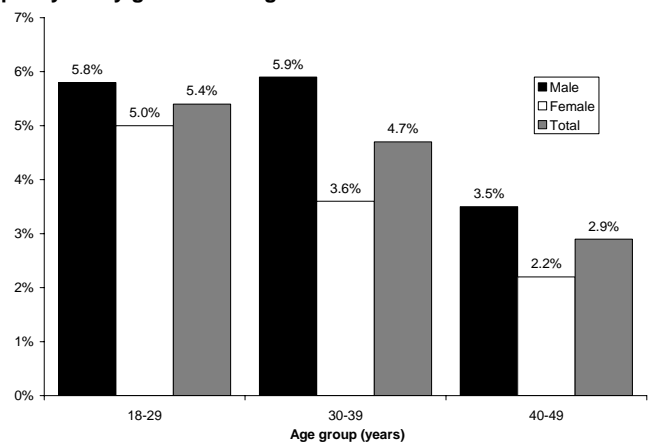
Type II diabetes is a putative risk factor in periodontal disease and tooth loss in Native American populations.^{36, 37} A need for periodontal treatment was reported by only 5.6% of the RHS population (Table 4), but was significantly

associated with having physical disabilities as a result of diabetes (12.7%) - much higher than the rate for diabetics not having physical disabilities or activity limitations (4.1%).

Dental injuries

Injuries are a major cause of hospitalization, and accidents remain one of the leading causes of potential healthy years of life lost.³⁸ Motor vehicle accidents are one of the major contributors to this toll, and alcohol played a role in a majority of these accidents.³⁹ When such accidents occur, injuries to the head and neck are common, especially trauma to the face, the mouth and the anterior teeth. An epidemiological investigation of injuries in the Northwest Territories found that First Nations and Inuit mortality rates were twice that of non-Natives in the NWT.⁴⁰

Overall, only 3.9% of the respondents reported that they experienced a traumatic dental injury in the past 12 months that required a medical visit. Although there were no significant differences between the genders, the prevalence of dental injuries varied within age groups (Figure 5).

Figure 5. Proportion of adults reporting a dental injury in the past year by gender and age

Note: statistics for 50-59, and 60+ age groups have been suppressed due to small sample size

Table 5 shows the causes of dental injury in First Nations adults and their potential relationship with alcohol and drug use. Bicycle and motor vehicle accidents were the primary causes of tooth injuries, which were unrelated to alcohol or drug use. Of adults who indicated that they had received an injury from a physical assault, 20.5% experienced a dental injury compared to 3.3% who did not receive an injury from an assault. Moreover, 12.2% of adults who cite receiving an injury related to sport also indicate experiencing a dental injury, whereas 3.4% of those not involved in a sport injury also report dental injury. Similarly, adults who report receiving an injury from a fall or trip are more likely to report a dental injury than those who have not fallen.

Conclusion

Since the 1997 FNIRLHS,⁴¹ it is evident that dental care access for Aboriginal Canadians aged 18 years and over has only slightly improved. The 2002-03 RHS revealed that 59.2% of adult First Nations people had received dental care in the previous year, up from an estimated 52% in 1997. However, in spite of the limitations of self-reported data, results also indicate that untreated caries, periodontal and prosthetic treatment needs have more than doubled since the previous survey. In addition, the rate of dental care for older adults has declined from about 42% in 1997 to 34.4% in the 2002-03 RHS. A reason for the decline in dental care utilization by First Nations seniors may be because they now wear dentures. Among people aged 15 and older who had not visited a dentist in the past three years, 27% reported that wearing dentures was the main reason for not seeking care, according to the 2003 Canadian Community Health Survey.⁴²

Edentate elderly are also at increased risk for nutritional deficiencies, poorer health status and more activity limitations than younger adults. Self-reported health status and functional limitations were both associated with lack of dental care in the previous year. A review of the oral health status and service use among institutionalized older adults in the United States and Canada revealed that, while frail older adults are afflicted with a host of dental diseases, many do not seek care from dental services.⁴³ Despite rising concerns over the aging of the population, very few comprehensive studies exist that describe the oral health status and treatment needs of elderly First Nations people in Canada.

Dental services use is largely determined by the ability to pay for services. Use of dental services by Canadians as a whole correlates with dental insurance, income status and education level.⁴⁴⁻⁴⁶ In the RHS, dental care increased with education and employment status. According to the NIHB program policy, dental coverage is not comprehensive, which may explain why more complex types of dental treatment among older First Nations adults are sometimes neglected. Overall, 14.3% of the adults interviewed said they were denied prior approval for dental services under NIHB. Of greater concern is the fact that among the respondents who reported the need for urgent dental treatment, 45.5% said they had difficulties accessing NIHB for dental services.

Historically, it has been difficult to attract general dentists and specialists to more remote and isolated Aboriginal communities in Canada. There are also wide variations in relative dentist supply between provinces, and within regions in the provinces.⁴⁷ A comparative study of orthodontic treatment outcomes in First Nations and non-First Nations patients in Alberta showed that local patients had a greater improvement in the Peer Assessment Rating (PAR) index scores than those who were non-local, adjusting for First Nations status and extractions.⁴⁸ The authors of the study suggested that timely access to orthodontic treatment in

emergencies, such as broken brackets or lost appliances, usually influenced the treatment outcome.⁴⁹

In light of associations between oral infections and chronic diseases in adults noted in recent studies, the findings that dental treatment needs were associated with diabetes and unacceptable BMI scores have far reaching public health implications. Along with obesity, diabetes is more prevalent among Canadian Aboriginal adults than non-Aboriginals.^{50, 51} In some provinces, greater rates of smoking and alcohol consumption have also been reported among First Nations people when compared with non-First Nations.⁵² Such data contribute to a more comprehensive assessment of the burden of oral diseases and tooth injury among the First Nations Peoples of Canada, and reveal the need for further research into these risk factors, with the goal of designing appropriate intervention programs for First Nations populations. These programs must be developed with the full partnership of First Nations Peoples so that they may be developed with more traditional approaches to health. Through such programs it is likely that the oral health, as well as the total health, of First Nations populations will improve.

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Table 1: Percentage Distribution of First Nations and Inuit Adults by Last Instance of Obtaining Dental Care and Selected Demographic and Socioeconomic Characteristics

	Last Instance of Obtaining Dental Care					
	Less than 6 months ago	Between 6 months and 1 year ago	Between 1 and 2 years ago	Between 2 and 5 years ago	More than 5 years ago	Never
Total weighted % (n=10,455)	31.9	27.2	16.7	13.4	10.0	0.7
Age group						
18 to 29 yrs (n=3,231)	33.1	30.3	19.1	12.0	4.8	-
30 to 39 yrs (n=2,764)	32.6 (NS)	30.4 (NS)	18.4 (NS)	13.6 (NS)	4.6 (NS)	-
40 to 49 yrs (n=2,187)	34.7 (NS)	26.2 (NS)	16.6 (NS)	13.1 (NS)	8.7	-
50 to 59 yrs (n=1,189)	31.6 (NS)	24.2 (NS)	12.5 (NS)	16.0 (NS)	15.2	-
60 yrs and older (n=1,050)	22.6 (NS)	17.2	11.1	14.2 (NS)	33.0	1.8
Sex						
Male (n=4,736)	28.6	25.1	17.9	16.7	10.7	1.1
Female (n=5,719)	35.4	29.4	15.5 (NS)	10.1	9.3 (NS)	0.4
Educational attainment						
Did not graduate from high school (n=5,552)	27.6	26.9	16.4	14.6	13.3	1.2
High school diploma (n=1,942)	33.5 (NS)	28.0 (NS)	19.4 (NS)	12.6 (NS)	5.9	-
Community college/CEGEP in Québec/trade/technical/vocational school diploma (n=2,332)	38.7	27.2 (NS)	15.5 (NS)	11.8 (NS)	6.8	-
Bachelor's degree (n=463)	36.0 (NS)	29.0 (NS)	16.1 (NS)	12.1 (NS)	-	-
Graduate degree (n=52)	-	-	-	-	-	-
Income level*						
Under \$10,000** (n=2,622)	29.8	27.3	17.9	15.3	8.8	1.0
\$10,000 to \$14,999 (n=1,297)	26.7 (NS)	24.5 (NS)	20.5 (NS)	9.5 (NS)	17.7 (NS)	-
\$15,000 to \$19,999 (n=895)	27.6 (NS)	26.5 (NS)	17.4 (NS)	17.1 (NS)	10.7 (NS)	-
\$20,000 to \$29,999 (n=1,496)	34.4 (NS)	28.7 (NS)	15.8 (NS)	13.7 (NS)	7.3 (NS)	-
\$30,000 to \$49,999 (n=1,185)	37.7 (NS)	29.9 (NS)	12.8 (NS)	12.9 (NS)	5.7 (NS)	-
\$50,000 to \$79,999 (n=313)	46.9 (NS)	26.9 (NS)	12.3 (NS)	9.1 (4.3-18.2) (NS)	-	-
\$80,000 and over (n=40)	-	-	-	-	-	-

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	Last Instance of Obtaining Dental Care					
	Less than 6 months ago	Between 6 months and 1 year ago	Between 1 and 2 years ago	Between 2 and 5 years ago	More than 5 years ago	Never
Household income***						
Under \$10,000** (n=667)	27.0	21.7	18.5	21.1	10.8	-
\$10,000 to \$14,999 (n=546)	28.0	24.1	28.2	7.6	10.9	-
\$15,000 to \$19,999 (n=493)	26.2	28.1	13.9	16.7	14.6	-
\$20,000 to \$29,999 (n=989)	34.1	26.7	15.1	13.9	9.2	-
\$30,000 to \$49,999 (n=1,281)	36.7	25.7	15.0	15.9	6.5	-
\$50,000 to \$79,999 (n=902)	35.6	32.2	16.3	10.2	4.6	-
\$80,000 and over (n=326)	37.9	33.1	10.5	13.1	-	-
Community size****						
Small (<300), n=1,300	28.2	25.8	23.9	12.7	8.9	-
Medium (300-1,499), n=5,821	32.2 (NS)	28.1 (NS)	15.2	13.8 (NS)	9.7 (NS)	0.9 (NS)
Large (1,500+), n=3,334	32.5 (NS)	26.2 (NS)	17.1 (NS)	13.0 (NS)	10.7 (NS)	-
Remoteness factor*****						
Non-isolated (n=7,743)	33.6	28.7	15.5	12.1	9.3	0.8
Remote (n=339)	27.1 (NS)	31.0 (NS)	20.5 (NS)	15.8 (NS)	-	-
Isolated (n=1,187)	25.4 (NS)	19.0	21.6 (NS)	20.0	13.3 (NS)	-
Semi-isolated (n=779)	31.6 (NS)	25.9 (NS)	18.6 (NS)	12.4 (NS)	10.8 (NS)	-
Health Transfer Status*****						
Not transferred (n=6,123)	33.4	26.1	16.3	13.5	10.2	0.5
Community transferred (n=3,014)	30.5 (NS)	29.3 (NS)	17.1 (NS)	12.2 (NS)	9.6 (NS)	-
Part of multi-community transfer (n=1,279)	28.1 (NS)	28.3 (NS)	18.2 (NS)	15.3 (NS)	9.5 (NS)	-

*Includes the respondent's personal income from all sources, before deductions, for the year ending December 31, 2001.

**Includes no income and income loss.

***Total household income from all sources, for all household members, including the respondent, before deductions, for the year ending December 31, 2001.

****The size of the on-reserve population in the respondent's community of residence based on adjusted 2002 Indian Register counts for the population living on-reserve or on crown land associated with the band. Counts were adjusted for under-reporting and late reporting of births and deaths.

*****The remoteness factor (isolation status) of the respondent's community of residence according to 2002 data provided by First Nations and Inuit Health Branch (FNIHB, Health Canada). Remote isolated = no scheduled flights; isolated = flights, good telephone, no road access; semi-isolated = road access greater than 90 km to physician services; non-isolated = road access, less than 90 km from physician services.

*****Health Transfer Status of the community in which the respondent resides. Data are based on August 2002 data from FNIHB, Health Canada. Primary, secondary and tertiary level services were combined. Not transferred = respondent's community of residence is not part of a health transfer agreement; community transfer = respondent's community of residence has responsibility, through "Health Transfer" for primary and/or secondary and/or tertiary services; multi-community = respondent's community of residence is part of a multi-community health services transfer agreement for primary and/or secondary and/or tertiary services.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 2: Factors Associated* with the Lack of Receipt of Dental Care in the Preceding Year among First Nations and Inuit Adults Aged 18 Years.

Risk Factor or Indicator	Lack of Receipt of Dental Care in the Previous Year	
	Total <i>n</i>	Weighted %
Age group (yrs)		
18-29	3,231	36.6%
30-39	2,764	37.0% (NS)
40-49	2,187	39.1% (NS)
50-59	1,189	44.2% (NS)
60+	1,050	60.2%
Sex		
Male	4,736	46.4%
Female	5,719	35.2%
Education Attainment		
Did not graduate from high school	5,552	45.5%
High school diploma	1,942	38.5% (NS)
College/CEGEP (in Québec)		
/trade/technical/vocational school	2,332	34.2%
Bachelor's degree	463	35.0% (NS)
Graduate degree	52	-
Employment status		
Not working	5,514	45.9%
Part time worker	718	37.6% (NS)
Full time worker	4,078	34.7%
Grouped self-determination indicator**		
Very low	2,646	43.1%
Low	12	-
Moderately low	77	37.6% (NS)
Neutral	828	45.4% (NS)
Moderately high	2,633	45.2% (NS)
High	2,852	38.1% (NS)
Very high	1,407	32.1% (NS)
Reported health status		
Excellent	1,391	33.6%
Very good	2,843	35.0% (NS)
Good	4,010	41.9% (NS)
Fair	1,686	51.0%
Poor	430	48.9%
Disability and activity limitation at home***		
Yes, often	632	50.6%
Yes, sometimes	1,250	43.6% (NS)
No	8,412	39.7%
Remoteness factor of the community of residence****		
Non-isolated	7,743	37.7%
Remote	339	41.9% (NS)
Isolated	1,187	55.6%
Semi-isolated	779	42.5% (NS)

Note:

*Significant at $p \leq 0.001$ using the Chi-squared test.

**Summation of self-determination scores from seven questions with five response options on a Likert scale, ranging from 'strongly agree' = 2 to 'strongly disagree' = -2.

***Limitations in activity due to the presence of a physical or mental condition or health problem. Results pertain to limitations in activity at home. However, findings were also statistically significant for limitations in activity at work or school or during leisure or traveling.

****The remoteness factor (isolated status) of the respondent's community of residence according to 2002 data provided by First Nations and Inuit Health Branch (FNIHB, Health Canada). Remote isolated = no scheduled flights; isolated = flight: good telephone, no road access; se isolated = road access greater than km to physician services; non-isolated = road access, less than 90 km from physician services.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 3: Barriers to Dental Care Access by Selected Respondent's and Community's Characteristics.

<u>DENTAL SERVICES:</u>	Long waiting list	Not covered by NIHB	Can't afford it	Not available	Prior approval for services under NIHB denied	Direct cost of care	Felt services were inadequate	Travel costs	Child care costs	Other cost
Total number	10,441	10,112	10,307	10,549	10,018	10,177	10,095	10,324	10,251	10,060
Weighted % reporting barrier	20.8	17.6	16.9	15.1	14.3	12.5	12.1	11.1	6.2	4.9
Age group										
18 to 29 yrs	21.4	13.2	13.5	16.9	9.0	9.0	7.8	10.6	7.4	4.0
30 to 39 yrs	22.5 (NS)	20.0	18.1 (NS)	15.7 (NS)	16.2	14.1 (NS)	14.7	11.7 (NS)	8.1 (NS)	5.4 (NS)
40 to 49 yrs	21.7 (NS)	23.0	20.2	14.2 (NS)	19.0	15.5	15.7	11.5 (NS)	6.1 (NS)	5.0 (NS)
50 to 59 yrs	20.8 (NS)	20.2 (NS)	21.3 (NS)	13.2 (NS)	19.3	14.9 (NS)	14.3	13.1 (NS)	3.7 (NS)	6.7 (NS)
60 yrs and older	12.8 (NS)	12.0 (NS)	13.1 (NS)	12.8 (NS)	10.5 (NS)	9.9 (NS)	9.3 (NS)	8.3 (NS)	1.2 (NS)	-
Sex										
Male	19.2	15.5	15.4	13.6	12.6	12.0	11.0	9.8	4.4	4.4
Female	22.3 (NS)	19.8	18.5 (NS)	16.7 (NS)	16.2 (NS)	13.0 (NS)	13.2 (NS)	12.5 (NS)	8.1	5.4 (NS)
Educational attainment										
Did not graduate from high school	22.2	14.6	16.2	17.6	12.7	11.9	12.4	12.5	6.5	5.8
High school diploma	19.0 (NS)	16.3 (NS)	14.5 (NS)	12.1 (NS)	12.6 (NS)	11.1 (NS)	9.6 (NS)	10.4 (NS)	7.2 (NS)	3.5 (NS)
Community college/CEGEP/ trade/technical/vocational school diploma	20.0 (NS)	23.9	20.8 (NS)	13.9 (NS)	18.9	14.8 (NS)	14.3 (NS)	9.9 (NS)	5.5 (NS)	4.2 (NS)
Bachelor's degree	18.2 (NS)	24.4	16.1 (NS)	9.7 (NS)	15.2 (NS)	13.0 (NS)	9.3 (NS)	7.4 (CI: 3.8-14.1%)	-	-
Graduate degree	-	-	-	-	-	-	-	(NS)	-	-
Income level*										
Under \$10,000**	21.9	16.4	18.9	16.5	13.6	14.3	12.0	15.2	7.7	6.5
\$10,000 to \$14,999	19.7 (NS)	16.3 (NS)	20.1 (NS)	14.8 (NS)	13.8 (NS)	13.8 (NS)	13.9 (NS)	14.1 (NS)	8.4 (NS)	5.9 (NS)
\$15,000 to \$19,999	16.2 (NS)	15.0 (NS)	12.9 (NS)	12.3 (NS)	11.7 (NS)	9.3 (NS)	12.6 (NS)	10.1 (NS)	5.4 (NS)	3.8 (NS)
\$20,000 to \$29,999	24.5 (NS)	18.8 (NS)	16.9 (NS)	14.2 (NS)	16.0 (NS)	13.5 (NS)	11.5 (NS)	9.1 (NS)	4.4 (NS)	2.9
\$30,000 to \$49,000	19.6 (NS)	23.1 (NS)	14.4 (NS)	15.6 (NS)	16.5 (NS)	11.6 (NS)	13.1 (NS)	6.6	5.7 (NS)	4.6 (NS)
\$50,000 to \$79,999	21.4 (NS)	26.3 (NS)	12.7 (NS)	11.1 (NS)	18.9 (NS)	9.6 (NS)	19.8 (NS)	-	-	-
\$80,000 and over	-	-	-	-	-	-	-	-	-	-

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<u>DENTAL SERVICES:</u>	Long waiting list	Not covered by NIHB	Can't afford it	Not available	Prior approval for services under NIHB denied	Direct cost of care	Felt services were inadequate	Travel costs	Child care costs	Other cost
Household income***										
Under \$10,000**	20.8	20.2	23.0	20.1 (NS)	20.0	17.1	18.8	20.1	12.3	8.9
\$10,000 to \$14,999	20.3 (NS)	17.3 (NS)	22.1 (NS)	14.2 (NS)	14.8 (NS)	14.9 (NS)	12.1 (NS)	16.0 (NS)	7.1 (NS)	6.1 (NS)
\$15,000 to \$19,999	20.9 (NS)	19.6 (NS)	20.6 (NS)	14.4 (NS)	19.3 (NS)	16.4 (NS)	16.4 (NS)	14.2 (NS)	6.8 (NS)	-
\$20,000 to \$29,999	21.5 (NS)	17.6 (NS)	17.6 (NS)	14.1 (NS)	13.2 (NS)	11.3 (NS)	12.8 (NS)	11.8 (NS)	6.5 (NS)	5.0 (NS)
\$30,000 to \$49,999	21.2 (NS)	16.1 (NS)	11.3	12.6 (NS)	10.8 (NS)	9.2 (NS)	12.0 (NS)	7.0	4.8	1.9
\$50,000 to \$79,999	18.1 (NS)	21.6 (NS)	14.2 (NS)	13.3 (NS)	19.2 (NS)	13.3 (NS)	14.1 (NS)	6.2	5.4 (NS)	-
\$80,000 and over	21.7 (NS)	17.9 (NS)	6.5	10.6 (NS)	11.6 (NS)	-	11.2 (NS)	8.1 (NS)	-	-90
Community size****										
Small (<300)	27.5	27.7	32.2	22.7	19.4	24.0	19.8	20.8	9.6	7.5
Medium (300-1,499)	18.5	16.7	16.3	14.9 (NS)	13.6 (NS)	12.5	12.9	11.9	6.3 (NS)	5.0 (NS)
Large (1,500+)	22.5 (NS)	16.4	13.7	13.5 (NS)	14.3 (NS)	9.3	8.7	7.2	5.2 (NS)	3.9 (NS)
Remoteness factor*****										
Remote	44.3	13.8	30.6	45.4	10.2	22.3	26.5	31.6	10.6	-
Isolated	40.1 (NS)	12.1 (NS)	12.4 (NS)	21.2	10.1 (NS)	8.9 (CI:	10.6 (NS)	11.2 (CI:	8.0 (NS)	5.3 (CI:
Semi-isolated	35.6 (NS)	23.5 (NS)	24.8 (NS)	35.0 (NS)	20.1 (NS)	4.1-	20.1 (NS)	5.3-	12.4 (NS)	2.5-
Non-isolated	14.4	18.3 (NS)	16.4 (NS)	10.8	14.6 (NS)	18.3%) (NS)	10.6	21.9%) (NS)	4.8 (NS)	11.2%) (NS)
						16.9 (NS)		19.0 (NS)		10.9 (NS)
						12.2 (NS)		9.3		3.5
Health Transfer Status*****										
Not transferred	19.8	19.3	18.1	14.7	15.5	12.3	12.0	10.1	5.3	4.3
Community transferred	18.1 (NS)	13.8 (NS)	10.9	11.7 (NS)	11.0 (NS)	10.2 (NS)	8.6 (NS)	8.4 (NS)	5.8 (NS)	3.7 (NS)
Part of multi-community transfer	30.9	17.6 (NS)	23.4 (NS)	24.5	15.9 (NS)	18.0 (NS)	19.6 (NS)	21.6	11.4	10.0

Note: Respondents may have given more than one barrier in accessing dental care.

*Includes the respondent's personal income from all sources, before deductions, for the year ending December 31, 2001.

**Includes no income and income loss.

***Total household income from all sources, for all household members, including the respondent, before deductions, for the year ending December 31, 2001.

**** The size of the on-reserve population in the respondent's community of residence based on adjusted 2002 Indian Register counts for the population living on-reserve or on crown land associated with the band. Counts were adjusted for under-reporting and late reporting of births and deaths.

*****The remoteness factor (isolation status) of the respondent's community of residence according to 2002 data provided by First Nations and Inuit Health Branch (FNIHB, Health Canada). Remote isolated = no scheduled flights; isolated = flights, good telephone, no road access; semi-isolated = road access greater than 90 km to physician services; non-isolated = road access, less than 90 km from physician services.

*****Health Transfer Status of the community in which the respondent resides. Data are based on August 2002 data from FNIHB, Health Canada. Primary, secondary and tertiary level services were combined. Not transferred = respondent's community of residence is not part of a health transfer agreement; community transfer = respondent's community of residence has responsibility, through "Health Transfer" for primary and/or secondary and/or tertiary services; multi-community = respondent's community of residence is part of a multi-community health services transfer agreement for primary and/or secondary and/or tertiary services.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 4: Reported Dental Treatment Needed* among Adults in the RHS 2002-03 in comparison to the 1997 First Nations and Inuit Regional Health Survey (RHS).²

Type of dental treatment needed	RHS 1997 ² n=9,870 Weighted %	RHS 2002-03 n=10,262 Weighted %	Increase	RHS 2002-03 Perceived less access to health services compared to Canadians** Weighted %	RHS 2002-03 Difficulties in accessing NIHB services for dental care Weighted %
Cavities filled or other restorative work (e.g. crowns or bridges)	15.4	36.9	2.4×	44.2	27.4
Maintenance (e.g. check-ups or teeth cleaning)	8.5	48.4	5.7×	35.9	21.1
Dental extractions	5.2	12.4	2.4×	41.5	31.8
Fluoride treatment	---***	13.8	---	42.4	30.9
Periodontal work	0.4	5.6	14.0×	45.3	42.1
Prosthetic work (e.g. dentures, including repair and maintenance)	5.4	14.0	2.6×	40.2	30.8
Orthodontic work (braces)	---***	3.6	---	38.6	36.1
Urgent (dental pain or other problems requiring immediate attention)	0.2	5.5	27.5×	55.7	45.5

*Multiple treatments accepted. Includes respondents' rating of access to health care services compared to Canadians and difficulty accessing dental services provided through the Non-Insured Health Benefits Program (NIHB) of Health Canada to status First Nations and Inuit persons.

**Rating of access to health care with respect to Canadian population (less access vs. better or same level of access).

***Information not available in the 1997 RHS.²

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Chapter 8

Physical Activity, Body Mass Index, and Nutrition

Abstract

Physical activity reduces the risk of chronic diseases and conditions. In conjunction with appropriate diet, it also helps to maintain a healthy body weight. This chapter examines physical activity and diet in relationship to body mass amongst the First Nations adult population.

One fifth of First Nations adults participate in at least 30 minutes of physical activity most days of the week, with walking, fishing and berry-picking being the most frequently reported types of activities. One-third reported always or almost always eating a nutritious, balanced diet, and over half reported that they often consume traditional protein based foods. Physical activity and diet are associated with other lifestyle factors. Relationships were observed between physical activity and social support, and between diet and suicide ideation, community progress and balance in the physical, emotional, mental and spiritual aspects of life. One quarter of adults reported a healthy weight, while over one-third are overweight. Roughly another third are obese. Obesity is associated with lower general health status and a higher prevalence of chronic conditions.

Strategies addressing physical activity and nutrition are required to influence a variety of other sectors in holistic health systems, and to target different population groups in culturally appropriate ways. Periodic repetition of the RHS is required to assess the effectiveness of such strategies over time.

Introduction

Regular physical activity is recognized for its role in preventing several chronic and physical conditions, including coronary heart disease, hypertension, obesity, type II diabetes, osteoporosis, certain site-specific cancers (such as colon cancer), and age-related functional limitations.¹ Physical activity also plays an important role in maintaining mental health. For instance, increasing physical activity is a factor in reducing anxiety, depression and tension, and in positively affecting the emotional state of both young and old people.² Data on physical activity rates in Canada over the last 20 years reveal that the general adult population has become more active in their leisure time.³ Despite this trend, physical inactivity still remains a public health issue, particularly among women, older adults and lower income groups.⁴ Given parallel increases in body mass index during this same 20-year period,^{5,6} Canadians appear to have a net positive energy balance (which occurs when an individual consumes more calories from food energy than they expend from activity), contributing to trends toward being overweight and obese. This balance is affected by metabolic or genetic factors,^{7,8} environment, and modifiable behaviors such as diet and physical activity.

Unfortunately, this imbalance has caused escalating rates of overweight and obese adults in Canada.⁹ This trend may be a result of reduced energy expenditure due to improved technology and suburban environments favouring motorized vehicles,¹⁰ however, it may also be due to excess consumption or unbalanced caloric intake of foods that have replaced nutritional choices that were more common in the past.¹¹ In some First Nations communities in Canada, traditional Aboriginal subsistence activities (e.g., hunting, trapping, fishing, gathering) remained primary activities into the 1960s. After that time, a combination of decreased reliance on traditional food and increased reliance on governmental subsidies resulted in decreased participation in traditional physical activities. Furthermore, store-bought foods became the norm as a source of food supply.¹² Although nutrition data is limited for Aboriginal peoples, existing data for the general population indicate that fruit and vegetable consumption is negatively associated with being overweight and that total energy consumption for Canadians has increased via carbohydrate intake (particularly soft drink consumption.)¹³

Although there is a paucity of data on energy intake and expenditure among First Nations peoples, there is reason to believe that the above analysis of these factors as they apply to the broader Canadian population would also hold for Aboriginal peoples. Studies have found that traditional diets and physical activity patterns were associated with reduced prevalence of obesity compared to non-traditional lifestyles. This suggests that a way of life that reflects traditional lifestyle practices might help to reduce obesity, as well as

other illnesses such as cardiovascular disease and type II diabetes.^{14,15}

Certain chronic diseases are associated with obesity and being overweight. Non-communicable or chronic diseases are the major cause of death, representing 59% of deaths worldwide.¹⁶ Three preventive factors—diet, physical activity and avoidance of tobacco use—play a significant impact in reducing chronic disease.¹⁷ These factors are modifiable, meaning that a person has control over them. Thus, modification of these preventive factors translates into reducing the chance of developing chronic disease. This is significant because research shows that 8 out of 10 Canadians have at least one of the following modifiable risk factors and/or conditions: smoking, physical inactivity, being overweight, or having high blood pressure or diabetes.¹⁸

Data reveals that Canadians of Aboriginal descent have consistently higher rates of obesity compared to the overall Canadian population.^{19,20,21} This is especially true for First Nations women, who are more likely than other Canadian women to report chronic diseases associated with being overweight, such as heart disease and stroke.²²

This chapter examines physical activity and aspects of nutrition in relation to body mass among the adult First Nations population. It also makes recommendations to help guide First Nations peoples themselves, as well as decision makers in First Nations communities and policy developers, in shaping personal and national strategies for healthy living.

General Approach

It is important for First Nations to examine health issues from a multi-faceted, holistic approach, which takes the following into account: individual aspects (awareness, attitudes, and behaviours); social factors (social support from family, friends, and peers); environmental factors (physical environment, geography, and accessibility); societal factors (culture and community); and policy related factors (at a band government level). All these factors work together, or are harmonized, to affect a given behaviour. This multi-faceted approach, which has been presented in scholarly literature over the last five to ten years, is similar to the cultural framework presented in this technical report. As outlined in detail in the introductory chapter at the beginning of this report, the First Nations' cultural framework embodies the "total person" and the "total environment." This framework includes: an individuals' spiritual, emotional, mental, and physical well-being; their culture's values, beliefs, identity, and practices; their community and relationship to the physical environment; and their connectedness to their family. Put another way, this chapter describes physical activity, nutrition and body mass index patterns amongst First Nations. Then it goes on to link these aspects to qualities that are relative to a broader First Nations specific cultural framework.

Results

Physical Activity

Walking is cited as the most frequently reported physical activity in which First Nations adults participated over the year prior to the survey (89.8%)ⁱ, followed by fishing (42.8%), berry picking or other food gathering (38.1%), swimming (37.7%), bicycling (35.0%), and hunting or trapping (31.9%). Roughly one in four adults reported running or jogging (28.3%), using weights or exercise equipment (27.9%), forms of dancing (27.1%), competitive, group or team sports (26.4%) and hiking (24.2%).

Gender differences appear for certain physical activities. Women are more likely than men to report participating in walking, berry picking or other food gathering activities, dancing and aerobics or fitness classes.ⁱⁱ Men are more likely than women to cite participation in most other activities, including: fishing, hunting, cycling, weight training, running, competitive or team sports (such as baseball, hockey, or lacrosse), hiking, rollerblading, golfing, skating, canoeing, snowshoeing, skiing, martial arts, and skateboarding. Table 1 summarizes the gender differences in reported physical activities.

Table 1. Prevalence of physical activities, overall and by gender (n=10,712)

Rank	Activity	Total	Men	Women
1	Walking	89.8%	88.0%	91.7%
2	Fishing	42.8	56.2	28.7
3	Berry picking or other food gathering	38.1	31.9	44.6
4	Swimming (NS)	37.7	35.8	39.8
5	Bicycling	35.0	41.5	28.3
6	Hunting or trapping	31.9	49.2	13.8
7	Running	28.3	37.0	19.1
8	Weight or exercise equipment	27.9	37.8	17.6
9	Dancing	27.1	21.2	33.3
10	Competitive sports	26.4	35.0	17.3
11	Hiking	24.2	31.7	16.3
12	Golf	17.3	24.2	10.0
13	Skating	16.2	23.3	8.7
14	Canoeing	14.5	19.0	9.7
15	Bowling (NS)	13.4	13.2	13.6
16	Aerobics or fitness classes	8.9	5.5	12.4
17	Rollerblading	5.6	7.9	3.2
18	Snowshoeing	5.4	8.4	2.2
19	Skiing	4.6	6.0	3.1
20	Martial arts	2.6	3.4	1.8
21	Skateboarding	1.7	2.9	0.5

ⁱ To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

ⁱⁱ Comparisons between groups or categories are statistically significant except where "NS" —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

Regardless of age, walking is the most frequently reported physical activity. Although rates of walking, fishing, hunting and trapping, aerobics or fitness classes, snowshoeing, skateboarding and berry picking or food gathering activities do not differ by age, participation in physical activities is generally lower in older age groups. Table 2 summarizes the age-related differences in participation in physical activities.

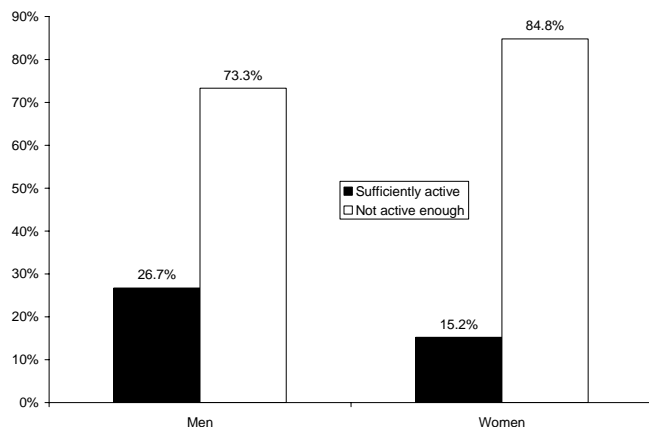
Table 2. Prevalence of physical activities by age* (n=10,678)

Activity	Age group (years)				
	18-29	30-39	40-49	50-59	60+
Walking	90.8%	89.9%	89.5%	91.1%	85.4%
Fishing	45.3	44.6 (NS)	45.5 (NS)	38.7 (NS)	30.4
Berry picking or food gathering	31.6	39.0	44.8	39.4 (NS)	40.8 (NS)
Swimming	51.5	43.2	31.8	23.9	10.8
Bicycle riding	52.9	38.7	25.5	14.5	14.3
Hunting, trapping	33.0	32.6 (NS)	34.1 (NS)	30.5 (NS)	24.9
Running	45.5	27.2	22.4	12.3	7.9
Weights, exercise equipment	41.6	27.1	22.3	15.7	12.2
Dancing	35.0	27.0	26.3	21.7	10.8
Competitive or group sports	45.9	28.5	16.2	6.1	—
Hiking	26.9	24.6 (NS)	28.9 (NS)	17.7	13.9
Golfing	24.3	17.7 (NS)	15.6 (NS)	11.0	—
Skating	25.5	18.8 (NS)	11.6	4.6	—
Canoeing	17.4	12.5	16.4 (NS)	12.4 (NS)	9.3
Bowling	19.5	12.6	11.7	8.1	6.1
Aerobics, fitness class	11.5	7.8 (NS)	8.2 (NS)	7.5 (NS)	— (NS)
Rollerblading, in-line skating	12.5	4.3	—	—	—
Snowshoeing	4.9	4.5 (NS)	7.8 (NS)	6.2 (NS)	3.5 (NS)
Skiing	7.7	4.3	4.1 (NS)	—	—
Martial arts	3.8	2.7 (NS)	2.3 (NS)	— (NS)	— (NS)
Skateboarding	3.9	—	—	—	—

— Data suppressed due to insufficient sample size.

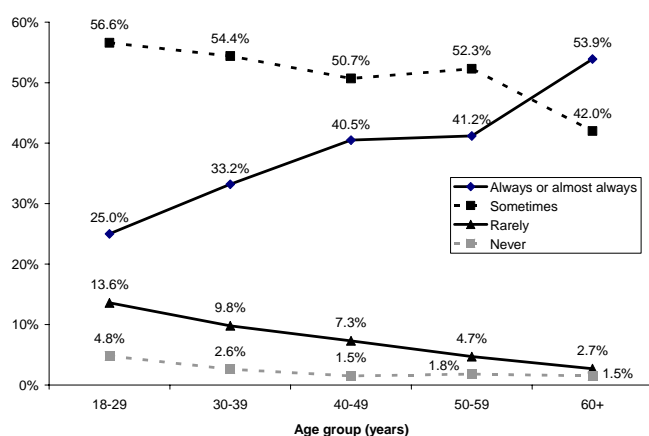
* Significantly different from 18-29 year olds

Guidelines for recommended frequency and intensity of physical activity and exercise have evolved over time. Commonly accepted guidelines^{23,24} require the inclusion of frequency, intensity and duration in the calculation, and they generally recommend a minimum of 30 minutes of moderate or vigorous intensity on most days of a week. In the RHS, a criterion for sufficient activity was defined as reporting at least 30 minutes of moderate to vigorous activity (defined in the survey as physical activity "...that results in an increase in your heart rate and breathing") for 4 or more days of the week. Using this criterion, 21.3% of First Nations adults perform sufficient physical activity to meet these guidelines (See Figure 1). Men are more likely than women to report sufficient activity to meet these guidelines (26.7% for men versus 15.2% for women). These gender differences are most apparent among younger adults and those 60 and older.

Figure 1. Proportion of adults reporting sufficient activity by gender (n=7,470)

Nutrition

Roughly one-third of First Nations adults report that they always or almost always eat a nutritious and balanced diet (35.4%), whereas 52.7% only sometimes do. The remaining 11.9% either rarely (9.1%) or never (2.8%) eat a balanced and nutritious diet. The proportion of adults always or almost always eating a nutritious and balanced diet increases generally with age (see Figure 2).

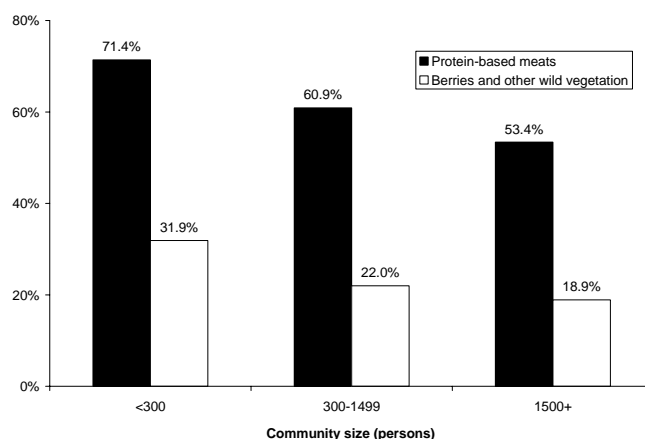
Figure 2. Proportion of adults reporting a healthy diet by age (n=10,714)

In terms of dietary intake, 50.0% of adults consumed coffee or tea several times a day, 19.2% once a day, with a further 14.3% citing a few times a week. Moreover, 17.8% cited consumption of soft drinks several times a day, 14.7% once a day, and 33.0% stated that they consume this type of beverage a few times a week. Of higher calorie foods, 3.6% of adults state that they consume fast foods several times a day, 4.3% once a day, 31.5% a few times a week and 34.9% once a week. Moreover, 2.8% of adults report consuming cakes, pies, cookies, candy, or chocolate several times a day, 5.8% state once a day, 29.6% a few times a week and 28.5% once a week. In addition, 4.2% of individuals say they eat snack foods such as French fries and potato chips several

times a day, 5.6% once a day, 38.3% a few times a week and 30.9% once a week. Roughly one-third of adults report that they add salt (35.3%) or sugar (37.1%) to their food several times a day.

Men are more likely than women to consume fast food, sweets (such as cakes, pies, cookies, candy or chocolate), French fries, potato chips, or pretzels once a day. Generally speaking, younger adults are more likely than older adults to consume soft drinks, French fries, potato chips, and pretzels.

In terms of the consumption of traditional food items, 59.3% of adults report that they often consume protein-based foods, such as game and fish, whereas 21.8% state that they often consume berries and other types of vegetation. In addition, two out of five adults (42.2%) often eat other First Nations foods, such as fry bread, bannock or corn soup. There are no gender, age, income, or education related differences found in the consumption patterns for traditional or cultural foods. Adults in small communities (<300 residents) are more likely than residents in larger communities (≥300 residents) to consume protein-based traditional foods (71.4% for small communities versus 53.4%-60.9% for larger communities); the same is true for berries and other vegetation (31.9% for small communities versus 18.9%-21.9% for large communities – see Figure 3).

Figure 3. Proportion of adults often consuming traditional foods* by community size (n=10,962)

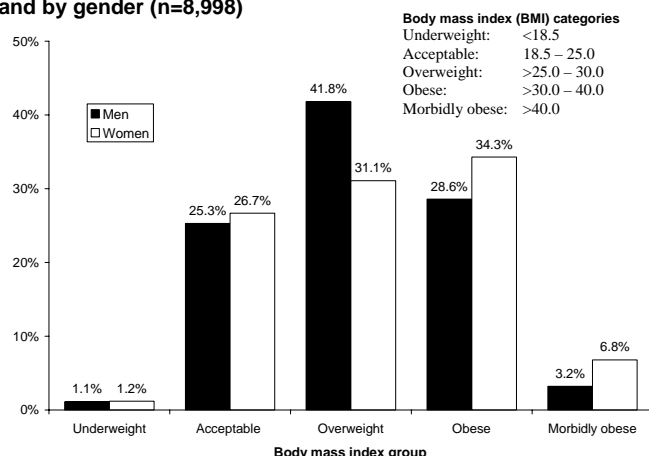
* Based on those who often eat traditional meat or fish products

Body Mass Index

For the purposes of these analyses, body mass index (BMI) was classified according to Canadian guidelines.²⁵ These BMI guidelines are an update of the 1988 Canadian classifications, which were recently revised by the Public Health Agency of Canada (formerly Health Canada) and a team of research experts, as a result of the World Health Organization's recommendations for international standards for adults. According to Canadian guidelines, 25.9% of First Nations adults are considered to be of normal weight, having the least risk of developing health problems (Figure 4). However, 37.0% of First Nations adults are considered

overweight. An additional 31.2% are deemed obese, and a further 4.8% are considered morbidly obese, which entails an extremely high risk level for developing health problems. In comparison, 49% of Canadians in general (age 20–64) are considered to be normal weight, 33% are considered overweight and 15% are considered obese.²⁶

Figure 4. Distribution body mass index among adults, overall and by gender (n=8,998)



Overall, First Nations men are more likely than women to be overweight (41.8% for men compared to 31.1% for women). This is particularly true for adults aged 18–29 (40.6% for men compared to 24.4% for women) and those 40–49 years of age (48.5% for men compared to 32.2% for women). However, as shown in Figure 4, women are more likely than men to be obese (28.6% for men compared to 34.3% for women) and morbidly obese (3.2% for men compared to 6.8% for women).

Generally speaking, younger adults (18 to 29 years of age) are less likely than adults older than 30 to be obese or morbidly obese.

Relationships between physical activity, nutrition and body weight

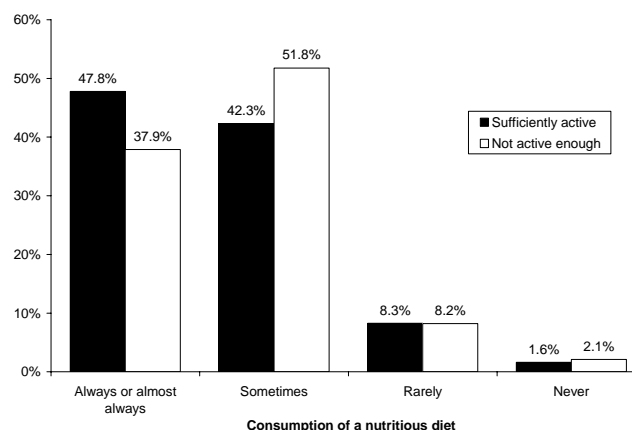
Adults who are sufficiently active (47.8%) are more likely than others (37.9%) to always or almost always eat a nutritious and balanced diet. In addition, adults who are sufficiently active are more likely than others to report that they often consume berries and wild vegetation.

Adults who are obese are more likely than those who are of acceptable weight to consume coffee or tea several times a day, yet are more likely to never or hardly ever consume snack foods such as French fries, potato chips, pretzels, or fry bread. Obese individuals are more likely to report that they never or hardly ever add sugar to their food compared to individuals of normal weight.

There is an apparent interrelationship between diet, body mass and physical activity. Among individuals who are obese, those who are sufficiently active are more likely (58.2%) than those who are insufficiently active (33.8%) to

report always or almost always eating a balanced and nutritional diet.

Figure 5. Proportion eating a nutritious diet by sufficient physical activity (n=7,402)



Physical activity, nutrition and body weight: a cultural framework perspective

This section examines significant relationships of physical activity, nutrition and body weight to elements of the cultural framework outlined in the introductory chapter. Table 3 provides an overview of these relationships.

Table 3. Relationship of key indicators with physical activity, diet and body mass index (BMI)

	Physical activity	Diet	BMI
Individual factors			
Age	✓	✓	✓
Gender	✓	✓	✓
Community size	x	✓	x
Health factors			
General Health Status	✓	✓	✓
Number of specific chronic conditions	x	x	✓
Physical activity	n/a	✓	x
Diet	✓	n/a	x
BMI	x	x	n/a
Smoking	x	✓	✓
Alcohol	✓	x	x
Mental health factors			
Balance with 4 aspects	✓	✓	x
Suicide ideation	x	✓	x
Societal factors			
Progress in community	x	✓	x
Social factors			
Social support	✓	✓	x

✓ Significant association at the p=.05 level

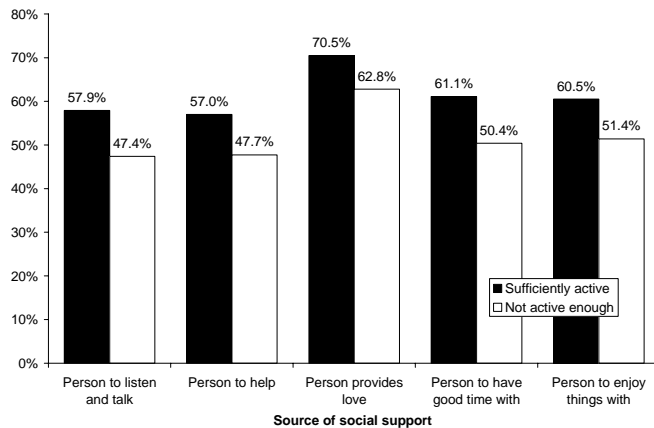
x no observed association

n/a not applicable

Adults who meet the criteria for being sufficiently active are more likely (21.9%) than those who do not (12.4%) to consider themselves to be in excellent health, and are less

likely to be in poor health (1.4% of those “sufficiently active” reported poor health, versus 4.4% of those who did not). In addition, adults who are sufficiently active are more likely than others to report that they always have social support, as shown in Figure 6.

Figure 6. Type of social support* received by sufficient physical activity (n=7,339)



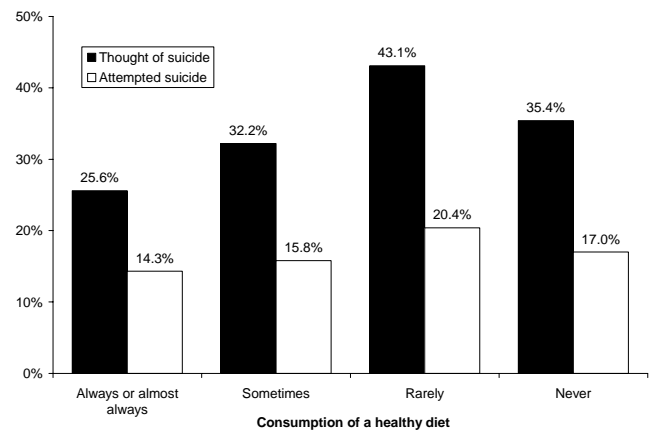
* % reporting available *all of the time*

The “sufficiently active” adults are also more likely to report that they have 5 or more drinks on one occasion, more than once a week. Individuals who are sufficiently active (40.1%) are more likely than those who are not (32.7%) to report a high level of balance of the mind, spirit, heart and body.

Adults who always or almost always eat a balanced diet are more likely than those who sometimes or rarely do to cite excellent health (19.4% those who always do versus 10.4% of those who sometimes do, and 5.8% of those who rarely do). The same pattern appears for those reporting very good health. Almost two out of five adults (38.5%) who always or almost always eat a nutritious diet also smoke on a daily basis, compared to 48.0% of those who sometimes eat nutritiously, 57.1% of those who rarely do, and 58.3% of those who never eat a balanced or nutritious diet.

Adults who always or almost always eat a nutritious diet are more likely to state that they have social support than those who rarely eat a nutritious diet. Moreover, individuals who always or almost always eat a nutritious diet (42.6%) are more likely to score highly on physical, emotional, mental and spiritual balance than those who never do (21.5%), and are less likely to have thought of suicide (25.6% of those always having a good diet compared to 43.1% of those who rarely do). Although not significant, a similar pattern was observed among those who attempted suicide: 14.3% of those always having good diet had made suicide attempts, compared to 20.4% of those rarely having a healthy diet.

Figure 7. Proportion eating a healthy diet by suicide attempt and ideation* (n=10,146)

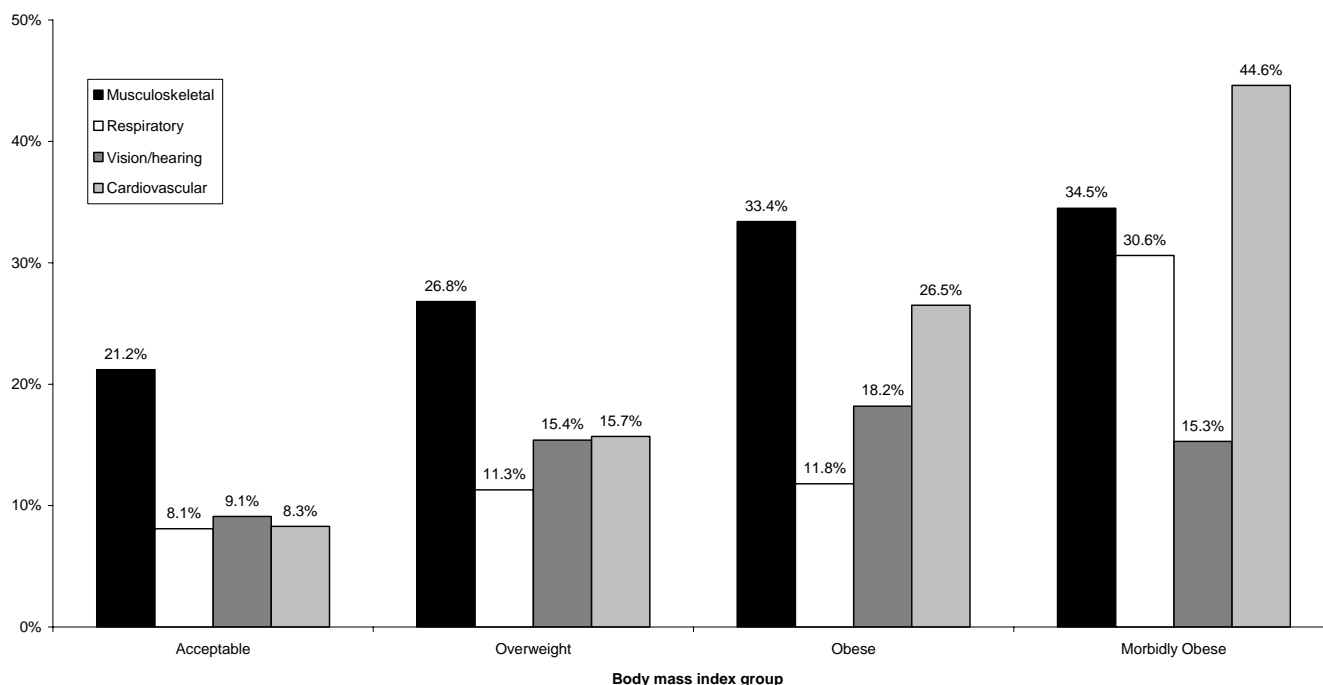


* The relationship between eating a healthy diet and suicide ideation is non-significant

With regard to spirituality, people who always or almost always eat a nutritious diet (20.2%) are more likely than those who never do (7.0%) to report that their community is making good progress in traditional ceremonial activities.

Adults who are obese are less likely than those with an acceptable weight to state that they are in excellent health (9.2% of those who are obese compared to 16.7% of those with an acceptable weight), as well as being less likely to report very good health (24.1% versus 31.4% respectively). However, obese adults are more likely to say they are in fair health (19.5% of obese adults versus 11.3% of those of normal weight). With the exception of the pattern appearing for excellent health, the same pattern appears for adults who are morbidly obese as for those who are obese, in relation to adults of normal weight. Morbidly obese adults are also more likely to say they are in poor health than those of an acceptable weight (10.4% of morbidly obese adults versus 2.6% of those of normal weight).

Adults who are obese or morbidly obese are more likely than those of normal weight to report one or more chronic health conditions (71.1% of morbidly obese adults and 65.7% of obese adults, compared to 43.1% of those of acceptable weight). This pattern is most apparent for musculoskeletal, respiratory and cardiovascular conditions, as illustrated in Figure 8.

Figure 8. Prevalence of chronic conditions by body mass index and type of condition (n=8,998)

Obese and morbidly obese First Nations adults are less likely than those of acceptable weight to be daily smokers (39.5% of the obese and 34.0% of the morbidly obese, compared to 53.0% of those of acceptable weight). No differences appear between adults of different body weight with respect to social support, which is defined as having someone to talk to or confide in, someone to count on when they need help, someone who shows love and affection, someone to have a good time with, or someone to take them to the doctor. Similarly, no relationships exist associating adult body weight with community perception of progress in First Nations control over community health services, availability of recreation or leisure facilities, or traditional ceremonial activity for adults.

Discussion and Recommendations

Research has shown that off-reserve First Nations adults are equally as likely to be overweight as the rest of the Canadian population, yet 1.8 times as likely to be considered obese.²⁷ The finding that First Nations women are more obese and morbidly obese than the general population is in accordance with other research.²⁸ The high rates of overweight and obese people reflected in the RHS data are of great concern because they mean a greater risk of health problems among First Nations adults compared to other Canadians. For adults, it is recognized that waist circumference is better able to predict health risk than that predicted by body mass index alone. It is recommended that for adults, a combination of body mass index and waist circumference be used to classify obesity-related health risk.²⁹ Strategies for diet and physical activity are part of the solution to balancing energy intake with

energy expenditure. These strategies need to be culturally appropriate. For example, diet-related strategies need to take access to or lack of traditional foods into account. Strategies for staying active should consider physical activity in all aspects of daily life (from berry picking to sports and fitness classes).

Although pervasive in the population as a whole, physical inactivity and poor quality diet are more prevalent in certain population segments than in others. Indeed, certain physical activities are more popular among certain population groups than others, and these differences need to be reflected in the development of strategies. For example, participation in team sports and activities of greater intensity are more prevalent among men and younger adults, whereas individual activities of moderate intensity are more popular with women. Walking remains prevalent among both men and women and among all age groups. These patterns are consistent with other national data^{30,31} and need to be considered in developing policies and strategies targeting certain groups. The relationship noted between physical activity and social interaction (having someone to have a good time with and having someone to do something enjoyable with all of the time) suggests that activities involving social interaction, like walking groups, should be promoted. Social networks focused on certain physical activities that appeal to First Nations adults may result more often in the pursuit of healthy lifestyles.

The nutrition data gathered by the RHS is consistent with another Canadian study examining food intake and food habits of adults and adolescents. The RHS and “Canada’s

Food Guide to Healthy Eating” both found large contributions to carbohydrate and fat intake from “other” foods, including sweetened drinks, desserts, candies, oils, and potatoes.³² In the Canada’s Food Guide study, these types of “other” foods were the prevailing source of energy for youth and adults. An adapted version of the “Food Guide” could be promoted, and might include examples of traditional foods and suggested amounts of “other” foods.

The finding that adults who are obese and sufficiently active are more likely to report a nutritious and balanced diet than insufficiently active obese adults is intriguing. It is recognized that these data are self-reported and as such represent perceptions of activity and diet. However, the finding suggests that increasing activity may be a means of encouraging improvements in diet and creating a more healthy lifestyle overall within this at-risk group. Alternatively, it could also suggest that a healthier diet makes one more inclined to physical activity. As a lifestyle choice, these types of factors influence and reinforce each other. Much more work is required to determine absolute amounts of physical activity and dietary nutrients before understanding issues related to achieving energy balance in First Nations adults.

Social and environmental policies required to increase physical activity and improve diet are dependent upon other segments of society (e.g., agriculture, transportation and recreation). Therefore, strategies for physical activity and nutrition are required to influence actions in different sectors. Although independent strategies for individuals are useful, a common framework should be considered which harmonizes factors such as physical activity, nutrition, and tobacco reduction strategies. Such a framework would aim to improve interventions for population segments common to all strategies.³³ Furthermore, the observed association between physical activity and nutrition suggests that changes adopted to improve health in one lifestyle factor may contribute to a healthier lifestyle overall. In this regard, the association between higher rates of smoking among those of ‘normal’ weight versus those of obese people is troubling. Is smoking being used for weight control? If so, how can weight concerns be addressed among smokers as part of a tobacco cessation strategy? Finally, consideration of potential protective factors in a healthy living strategy must include more than physical activity, nutrition, and tobacco cessation strategies; other factors to be considered include education and income levels, community opportunities, physical environment and social support.

Basically, First Nations are moving towards a model that ensures that the 4-dimensional aspects of the “total person” and “total environment” are considered when developing strategies for First Nations adults. A cultural perspective is essential in promotion strategies, to understand barriers relevant to the population and for the interpretation of definitions and meanings.³⁴ A list of recommended

approaches to increasing the physical activity of adults in the more general population is available.^{35,36,37} These approaches could be vetted with community Elders, school officials and recreational service providers, to see what is culturally appropriate for certain First Nations communities, depending on their size, location, and accessibility to opportunities.

Reliable baseline data involving food intake and diet quality—and their determinants, including food insecurity—should be established and monitored on a regular basis. This would ideally include the collection of objective measures of energy intake. These data are lacking in First Nations communities. Monitoring of physical activity levels should continue, and self-reported data should be expanded to include total physical activity across domains, to provide more objective measurements of energy expenditure. Dietary and physical activity data are essential in designing appropriately targeted strategies, and regular monitoring on these and body mass indices would provide valuable information in the possible development of strategies addressing certain key public health concerns among First Nations adults.

Notes to Chapter 8

1. U.S. Department of Health and Human Services, *Physical Activity and Health: A Report of the Surgeon General* (Atlanta, Ga.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996).
2. Ibid.
3. C. L. Craig et al., 2004, Twenty-year trends of physical activity among Canadian adults, *Canadian Journal of Public Health*, 95, 1: 59-63.
4. Ibid.
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Chapter 9

Non-Traditional Use of Tobacco (Smoking)

Abstract

The use and misuse of non-traditional (commercial) tobacco by First Nations people negatively affects their well-being, directly and indirectly. To provide successful tobacco-cessation programs, we must understand the physical effects of first and second-hand smoking, and the profiles of smokers and non-smokers.

This chapter presents information about First Nations smokers, smoking behaviour and tobacco's impact on First Nations health. Using data from nationwide and regional studies in Canada, smoking behaviour and the effects of smoking are compared between First Nations the nation as a whole, and between different First Nation groups.

Two questions from the First Nations Regional Longitudinal Health Survey (RHS) are looked at simultaneously. For example, gender and smoking status will describe the frequency of men and women (gender) and their smoking status (current smoker, former smoker, or non-smoker). We also used input from a major provincial strategy that is leading tobacco-wise awareness with First Nations communities as a part of cancer prevention. The reported relationships between tobacco and lifestyle present findings that may possibly be particular to First Nations communities.

In general, the prevalence rate of smoking by First Nations in Canada is 58.8%; 17.6% never smoked. Younger First Nations adults (less than 50 years old) report the highest rates of daily smoking.

Pregnant First Nations women match the general First Nations population in terms of smoking prevalence (58.8%), but they have a higher representation in the former smoker category (33.8%) than women who are not pregnant (22.8%). Pregnant women are also more likely to be occasional smokers (25.5%) than average female smokers (12.5%).

On average, the former First Nations smoker quit at 32 years old. Both men and women reported the same reasons for stopping. The desire for a healthier lifestyle was overwhelmingly the main reason (63.5%), followed by greater awareness (30.4%), a health condition (29.3%), and respect for loved ones (28.1%). Abrupt withdrawal (cold turkey) was the cessation method that applied to most often to former First Nations smokers (88.5%).

Community planners and health promoters could plan and implement more successful First Nations non-smoking programs if they had more knowledge, such as further analyses on methods and motivation for smoking cessation, and on the reasons non-smokers abstain. A detailed analysis on the length of time First Nations people consume commercial tobacco may also be useful. Smoking and the links to health conditions, nutrition and physical activity is a comprehensive undertaking that is beyond the scope of this chapter but is recommended as a detailed analysis on First Nations health status.

Introduction

Contemporary First Nations stem from a unique, historical and ongoing Indigenous way of life that includes a relationship with tobacco. To study the differences of First Nations traditional tobacco use and commercial tobacco is an undertaking that could utilize many approaches in order to appreciate the historical relationship and current practices.¹

This chapter, however, is written with the use of statistics to describe the behaviours of First Nations with respect to commercial tobacco. The statistics used most often are frequency distributions (in this case two questions from the survey are looked at simultaneously). For example, gender and smoking status will describe the frequency of men and women (gender) and their smoking status (currently smoke, former smoker or non-smoker). In general, this chapter discusses the descriptions of how First Nations smokers and non-smokers are living in their communities in relation to non-traditional tobacco use.

One should be aware of the specialized vocabulary used in the chapter to describe commercial tobacco use. This vocabulary is used because we are talking about groups of people and sets of behaviours. For example instead of the common term 'quit' the term, 'cessation method' is used because it captures multiple methods. 'Non-traditional use', 'recreational use', 'tobacco abuse' and the 'misuse of tobacco' are all used in describing commercial tobacco use in the First Nations context. The ways smokers are identified includes: quitters, former smokers, former daily smokers, former occasional smokers, daily smoker, occasional smokers and/or never, ever smokers. The term 'initiation' refers to the age smoking began.

Literature Review

Sparse data collection on the rates of smoking by First Nations people in Canada began roughly in 1970-72² and subsequent studies took place in 1988³, 1991, 1997 and 2001 by various federal departments as well as the First Nations Regional Longitudinal Health Survey (RHS). Other studies, although not national in scale contribute to the body of data on smoking rates in First Nations.

A Nutrition Canada study (1970-1972) found a 59.5% smoking rate for First Nations men and 56.4% for First Nations women.⁴ Pregnant Indian women from the 1970-1972 nutrition survey reported a smoking rate of 63.5%.⁵ Some population data are available on First Nations population from the 1981 and 1986 census; however no national information is available on tobacco use.

An unpublished Medical Services Branch survey collected in 1988 on breast-feeding found various rates of maternal smoking; 54.1% of Indian women smoked before pregnancy, 49.1% smoked during pregnancy and 49.3% smoked after

pregnancy.⁶ No other details were found about this sample or data collection methodology.

Some tobacco use information is available from the 1991 *Aboriginal Peoples' Survey*. For 1991, based on the sample alone 45.8% of Aboriginal adults 15 years and older in Canada were smokers. Examining the selected characteristics for North American Indians (NAI) a rate of 41.4% was calculated based on population figure of 288,365 NAI 15 years and older.⁷ A preliminary custom table on 'North American Indians' from the APS 2001 shows no change in the 57% smoking rate on-reserve.⁸ A national-based survey with improved sampling of on-reserve populations was the (FNIRLHS) survey which reported a 62% prevalence of First Nations smokers in 1997.⁹

In 1996/97 the National Population Health Survey (NPHS), reported that 29% of adults aged 15 and over were smoking, slightly lower than the 31% smoking prevalence observed among adults aged 15 and over in the in 1994/95 (Cycle 1). The Canadian data collection in 2003, reports a 19% smoking rate from the Canadian Community Health Survey.¹⁰

Interpretive Methods

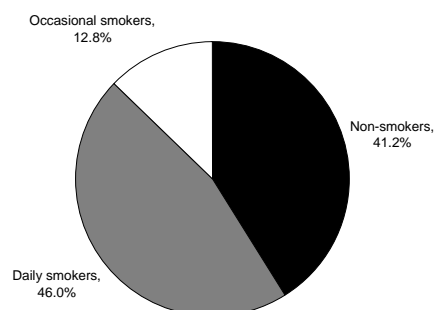
This chapter presents information about the tendencies, and characteristics of First Nations smokers as well as the non-smokers to profile differences in lifestyle. Our efforts to provide helpful information to community workers and planners led us to seek input from a major provincial strategy that is leading tobacco-wise¹¹ awareness with Aboriginal communities as a part of cancer prevention. The reported relationships are not caused by the use tobacco, but the information relating to tobacco and lifestyle present possible associations particular to First Nations communities.

Results and Discussion

General smoking trends

In general, the prevalence rate of smoking by First Nations in Canada is 58.8%. Most of these smokers smoke on a daily basis.

Younger First Nations adults (i.e. less than 50 years old) report the highest rates of daily smoking. The data demonstrates that First Nation non-smoking status is highest among seniors 60 years and older, however, 23.5% of this group report daily smoking.

Figure 1. Smoking status of First Nations (n=10 827)**Table 1. Smoking status of First Nations adults (%) by age group (n=10 790)**

Smoking status	Age group (years)					Total
	18-29	30-39	40-49	50-59	60 +	
Non smoker	30.3	36.3	39.2	55.2*	71.9*	41.2
Daily smoker	53.9	49.1	49.6	33.6*	23.5*	46.0
Occas. smoker	15.9	14.6	11.2	11.2	4.6*	12.8

* significantly different than younger age groups.

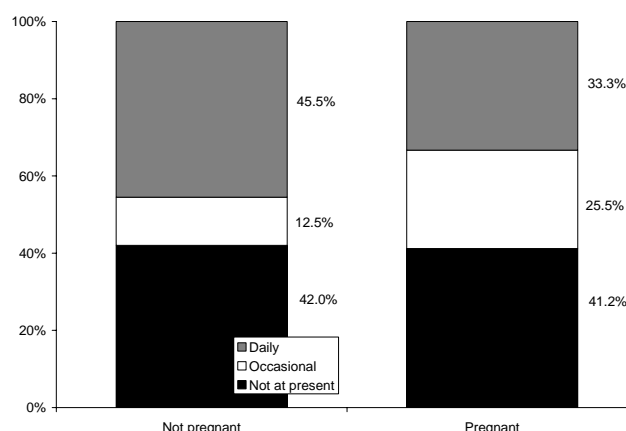
Pregnant women

Pregnant First Nations women match the general population of First Nations in terms of smoking prevalence (58.8%). Pregnant women did however, respond significantly ($p<0.003$) different than non-pregnant women about their smoking status. Pregnant women have a higher representation in the former smoker category (33.8%) than women who are not pregnant (22.8%). Pregnant women also differed with respect to daily or occasional smoking status: twice as many pregnant women fell into the occasional smoking category (25.5%) than the average rate of occasional female smokers (12.5%). Although 45.5% of non-pregnant women are current daily smokers and 33.3% of pregnant women are daily smokers, these differences are not statistically significant. Nonetheless the information may support the positive impacts of maternal smoking health promotion/awareness programs for First Nations.¹²

Former Smokers

This section of the chapter relates to respondents who are former smokers that, which is First Nations who at the time of survey were not smokers but who responded that they previously smoked. Here we discuss age of initiation and when (and how) cessation occurred.

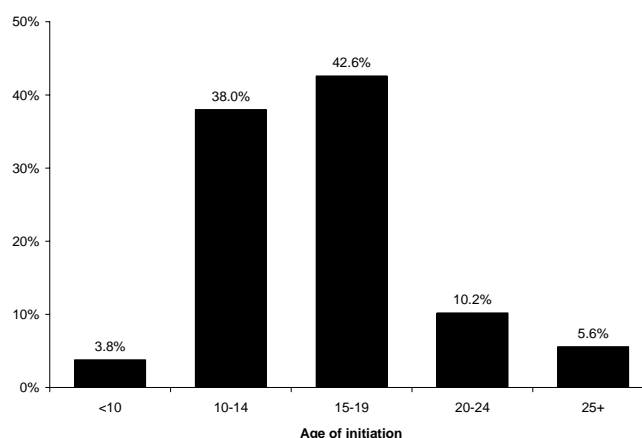
The rate of non-smokers is 41.2%, see Figure 1. Most former smokers were daily smokers (13.7%) or occasional smokers (9.1%).

Figure 2. Pregnant and not pregnant First Nations by smoking status (n=5 777)**Table 2. Distribution of non smoking status for First Nations (n=4 325)**

Non-smoking status	Percent
Former smokers	
Daily	13.7%
Occasional	9.1%
Never smoked	17.6% *
Total	40.4%

Initiation

The majority of the former smokers began smoking cigarettes between the ages of 12 and 16. The initiation rate at 13 years of age is over three times greater than the rate seen at 11 years: 11.4% versus 3.4%) On average the former First Nation smoker began smoking at 16 years old (mean= 15.83: female mean=16.25; male mean=15.42).

Figure 3. Reported age of initiation of former smokers (n=2,154)

Cessation

About one-third of former smokers quit smoking by 24 years old, just over one-third quit between 25 and 39 years old and slightly less than one-third quit after their fortieth birthday. On average the former First Nation smoker quit smoking at 32 years old (male mean=32.99; female mean=31.24).

Table 3. Reported age of smoking cessation by gender (n=2055)

Age quit smoking	All*	Male	Female	Diff.
< 9	–	–	–	–
10 – 14	1.8%	–	–	–
15 – 19	16.1%	13.9%	18.4%	-4.5%
20 – 24	17.0%	16.1%	18.0%	-1.9%
25 – 29	14.0%	13.5%	14.6%	-1.1%
30 – 34	11.0%	11.1%	10.8%	0.3%
35 – 39	11.6%	13.9%	9.2%	4.7%
40 – 44	10.4%	9.0%	11.8%	-2.8%
45 – 49	4.8%	4.9%	4.8%	0.1%
50 +	13.2%	15.7%	10.6%	5.1%

– Data suppressed due to insufficient cell size.

In the question about reasons for quitting smoking, respondents were read a list of reasons from which they could select all the reasons that applied. Based on the responses, the desire for a healthier lifestyle was overwhelmingly the main reason (63.5%). The next was a close tie between the respondent having greater awareness (30.4%) and a health condition (29.3%). This was followed by respect for loved ones (28.1%). The reasons for quitting smoking generally did not vary by gender.

Table 4. Former smokers reasons for quitting smoking (n=2127)

Reason for Quitting	%
Chose a healthier lifestyle	63.5
Greater awareness/education on ill effects of tobacco on my health	30.4
Health condition	29.3
Out of respect for loved ones	28.1
Pregnancy	11.9
Respect for the cultural and traditional significance of tobacco	8.1
Doctor's orders	7.4
Peer pressure from friends/co-workers	3.5

From the list of cessation methods, respondents selected the method(s) that they used.. Based on the responses, 'cold turkey' was the cessation method that applied to most often to former First Nation smokers (88.5%). Other frequently reported methods for smoking cessation included: help from spirituality (8.0%), assistance from family (5.2%), and a medication patch (3.7%). A recent study investigated non-insured health benefit claims by First Nations living in

British Columbia and reports an extremely low use of pharmacotherapy as a cessation method. Researchers suggest a further investigation in the cultural appropriateness, barriers to use and effectiveness of cessation pharmacotherapy related to First Nations.¹³

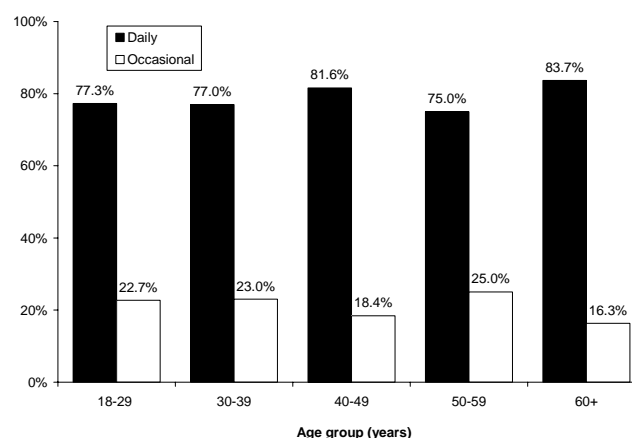
Table 5. Former smoker's methods for quitting smoking (n=2296)

Method of Quitting	%
"Cold turkey" (will-power alone)	88.5
With help from spirituality	8.0
With assistance from family	5.2
Nicotine replacement – patch	3.7
Support or self-help program	1.8
Zyban (bupropion)	1.1
Nicotine replacement – gum	1.0

Current smokers

Almost 60% of First Nations people are current smokers. This section on current smokers will describe the age distribution, consumption patterns by age group and gender, ages of initiation for current smokers and the number of quitting attempts.

Figure 4. Proportion of current smokers by age group and smoking status (n=6386)

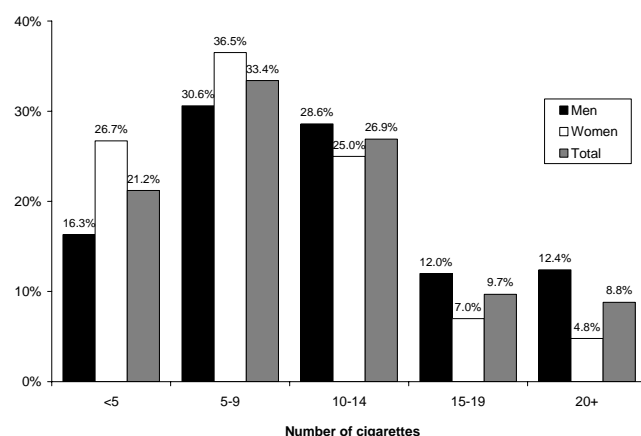


Consumption

The average number of cigarettes consumed by current smokers is 10 (mean=10.48). This rate of consumption is lower than Canadians who average about 15 cigarettes a day. Young men (age 18-29) smoke more cigarettes daily than women of the same age, but older men and women are about equal in the number of cigarettes consumed daily.

Table 6. Average number of cigarettes consumed by age and gender (n=6,376)

Age group	Gender		Diff. (m-f)
	Male	Female	
18-29	10.19	7.67	2.52
30-39	11.42	9.98	1.44 (NS)
40-49	12.2	11.5	0.64 (NS)
50-59	12.8	11.7	1.1 (NS)
60+	12.5	10.7	1.75 (NS)

Figure 5. Consumption of cigarettes by 18–29 year-old men and women (n=2134)

Quitting attempts

More than half of today's First Nation current smokers have made at least one attempt to quit smoking (54.1%). The majority of those who have made attempts have only done so one or two times. About twenty percent (19.3%) of the smoking population is currently making their third, fourth, fifth or more attempts to quit smoking. About 46% of the smoking population has yet to make their first quitting attempt. Those who attempted to quit were not asked about their choices of methods, nor their reasons or motivations to quit smoking.

Table 7. Current smoker's reported attempts for quitting (n=6056)

Number of attempts	Percent
None	45.9
1 to 2 attempts	34.9
3 to 4 attempts	12.1
5 or more attempts	7.2

Socio-economic and health trends

Language and education

Statistical differences appear when examining the relationship between education and smoking status as collected in this survey. Table 8 contains the rates of smoking and non-smoking across education levels.

Table 8. Distribution of smoking status (%) across education (n=10,595)

Education	Smoking status			
	Former daily	Former occasional	Never, ever	Current smoker
Not completed high school	47.0	42.8*	47.4	56.4*
High school graduate	17.6	20.8	21.8	19.1
Post-sec. diploma	29.0*	31.2*	21.4	21.0*
Bachelor's degree	5.7	4.7	7.6%*	3.3*
Graduate degree	—	—	—	—

* significant relationships between cells.

— Data suppressed due to insufficient cell size.

General health

Generally speaking, there were little differences in self-reported health status between smokers, former smokers and never, ever smokers. In this survey, adults who responded that their health was either excellent or very good were further asked to disclose those things that made them so healthy. In the examination of smoking status and the range of responses to healthy-being, one of the seven categories of responses was statistically significant. Former daily smokers are more likely than current smokers and never, ever smokers to report a good diet as a reason for their excellent or very good health ranking.

Housing

About half of all respondents have a smoke-free home (52.4%), conversely half of the homes where First Nation live are not smoke-free (47.6%). Current smokers have a slightly higher number of children living in one household than do former occasional and never, ever smokers. In general, there are no differences between current smokers, former smokers, and non-smokers in terms of living in an overcrowded housing situation.

Personal wellness

In the section on personal wellness, respondents provided attitude responses on the importance of traditional cultural events, traditional spirituality and religion, in their lives. Very important and somewhat important categories were collapsed and compared against the not very important and not important categories, creating high and low importance categories. First Nations smoking and non-smoking

populations only marginally differed in their attitude about traditional spirituality. Current smokers responded more favourably to traditional spirituality than did the non-smoking population by about 5% and this finding was also statistically significant.

Table 9. Reported attitudes in personal wellness (%) by smoking status

Attitudes on:	Smoking status	
	Non-Smoking	Current Smokers
Cultural Event (n=10,244)		
High Importance	78.3	82.1 (NS)
Low Importance	21.7	17.9 (NS)
Traditional Spirituality (n=10,080)		
High Importance	73.3	78.6
Low Importance	26.7	21.4
Religion (n=10,813)		
High Importance	70.5	69.8 (NS)
Low Importance	29.5	30.2 (NS)

Never, ever smokers are more likely (by a full 10%) than current smokers to report a high level whereas current smokers are more likely than never, ever smokers to report a moderate level of balance. Current smokers are more likely than former daily smokers to report a low level of balance. Further analysis is required to explore the associations and types of balances.

Table 10. Levels of balance by smoking status (n=10,728)

Level of balance	Smoking status			
	Former daily	Former occasional	Never, ever	Current
High level	36.1%	35.6%	39.0%*	28.8%*
Moderate level	60.8%	59.3%	54.9%*	64.2%*
Low level	3.1%*	5.1%	6.1%	6.9%*

* significant relationships between cells.

Health conditions

The self-reported health conditions with a low prevalence (less than 5%) were: ADD or ADHD; blindness or serious vision problem; bronchitis; cancer; cataracts; cognitive or mental disability; effects of stroke; emphysema; epilepsy; glaucoma; HIV-AIDS; learning disability; liver disease (excluding Hepatitis); osteoporosis; psychological or nervous disorder; rheumatism; thyroid problems; and tuberculosis. The conditions with noticeable responses (5-25%) were: asthma; arthritis; allergies; diabetes; hearing impairment; heart disease; high blood pressure; and stomach and intestinal problems.

Table 11. Self-reported health conditions (%) by smoking status

Health condition	Smoking status			
	Former daily	Former occasional	Never, ever	Current
Asthma (n=10,184)	15.4*	8.1*	10.1	8.7*
Allergies (n=10,129)	26.3+	22.2	18.8	16.0+
Heart disease (n=10,142)	9.8+	5.5	6.4	3.4+
High blood pressure (n=10,099)	23.9+	21.5+	18.8+	10.6+
Stomach and intestinal problems (n=10,158)	12.1+	9.5	6.4	6.9+
Diabetes (n=10,091)	22.1+	17.4+	19.3+	10.1+
Arthritis (n=10,185)	24.9+	21.0	20.5	15.9+
Hearing Impairment (n=10,179)	13.3+	12.0+	8.0	5.7+

* significantly different from former daily smoker category

+ significantly different from current smoker category

Body Mass Index

The number of First Nations calculated to have an acceptable Body Mass Index (BMI) is roughly 26%. Associations between smoking status and BMI were statistically significant. Table 16 details BMI levels and smoking status.

Table 12. Body Mass Index (BMI) by smoking status (n=8861)

BMI	Smoking status			
	Former daily	Former occasional	Never, ever	Current
Underweight	–	–	–	1.4%
Acceptable	18.5%+	16.1%+	24.4%	30.0%+
Overweight	34.0%	37.6%	36.8%	37.8%
Obese	40.4%+	36.5%	32.6%	27.1%+
Morbidly obese	6.7%+	9.0%+	5.4%	3.6%+

+ significantly different from current smoker category

Nutrition

Smokers have a lower proportion than 'former' or 'never' smokers who reported nearly always have a nutritious, balanced diet. At the combined level of rarely or never having a balanced diet, smokers reported the highest proportion at 14.3%, while the former smokers and never smokers report less than 10%.

Table 13. Frequency of a nutritious balanced diet by smoking status (n=10,543)

Nutritious balanced diet	Smoking status			
	Former daily	Former occasional	Never, ever	Current
Always or nearly always	45.3%+	38.5%	39.4%+	30.9%+
Sometimes	46.5%+	52.5%	51.5%	54.8%+
Rarely and Never	8.3%+	8.9%+	9.1%+	14.3%+

+ significantly different from current smoker category

Physical Activity

The only variable that was explored for physical activity was the hours per week participating in increased heart rate and breathing activities. There were no apparent differences between smoking status and hours per week participating in physical activity. Physical activities would require more investigation before drawing conclusions on associations related to tobacco use.

Alcohol and non-prescription drugs

The proportions of alcoholic beverage consumption by smokers and non-smokers is relatively similar, except for two out of the five frequency categories. Non-smokers (32.3%) are more likely to consume alcoholic beverages infrequently (2 to 3 times a year) than smokers (24.4%).

Chewing tobacco is rarely used by all respondents: only 5.8% (n=10,577) of the entire population of respondents report using it. Non-smokers are more likely than current smokers to report using chewing tobacco at 7.8% and 4.5% respectively.

Former daily smokers (15.6%), former occasional smokers (15.2%) and current smokers (19.6%) are considered equally likely to report having been treated for alcohol abuse. 'Never-ever' smokers (7.3%) report the lowest proportion having had alcohol abuse treatment. Similarly, both former and current smokers are just as likely to report having been treated for substance abuse. Those who have never, ever smoked report the lowest proportion (2.0%) of receiving treatment for substance abuse whereas current smokers are more than four times as likely to have received treatment (9.2%).

The majority of both smokers and non-smokers report never using marijuana or hashish. Current smokers are more than twice as likely as never, ever smokers and former smokers to report using marijuana or hash.

In the First Nations population at least 85% of respondents reported never using any of the following non-prescription drugs: PCP or angle dust; acid, LSD amphetamines; ecstasy; inhalants; sedatives or downers; heroin, cocaine, crack or freebase. Current smokers are more likely than non-smokers

to report having used cocaine, crack or freebase and codeine, morphine, or opiates at some time.

Residential school

About half of the respondents, across all smoking statuses believed that their health was negatively affected by their attendance at residential school. There are no significant differences between smoking status and those that report being negatively affected by residential school.

Multigenerational residential school information was collected in the survey. Based on the complex variables which calculated one or more parents attending residential school, the non-smoking population reports a lower proportion (42.3%) than the smoking population (54.5%). Similarly, the non-smoking population reports a lower proportion (34.9%) of one or more grandparents attending residential school than in the smoking population at 44.6%.

Employment and income

An equal proportion of smokers and non-smokers are working part-time or full-time.

A higher percentage of current smokers (83.1%) than non-smokers (74.7%) report personal income of less than \$30,000. Upon closer examination, both smokers and non-smokers report the \$10,000 or less (including income loss) category as the highest proportion for their smoking status, but smokers have a 9% higher proportion of responses at 37.4% whereas non-smokers are calculated at 28.3%.

Household income is fairly evenly distributed across the smoking and non-smoking First Nations population (n=5225). Only for low- income levels are differences visible according to smoking status. A smaller proportion of non-smokers (8.9%) report an income of \$10,000 or less (including income loss) compared to smokers (13.9%). Current smokers are more likely than non-smokers to report a household income exceeding \$50,000. Both personal income and household income had distinctly varied responses according to smoking status.

Conclusions

The smoking prevalence for First Nations in 2001 was 58.8%, a reduction of about 3% from 1997. Pregnant women follow a different trend on smoking than the general population of women in this survey and a decline in smoking rates is apparent for pregnant First Nations women. For former smokers the average age of initiation was 16 years. The average age of cessation for former First Nation smokers was at 32 years. Most quit for a healthier lifestyle: awareness and health conditions are among the other frequently reported reasons. Cessation was succeeded mainly by the 'cold turkey' method.

Younger First Nations people have the highest rate of smoking among all First Nations. One-quarter of the senior population are smokers. More than half of the population of First Nations surveyed have attempted to quit smoking.¹⁴

Recommendations

With respect to former smoking status, some further analysis on what has helped some First Nations people maintain their tobacco-wise lifestyle would be useful in future data collection as well as information on First Nations relapse could also provide insight. A detailed analysis on the length of time First Nations people consume commercial tobacco, either through recall on future data collection, or via high level statistics, may greatly inform First Nations public health workers. Such information could be comparable to the “pack-years” measurements reported in the 1997 RHS. In relation to the quit attempts current smokers are experiencing, more information on the methods tried and motivation for their attempts could assist community planners and health promoters to target and support the contemplative population (more than 3000 First Nations respondents made at least one attempt in 2001.) Smoking and the links to health conditions, nutrition and physical activity is a comprehensive undertaking that is beyond the scope of this chapter but is highly recommended as a detailed analysis on First Nations health status. Housing and environmental tobacco smoke (ETS) can be further reviewed as another topic area with the use of high level statistics and applied knowledge about tobacco exposure. Further analysis on the ‘balance’ variable, most unique to the Regional Health Survey may provide more insight.

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Chapter 10

Alcohol and Drug Use

Abstract

This chapter presents the results from the 2002/03 First Nations Regional Longitudinal Health Survey (RHS) on the use of alcohol and other select substances by adults. Consistent with previous surveys, rates for both abstinence from alcohol and the frequency of alcohol use were lower among First Nations respondents than those of the general population. However, there were a higher proportion of heavy drinkers (defined as those who have five or more drinks on one occasion) and drug users in the First Nations population. The highest risk group for both drinking and drug use included young males aged 18–29. Recommendations include increased surveillance regarding the health impact of substance abuse and the integration of cultural components into prevention and treatment approaches.

Introduction

Chapter Overview

This chapter presents selected outcomes from the 2002/03 First Nations Regional Longitudinal Health Survey (RHS). These results focus on the use of alcohol and other selected substances by adults (aged 18 and older). Although issues around alcohol and drug use continue to be identified as a concern by many First Nations communities, there remains a lack of comprehensive information on the abuse and impact of these substances. This report offers a unique opportunity to examine this topic through the analysis of nationally collected survey data. To facilitate an understanding of the nature and context of these results, a synthesis of the relevant literature is provided, including historical and cultural information, surveillance and measurement issues and risk factors. Where appropriate, the results are compared with data available from previously undertaken surveys in both the Aboriginal and non-Aboriginal population. The chapter concludes with a series of recommendations for future surveillance efforts, as well as prevention and treatment approaches.

Historical and Cultural Context

Prior to colonization, alcohol and other psychoactive agents played a role in the lives of Indigenous peoples both inside and outside of North America. Their use, however, was strictly controlled and closely tied to the social customs and rituals of various tribes.¹ Upon the arrival of Europeans, a number of factors contributed to changes in the traditional perception and use of these substances. Foremost among these factors was an increase in the availability of alcohol, which was often used during trade and diplomatic contacts.² In fact, the frequent use of alcohol by European authorities has been viewed as representing a type of chemical warfare aimed at creating a European advantage as colonization was initiated.³ Another potential influence was the heavy drinking 'frontier lifestyle' modelled by early traders, a pattern that may have been replicated by Aboriginal peoples.⁴ As the use of alcohol became illegal for Aboriginal peoples, these abusive patterns of use were likely further enforced by the need to engage in the rapid ingestion, or 'gulp drinking', of alcohol in order to avoid authorities.⁵ The incorporation of these drinking patterns may still influence heavy consumption patterns, such as binge drinking.

Over the past hundred years, ongoing assimilation policies, such as the residential school system, further contributed to the disintegration of traditional cultural and family structures. According to L. A. French (*Addictions and Native Americans*), a state of *harmony ethos* existed prior to this cultural alienation, a concept that describes a balanced system of interpersonal and community interactions.⁶ The disruption of this state led to what E. Durkheim (*Suicide*) referred to as 'anomie'—a breakdown in the religious, family

and social order of a community.⁷ As a result, substance abuse was likely used as a coping mechanism for the growing loss of identity and culture.⁸ This hypothesis is reinforced by a number of studies which found that a higher degree of cultural orientation at both an individual and community level has been found to reduce the risk for a number of social problems such as substance abuse and suicide.⁹ Many of the current factors associated with substance dependence focus around ongoing inequities in the determinants of health. Despite improvements, there continue to remain clear differences between the Aboriginal and non-Aboriginal population in educational attainment, income and employment opportunities.¹⁰

Measurement Issues and Risk Factors

The impact of alcohol and drugs on Aboriginal communities is substantial; alcohol-related deaths amongst First Nations people were six times higher, and drug induced deaths were more than three times higher, than those of the general population.¹¹ However, the capacity to ascertain clear data on the prevalence of substance use, abuse and dependence in First Nations and Inuit populations is limited by the reliability and validity of existing population surveys. Previous surveys have been criticized due to a low level of participation, as well as a lack of cultural sensitivity in the survey tools and interpretation of results.¹² Furthermore, there may be cultural sensitivity concerns related to current diagnostic instruments. For example, F. Frances (*Ethnic and Cultural Considerations, Diagnostic and Statistical Manual on Mental Disorders*) has noted the challenges of applying DSM-IV¹ criteria to evaluate individuals from different cultural or ethnic groups, noting that psychopathology may be attributed to behaviours or beliefs that are norms within specific ethno-cultural groups.¹³ As such, increasing attention has been paid to the cultural relevance diagnostic tools. A number of smaller studies have found addiction-related diagnostic tools, the CAGEⁱⁱ and SAQ,ⁱⁱⁱ to be valid within the Aboriginal population.¹⁴ Care must still be taken in applying or generalizing assessment tools and results to the diverse Aboriginal population.

Previous research work among Indigenous peoples has attempted to identify the factors that are associated with alcohol and substance abuse. For example, a number of studies have found associations between genetic markers and alcohol dependence that have the potential to be either risk or protective influences.¹⁵ In other words, there is inconclusive evidence that the population is genetically prone to alcohol problems.¹⁶ Differences in physiological responses to alcohol

ⁱ *Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition* (DSM-IV), published by the American Psychiatric Association, Washington D.C., 1994, the main diagnostic reference of Mental Health professionals in the United States of America.

ⁱⁱ C Have you ever felt that you ought to Cut down on your drinking? A Have people Annoyed you by criticizing your drinking? G Have you ever felt bad or Guilty about your drinking? E Have you ever had a drink first thing in the morning (Eye opener) to steady your nerves or get rid of a hangover?

ⁱⁱⁱ Self Administered Questionnaire

demonstrated a reduced sensitivity to alcohol effects by some Aboriginal groups. Along with challenging the “firewater” myth, this suggests that exceptional problem drinking among First Nations people relates more to environmental rather than genetic factors.^{17, 18} Most research has focused on social and individual elements associated with substance dependence. First Nations persons who have experienced a history of sexual and physical abuse, for example, have consistently higher levels of alcohol or drug abuse.¹⁹ A history of familial alcoholism is also frequently identified as a predictor of future alcohol and substance dependence, and has been associated with the risk of childhood abuse.²⁰ Other risk factors include: exposure to alcohol and drugs; childhood neglect; depression; attendance at residential/boarding schools; and, being a victim of violence.²¹ Although there is a lack of research indicating a direct causal relationship between these individual factors and drinking behaviours, the presence of these factors is often associated with harmful patterns of use, such as chronic/heavy drinking, in later life.²²

Although generally perceived as a secondary issue to alcoholism, drug use has been of growing concern among some First Nations communities.²³ Alcohol dependence has been found to be coupled to higher rates of abuse of other substances, particularly cocaine and marijuana.²⁴ The comorbid use of these substances has also been associated with negative health and behavioural outcomes such as violence, injury and psychiatric conditions.²⁵

Results

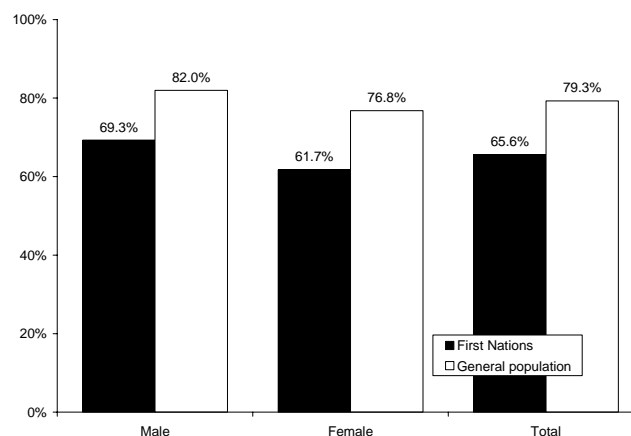
The results presented here are derived answers from six survey questions and include information on alcohol and substance use, alcohol and substance use patterns, the seeking of treatment, and community perceptions on substance abuse.

Alcohol Use

The data available from previous studies actually indicate that Aboriginal people have a higher abstinence rate than that of the general population.²⁶ The current RHS results for First Nations people in particular are consistent with this occurrence. As seen in Figure 1, over the past twelve months, two-thirds of survey respondents (65.6%)^{iv} reported the use of alcohol, compared to 79.3% of the general Canadian population.²⁷ Table 1 compares the proportion of alcohol users by various demographic variables and community size. Of note is a consistent decrease in drinking with age. In fact, only 36.3%^v of RHS survey respondents over 60 reported the use of alcohol, less than half that of the rates found among Canadians aged 55–74.²⁸ Males were more likely to

report alcohol use (69.3%) than females (61.7%), and the highest rates were found among younger males aged 18 to 29. Canadian data from the general population reflects comparable usage rates among younger males and also indicates that this group is more likely to have consumed alcohol over the past year.²⁹

Figure 1. Alcohol consumption over the past year: RHS 2002/03 (n=10,655) vs. general Canadian population



Rates of alcohol use were also available for a number of community indicators but did not vary significantly by community size. However, residents of remote isolated communities (defined as having no scheduled flights) are more likely than residents of non-isolated communities (defined as having road access and being less than 90 kilometres from a physician) to report consuming alcohol (75.7% versus 64.6%, respectively). Although lower rates of use (62.3%) were found in communities in which the transfer process had occurred, these results were not statistically significant.

Frequency of Drinking

As seen in Table 1, the frequency of alcohol use was predominately moderate and did vary somewhat by a number of demographic characteristics. The data for frequency were also consistent with abstinence rates, with a lower frequency of use being reported by First Nations than in the general population. Only 17.8% of respondents stated that they used alcohol on a weekly/daily basis, compared to 44% in the general population.³⁰ Males were about twice as likely (22.8%) than females (11.9%) to be weekly drinkers. Only 14.2% of First Nations persons who were 60 and older reported weekly drinking, substantially less than their counterparts in the general population.³¹

^{iv} To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

^v Comparisons between groups or categories are statistically significant except where “NS” —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

Table 1. Proportion having had a drink in the past year, frequency of alcohol consumption, and frequency of having had 5 or more drinks on one occasion, by gender, age group, and educational attainment

Drinks on one occasion, by gender, age group, and educational attainment													
1+ drinks in past year (%)	Alcohol of consumption frequency (%)						Frequency of having 5+ drinks on one occasion (%)						
	2-3 x per year	1x per month	2-3x per month	2-3x per week	1x per day	Never	1x per month	1x per week	1x per day	< 1x per month	2-3x per month	> 1x per week	
Overall													
Total	65.6	26.8	21.7	33.7	15.7	2.1	17.1	24.3	7.6	1.0	17.3	25.2	7.5
Male	69.3	19.7	21.8	35.8	19.7	3.1	11.5	24.1	9.5	1.4	15.8	27.8	10.0
Female	61.7	35.3	21.6	31.2	10.9	1.0	23.7	24.7	5.2	-	19.1	22.2	4.5
Age group (years)													
18-29	82.9	22.6	22.3	35.1	18.4	1.5	12.0	24.0	8.7	-	16.9	30.3	7.6
30-39	71.0	28.6	20.9	35.9	13.3	1.3	13.6	26.4	7.7	-	18.6	25.7	7.5
40-49	58.1	29.1	19.7	33.8	14.1	3.3	21.9	23.0	6.8	-	16.1	23.0	7.0
50-59	49.8	29.4	21.9	29.1	16.7	-	26.9	22.8	7.1	-	14.8	17.9	8.4
60+	36.3	36.5	26.5	22.8	9.3	-	35.1	22.7	-	-	21.6	9.8	-
Educational attainment													
Did not graduate high school	64.5	25.5	22.0	34.6	15.7	2.1	12.7	25.3	7.2	1.2	16.0	28.5	9.1
High school graduate	73.4	26.7	23.1	31.6	17.3	1.4	18.3	25.9	6.8	-	18.2	23.0	7.4
Post-secondary diploma	62.6	29.1	23.7	31.9	14.9	4.4	21.1	22.6	9.2	-	18.6	21.8	5.3
Bachelor's degree	59.0	25.2	19.6	35.1	13.5	-	31.4	18.8	-	-	20.9	21.2	-
Graduate degree	85.8	-	-	-	-	-	-	-	-	-	-	-	-

-data suppressed due to small sample size

Heavy Drinking

The impact of alcohol is generally associated with problem drinking, rather than overall usage. Previous work has found higher rates of alcohol dependence and substance abuse issues among heavy/binge drinkers.³² Although lower abstinence and drinking frequency rates are a positive sign for Aboriginal communities, the proportion of heavy drinkers (those who have 5 or more drinks on one occasion) remains higher for Aboriginal people than that found in the general population. As seen in Table 1, more than double the proportion of First Nations adults (16.0%) reported heavy drinking on a weekly basis than in the general population (6.2%) appear to be at highest risk, with 20.9% of males reporting heavy drinking on a weekly basis, compared to only 10.2% of females reporting weekly heavy drinking.³³

Drug Use

There is limited information from previous studies on drug use in the First Nations population. The results of these smaller studies, however, do provide some indication of a higher proportion of usage of selected illicit substances in the Aboriginal population.³⁴ Current RHS data found that 26.7% of respondents had used marijuana over the past year, compared to only 14.1% in the general population.³⁵ By far, the highest frequency users were males aged 18 to 29.

Twenty-nine percent of males in this age range reported the use of marijuana on a daily basis. In general, prescription drugs—including codeine, morphine and opiates—had the next highest frequency of use, with 12.2% reporting the use of these drugs over the past year. The use of sedatives was reported by 3.1% of respondents.

There is a relatively low frequency of illicit substance use. The usage rate of any of 5 illicit substances^{vi} was found to be 7.3% over the past year, and is more frequently reported by men (9.3%) than women (5.3%). However, this is more than double the rate found among the general population, in which past-year-use was reported to be only 3%, excluding inhalants.³⁶ No apparent relationship between drug use and cultural affiliation (i.e., likelihood of consulting a traditional healer, importance of cultural events) was identified, perhaps due to small sample sizes. Higher proportions of non-users reported a lower number of mental health or professional social support agents, whereas users of five or more drugs were more likely than non-users to report a higher number (3) of support agents of this type. The impact of the use of illicit substances is of concern to communities. The use of these substances is associated with alcohol dependence, as well as co-morbid dependence on other substances, with cocaine and marijuana acting as a 'base drug.'³⁷ Although highly publicized in the media as a problem for Aboriginal

^{vi} PCP/Angel Dust, Acid/LSD/Amphetamines, Ecstasy, Inhalants, Cocaine/Crack/Freebase, Heroin

highly publicized in the media as a problem for Aboriginal communities, the reported use of inhalants was very low (0.2%). No exploration between tobacco and alcohol/drug use was undertaken in our analysis.

Treatment and Community Response

The impact of substance abuse can also be seen through the proportion of respondents who sought treatment for their addiction. Treatment was most often sought for alcohol abuse (16.3%). Approximately 7% of all respondents reported that they had sought treatment for drug abuse while another 1.2% sought treatment for solvent abuse. These rates do not necessarily reflect the extent of those requiring treatment, nor do they necessarily represent a lack of treatment resources. Generally speaking, young males are less likely to seek treatment for alcohol abuse compared to their older male counterparts. Although the data indicate that there may be lower rates of alcohol use among First Nations compared to the general population, significant concern still remain over the capacity of the community to respond to this issue. Consistent with previous surveys undertaken in First Nations communities, the majority of respondents expressed concern over the lack of progress against alcohol and drug abuse.³⁸ The current data found that 63.6% of respondents felt that no progress was being made in reducing alcohol and drug abuse. Only 6.6% felt that good progress was being made.

Those seeking treatment were more likely to report one or more medical conditions than those not seeking treatment. Approximately one third of individuals (31.9%) reporting treatment for alcohol use had attended a residential school. Those accessing treatment also indicated closer cultural ties than those not accessing treatment. For example, a higher proportion of individuals in treatment were more likely to report that traditional cultural events were of importance to them.

Discussion and Recommendations

Surveillance and Impact

For the first time, the RHS provides comprehensive and national baseline information on substance use in the First Nations population. However, there is still a need for surveillance initiatives that would provide data on health and social impacts related to alcohol and substance use. Two opportunities are available to capture this information. The first is the inclusion of further questions, such as those found in the Canadian Addictions Survey and previously administered First Nations and Inuit Regional Longitudinal Health Survey. These surveys explored the harmful effects and perceived impact from alcohol and substance use through a number of inquiries. The second opportunity is the linkage of data through partnerships with government ministries. For example, British Columbia has linked Indian Status with coroner data that are providing critical

information on alcohol and drug related mortality within the First Nations population of that province.³⁹

Prevention and Treatment

The results of this study highlight a number of important differences between the substance use patterns of First Nations and Inuit peoples and the general Canadian population. In particular, there are both higher rates of abstinence and a lower frequency of alcohol use in Aboriginal populations. These differences may be indicative of a rediscovery of traditional cultural attitudes and values towards alcohol and other substances. For example, those not consuming alcohol were more likely to have seen a traditional healer over the past year than those consuming alcohol (who were more likely not to have seen a traditional healer for 2 or more years). There is a need to explore the role of culture as a preventative tool, an approach already undertaken by a number of communities.⁴⁰ This may also address maladaptive attitudes towards drinking patterns, such as gulp and heavy drinking, which were modelled by early frontiersman. These historical factors may still contribute in part to the pattern of binge drinking seen today. Historical and cultural awareness campaigns could be used to further articulate these types of phenomena.

Existing data seem to suggest that transfer polices are a marker of community stability, which in turn can impact substance use and misuse. For this reason, governments need to support First Nations in their efforts for self-governance. As part of self-governance, First Nations communities need to examine comprehensive, community-wide policies addressing the prevention of alcohol and drug abuse and dependence. The more publicized prevention efforts in First Nations communities have utilized prohibition, but unfortunately have had limited effectiveness and are dependent on enforcement policies and infrastructure.⁴¹ Prohibition efforts need to be incorporated into broader community prevention strategies.⁴² Health Canada has recommended the collaboration of First Nations community leaders, health professionals, government and law enforcement agencies in the development of prevention frameworks.⁴³

Prevention programming must also be developed from a perspective that considers the determinants of health. Although the general trends indicate lower overall usage in Aboriginal communities, there continues to be a significantly higher proportion of heavy drinkers and drug users than in the general population. There is a need to address the broad determinants of health, such as poverty, in order to have an impact on substance misuse.

As mentioned, the RHS results highlight the importance of First Nations cultures in reducing alcohol and drug use. Unfortunately, the body of literature describing best practices in substance abuse programs for Aboriginal populations is limited; however, existing research supports the

incorporation of cultural and spiritual healing practices into addictions treatment approaches.⁴⁴ French argues that this approach necessitates the need for First Nations people to both manage and provide treatment.⁴⁵ Treatment philosophies must also attempt to address the psychological impacts of historical trauma and abuse issues.^{46, 47} The results of this survey indicate the importance of this approach based on the fact that many of those who accessed treatment attended residential school.

The RHS data indicate that a higher proportion of those seeking treatment had a medical condition, which suggests that a continuum of services is needed, including a linkage with primary care within the treatment setting.⁴⁸ Additionally, the data indicate that younger males are less likely to access treatment, suggesting that practical alternatives may be appropriate. Examples of alternatives include outreach services such as community mobile treatment, telephone support and harm reduction services.^{49, 50} The cultural appropriateness of harm reduction has not been validated amongst the First Nations population, but strategies such as controlled drinking (i.e., appropriate for high risk groups such as younger males) have been shown to be effective in non-Aboriginal populations, and are thus deserving of consideration.⁵¹ Finally, the diversity of First Nations communities indicates the need for caution in generalizing treatment approaches, as well as research and evaluation for determining best practices.⁵²

Conclusion

This chapter has presented the results from the 2002/03 First Nations Regional Longitudinal Health Survey on the use of alcohol and other select substances by adults. Consistent with previous surveys, abstinence rates for both abstinence from alcohol and the frequency of alcohol use were lower among First Nations respondents than those of the general population. However, there was also a higher proportion of heavy drinkers (those having five or more drinks on one occasion) and drug users in the First Nations population. The highest risk group for both drinking and drug use included young males aged 18 to 29. Recommendations include increased surveillance regarding the health impact of substance abuse and the integration of cultural components into prevention and treatment approaches.

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Chapter 11

Sexual Health Practices

Abstract

The 2002/03 First Nations Regional Longitudinal Health Survey (RHS) contains data that allows for an interpretation of adult sexual health and practices. Life is created through sexual expressions that are viewed as both sacred and natural to First Nations. Colonization and the legacy of the residential school system have resulted in many changes to the lives of First Nations people, including how sexuality is expressed. In some cases sexual violence affects families and communities. To complicate matters, viruses and bacteria have emerged that infect and afflict some First Nations with Sexually Transmitted Infections (STIs) and HIV. Complacency about contracting STIs/HIV may be leading to unsafe sex practices.

The data gathered here indicates that adult respondents are sexually active at all ages, while sexual activity declines with age. First Nations males reported being more sexually active than females. First Nations people over 60 years of age reported the highest prevalence rate (95.4%) of having one or two sexual partners, while the youngest age group (18–29) reported the lowest rates (80.1%). Respondents in this survey stated that they do not always use condoms. The reasons for not using condoms are numerous. Younger people aged 18–39 reported that they were most likely to get tested for HIV. Testing declines with age. Males were less likely to get tested for HIV than females. This data suggests that having more sexual partners may not necessarily lead to more HIV testing and that more education is needed among males and females of all ages regardless of marital status.

Introduction

Traditionally, First Nations peoples view life as being sacred. Sexuality is viewed as an expression of the life-creating force between men and women. Historically, First Nations have experienced changes to their way of life that have affected traditional understandings of sexuality and its relationship to the sacredness of life. This chapter offers a cultural and historical perspective of First Nations' sexuality and sexual practices. Data is examined from the 2002/03 First Nations Regional Longitudinal Survey (RHS) in relation to sexual activity, number of sexual partners, condom use, and HIV testing (by age, gender, and/or marital status).

Interpretation Methods

This chapter utilized the RHS Cultural Framework as outlined in the introduction to support a community-based approach toward improving and strengthening the health and wellness of First Nations. Within a four-directions model, the Eastern door emphasizes the need for visioning the optimum health of the individual, family, and community through a cultural lens, and calls attention to the need for First Nations people to return to their traditional teachings and values. The Southern door emphasizes the realization that individuals, families, and communities have experienced disruptions, distress, and a breakdown of their cultural perspective on sexuality as the sacred life force. The Western door emphasizes the understanding of data and interpreting the current state of health and well-being among First Nations. The Northern door offers direction towards building the healthy First Nations person, family, and community using cultural teachings and values. The framework suggests the need for culturally appropriate sexual health education among all age groups and genders, regardless of marital status.

The Eastern Door

Many First Nations peoples tell Creation stories that depict how life was created on Mother Earth. Our Elders teach us that the Creator gave us life, that life is sacred and that each one of us is a sacred and spiritual being. Through their kind and caring ways our parents, grandparents, and other family and community members protect, guide, and teach us to become healthy adults. Through this process of life we are taught the beliefs and values of our community and culture in order to become healthy people who are able to contribute to our families and the First Nations community. It is a sacred cycle of life.

The Southern Door

Over time and through contact with other cultures, the life we knew began to change. Some people might refer to this change as a period of colonization and subsequent adaptation to a foreign way. The changes affected our sacred life cycle, originally designed to create spiritual beings. Through

warfare, famine, disease, and assimilation policies, our sacred life cycle was changed. Today, many First Nations are in a period of recovery, and searching for ways to heal from this process of colonization. This includes honouring, protecting, and respecting the sacredness of the life cycle.

There has also been a movement toward healing from the intergenerational impact of abuse, specifically sexual abuse. It is widely known that residential schools are a construct of the federal government's colonial policies coupled with church practices aimed at the assimilation of Aboriginal people into the dominant society.¹ As First Nations leaders have broken the silence, the dark legacy of the residential school system has come to light. In 1990, Phil Fontaine, a former Chief of the Assembly of Manitoba Chiefs and current National Chief of the Assembly of First Nations, informed the Roman Catholic Church representatives and the press of the abuse that he and many other people experienced over the years. "I think what happened to me is what happened to a lot of people. It wasn't just sexual abuse; it was physical and psychological abuse. It was a violation."

If individuals, families, and communities are not healed from sexual abuse, it will continue to negatively affect First Nations. In 2003 the First National Indigenous Sexual Abuse Conference was held, and Phil Lane, Jr. addressed this topic in his keynote address.² Lane told a story about the most sacred of all ceremonies—the birth of a child. This ceremony has been neglected as a result of the interwoven complexities of widespread sexual abuse. He explained that widespread sexual abuse, sexual abuse of children, incest, pornography, rape, child and adult prostitution, HIV/AIDS, and gang rape exist in our communities because "the creative power and sacred expression of life" has been abused.³ The disruption of the most sacred aspect of life through sexual abuse has caused distress to First Nations people. The experience of sexual abuse has caused a breakdown in their health and well-being. These interwoven complexities also affect families and communities.

Sex is a subject that people talk about in many different ways. Traditionally, the act of sex is an expression of the most sacred ceremony—the birth of a child. Yet in this contemporary life journey—which includes awareness, prevention, and the healing of one's sacred being—there are many reasons to be concerned about life and the process of creating life through sexuality. So what is sexuality? The following definition of sexuality is offered:

Sexuality is a central aspect of being human throughout life, and encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological,

psychological, social, economic, political, cultural, ethical, legal, historical and religious and spiritual factors.⁴

In light of this, it is logical for First Nations to address the experience of the residential school and the intergenerational trauma resulting from it. The majority of respondents (79.7%)ⁱ did not attend a residential school, but the majority of respondents (73.4%) felt that their grandparents' attendance at residential school negatively affected the parenting their parents received. In 1997, the results for First Nations and Inuit Regional Health Survey conducted in Ontario (of 870 First Nations adults) reported that 59% of men experienced physical abuse.⁵ The abusers were more often mothers than fathers.⁶ In addition, 34% of the respondents reported experiencing sexual abuse during their childhood, and often identified relatives or other acquaintances as the perpetrators.⁷ Traumatic childhood experiences affect the adult life, and are an area that requires further investigation in order to heal. In 1997, the Regional Health Surveys conducted in Nova Scotia and Manitoba asked respondents questions about safe sex practices.⁸ The results showed that 31% of respondents in Nova Scotia did not practice safe sex and that 61% of respondents in Manitoba reported not practicing safe sex.⁹ Preventing the spread of STIs/HIV through the adoption of healthy sexual practices is important because bacteria and viruses affect not only the body, but the mind and spirit of the people.

The Western Door

A person's thoughts and behaviours may either enhance or disrupt the sacredness of life. We believe that the mind, body, and spirit are interconnected; this means that unprotected sex leading to STIs and HIV/AIDS can have a negative effect on the minds, bodies, and spirits of people. According to Health Canada (1997), STIs are spread during sexual activity when bacteria or viruses travel in semen, vaginal fluids, and blood.¹⁰ If a person has a tiny cut around the mouth, saliva can also spread STIs.¹¹ Those who share needles or syringes can spread STIs through the contact of bodily fluids. Pregnant mothers who are infected with STIs can pass on the infection to their babies during pregnancy and through childbirth.¹² Although vaccines are available for hepatitis B, there are no cures or vaccines for genital warts, genital herpes or HIV.¹³ STIs include chlamydia, gonorrhea, vaginitis/vaginal discharge, yeast infection, trichomoniasis, bacterial vaginosis, pubic lice, scabies, genital herpes, genital warts (HPV), hepatitis B, syphilis, and HIV/AIDS.¹⁴

In 2004, Alberta Health and Wellness reported that people are becoming complacent about HIV and that 50% of all reportable communicable diseases in Alberta are attributed to sexually transmitted infections.¹⁵ Further, complacent attitudes are shown to lead to unsafe sex practices. The

Centers for Disease Control and Prevention (1998) have reported that AIDS "is affecting population groups with the highest rates of curable STDs".¹⁶ In 2004, Alberta Health and Wellness reported that:

All age groups are affected by STIs, but the majority of those infected are in the 15–29 year age group. Although most of those infected with STIs identify themselves as Caucasian, Aboriginals are disproportionately affected by all STIs except syphilis.¹⁷

Results

This part of the chapter examines sexual activity, number of sexual partners, condom use, and HIV testing by age, gender, or marital status, during a twelve-month period.

The data from the First Nations Regional Longitudinal Health Survey (RHS) 2002/2003 shows that most (73.7%) adult respondents are sexually active regardless of age, although sexual activity declines with age. The majority of the respondentsⁱⁱ between the ages of 18–29, 30–39 and 40–49 are sexually active (83.5%, 84.6% and 77.9%; differences not significant). Respondents between the ages of 50–59 are somewhat less sexually active (58.6%). Sexual activity declines further among respondents over the age of 60 (26.7%). Regardless of age, First Nations adults are sexually active. This suggests that attaining optimal sexual health within communities requires education for people of all ages and backgrounds.¹⁸

Data from the RHS 2002/03 showed that First Nations males reported being more sexually active than females. The majority of male respondents (80.3%) were sexually active, while 66.8% of female respondents reported sexual activity.

Respondents were asked questions about their marital status and sexual activity. A majority of the respondents (90.4%) in common law relationships were sexually active. Sexual activity declines among those who reported being married (79.1%), single (70.6%), separated or divorced (58.1% and 51.6% respectively; difference not significant), and widowed (17.0%).

Marital status affected the number of partners reported over a twelve-month period. The results suggest that the majority of married people (97.8%) had one or two partners, as did the widowed group (97.2%), common law group (95.8%), and divorced group (88.4%). Fewer of those who were separated (83.2%) or single (71.5%) had only one or two partners compared to those in the married, common law or widowed group, although the majority still reported one or two partners. Single and separated adults (16.3% and 12.3% respectively) were more likely to report having three to four partners in the past twelve months than those who were common law, widowed, and married.

ⁱ To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

ⁱⁱ Comparisons between groups or categories are statistically significant except where "NS" —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

Within all age groups, the majority of adults reported having one or two sexual partners in the past twelve months. The prevalence rate for having one or two partners was highest among adults 60 years and older (95.4%) and was lowest among the youngest age group, 18–29 years of age (80.1%). In general, the data suggest that respondents of the youngest group had more sexual partners than older age groups. Some respondents between the ages of 18–29 (11.8%) reported having three to four sexual partners. Some respondents between the ages of 18–29 (8.0%) reported having five or more sexual partners.

Females are more likely to report having one or two sexual partners (93.1%), compared to males (81.6%). Conversely, males are roughly twice as likely as females to report having three or four partners (9.9% for men versus 4.7% for women), five to six partners (4.5% for men versus 1.2% for women), or even more.

Condom use has been strongly advocated as a means of STIs/HIV prevention, and yet across all age groups the respondents stated that they do not always use condoms, citing the main reason as being with a steady partner. This was also cited as the main reason among all marital groups, including those who were married, divorced, common law, widowed, separated, or single. Many respondents between the ages of 18–29 (9.9%) stated that they did not always use condoms because they were under the influence of alcohol or drugs. However, among older age groups, people were less likely to cite alcohol or drug use as the reason for not using condoms. Across all age groups, 6.6% stated that they didn't want to use a condom, 4.0% stated that their partner did not want to use one, 3.6% of people thought they were safe and did not need to use a condom, and 3.4% stated that their partner wanted to get pregnant.

Figures 1 through 3 present the rate of HIV testing by age, gender, and marital status respectively. Overall, 34.2% of all adults have been tested for HIV at some point in their lives. Despite the reasons cited for not using condoms, younger adults (45.1% of those aged 18–29 and 41.9% of those aged 30–39) were the most likely to receive HIV testing. In general, HIV testing declines with age. Males (29.5%) were less likely to get tested for HIV than females (39.0%). Many single respondents (40.8%), common law respondents (40.6%), divorced respondents (38.9%) and separated respondents (35.6%) were more likely to be tested for HIV compared to married respondents (23.8%) and widowed respondents (13.4%).

Nevertheless, not all people are being tested for HIV, even if they report having more than one sexual partner in the past twelve months. Moreover, there were no significant differences in rates of HIV testing by the number of sexual partners. Less than half of the respondents (40.3%) having one to two partners in the past 12 months had been tested for HIV, compared to half of the respondents (51.0%) having three to four partners in the past 12 months having been

tested for HIV. More than half of the respondents (51.2%) who reported having five to six sexual partners had been tested for HIV, and less than half of the respondents (36.6%) reporting seven to ten partners had been tested for HIV. Those who had 11 or more partners (44.1%) were less likely to get tested for HIV. This data suggests that having more sexual partners does not necessarily lead to more HIV testing.

Figure 1. Proportion having undergone a test for HIV in their lifetime by age group

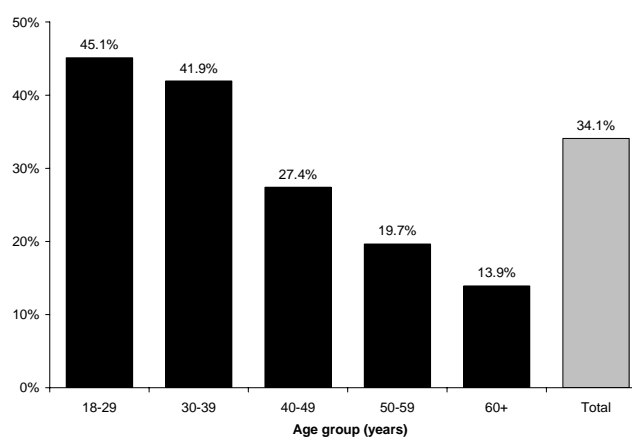
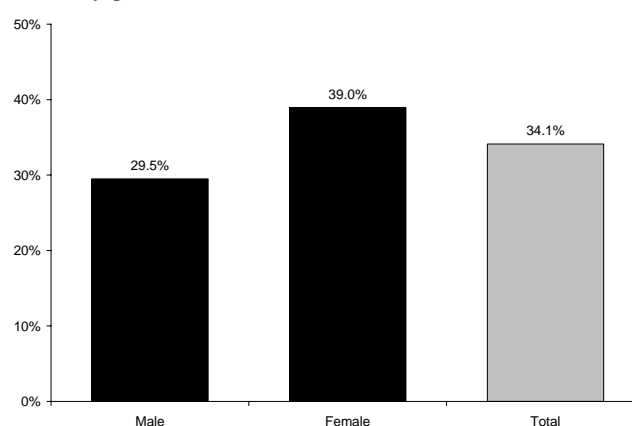


Figure 2. Proportion having undergone a test for HIV in their lifetime by gender

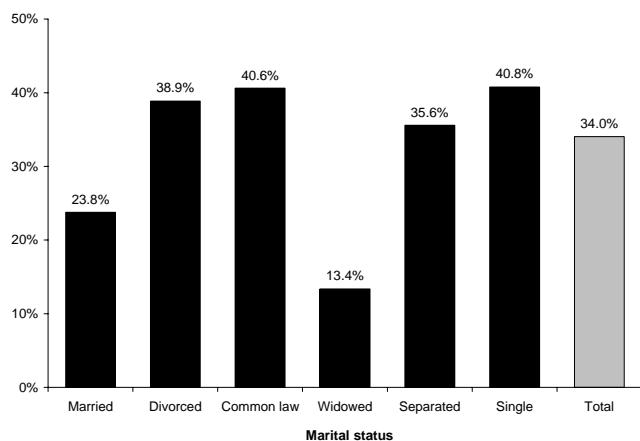


The Northern Door

The 2002/03 First Nations Regional Longitudinal Health Survey (RHS) data indicates that First Nations adults are sexually active at all ages and that sexual activity begins to decline with age. First Nations males reported being more sexually active than their female counterparts. First Nations people over the age of 60 reported the highest prevalence rate for having one or two sexual partners, while the youngest age group, those between 18–29, reported the lowest prevalence rates of having one or two partners. Respondents in this survey stated that they do not always use condoms. The reasons cited for not using condoms varied. Younger people were reported as the most likely to receive HIV testing, with

the tendency to obtain testing declining with age. Males were less likely to be tested for HIV than females. The need for testing among females is strongly suggested prior to pregnancy. The data also suggest that having more sexual partners does not lead to the increased likelihood of HIV testing, and that there is a need for culturally appropriate education among males and females of all adult ages.

Figure 3. Proportion having undergone a test for HIV in their lifetime by marital status



By educating all age groups, grandparents, parents, and other adult community members can become proactive and help the next generation of young people cope with and perhaps defeat STIs/HIV. Our traditional teachings prompt us to take an inclusive and holistic approach towards education, because STIs and HIV bring shame, hurt and grief to those who are afflicted. As family and community members, we have a social responsibility to help prevent and treat STIs and HIV. STIs and HIV affect the sacredness of life. Together, Western Medicine and Traditional Indigenous Knowledge can lead to more effective prevention and treatment for STIs and HIV, thus restoring sexual balance to First Nations communities.

Notes to Chapter 11

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Chapter 12

Healthcare Access

Abstract

This chapter reports on selected indicators of access to “Western” preventive primary health care measures. Overall, 40.8% of respondents rate their access to health services as being the same as that of Canadians. An additional 23.6 % rate their access as being better, whereas 35.6% rate their access as being less than that of Canadians.

Similarly to other Canadians, First Nations feel that waiting lists pose a barrier. At the same time, First Nations-specific barriers also exist. Language, high costs, transportation, and unavailable services available locally and inadequate services are some of these barriers. According to Health Canada, Non-Insured Health Benefits (NIHB) are provided in order to assist First Nations in reaching an overall health status on par with other Canadians. Thus, NIHB should at least in part, help alleviate geographic and economic barriers to access care. The evidence documented in this survey shows that current access rules to NIHB may be creating barriers in these areas rather than alleviating them.

The results of this study also suggest that preventive and screening activities available at the community level could be expanded to target the prevention of certain health conditions. In First Nations communities, improvements should be pursued in screening for heart disease (cholesterol), diabetes mellitus (blood sugar) and vision. Screening for breast, cervical, prostate and colorectal cancer (DRE) could also be improved. National First Nations-specific screening and preventive standards could help guide community-based primary prevention and screening activities.

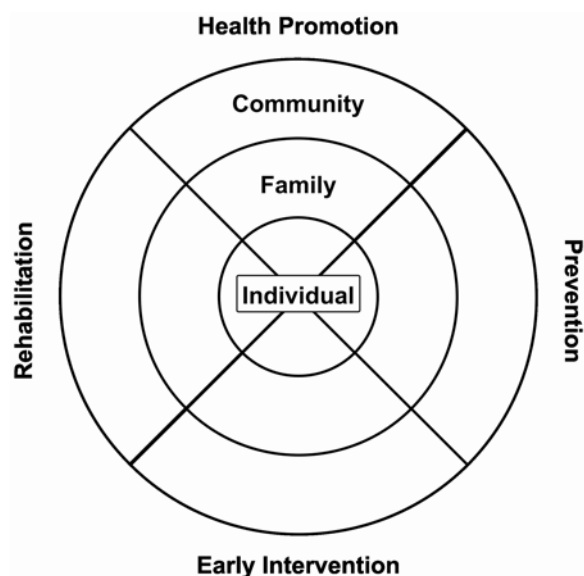
Introduction

This chapter focuses on First Nations' access to "Western" primary health care measures with regards of prevention and early intervention. Numerous reports have shown that First Nations people experience a higher burden of illness when compared to their Canadian counterparts.¹⁻³ Access to "Western" health care is only one determinant of health.⁴ First Nations people may also utilise "western" health services to complement traditional healing and wellness practices or vice versa. Primary health care is thus only a portion of care and healing activities that First Nations depend on for health and wellness. .

Documenting First Nations' access to primary health care is important because recent studies have shown that countries with better access to primary health care are less likely to report health inequities,⁵ mainly because primary health care focuses on prevention, health promotion, early intervention and rehabilitation. Primary health care also promotes community, family and individual-centred approaches to care.⁶⁻⁷ This is shown in Figure 1.

The next section reports on selected indicators of access to primary health care measures, including respondents' rating of their access to health care in comparison to Canadians, access to screening and preventive measures, barriers to accessing health care, and access to Non-Insured Health Benefits (NIHB). The results will be discussed in the context of other studies, including the 1997 RHS and of the 2002-03 Canadian Community Health Survey (CCHS). The last section provides conclusions and recommendations.

Figure 1. Model of primary healthcare



Results and Discussion

Overall access to health services

A number of factors, such as health status, gender, age, community and transfer status, impacts how First Nation respondents rate their access to health services. Overall, 40.8%ⁱ of First Nations respondents generally rate their access to health services as being the same as that of Canadians. This is an increase from the 1997 RHS,ⁱⁱ where 34.0% of First Nations respondents rate their access to health as being the same as Canadians.⁸ An additional 23.6 % rate their access as being better, whereas 35.6% rated their access as being less than that of Canadians.

Self-rating of health status

As shown in Table 1, First Nations respondents who rate their health as being very good or excellent estimate their access to health services as being better (24.6%)ⁱⁱⁱ or the same (45.5%) as Canadians. Moreover, respondents who rated their health as very good are likely to report better access to health services as compared to Canadians and other survey respondents that rated their health as good, fair or poor. Those reporting fair or poor health were less likely to report having the same level of access than those in good, very good, or excellent health. There were no significant differences seen in having better accessibility as a function of self-rated health status.

Table 1. Proportion of adults rating their access to health services in relation to self-rated health status (n=8,731)

	Excellent or very good	Good	Poor
Better access (NS)	24.6%	22.3%	24.7%
Same level of access	45.5%	39.6%	34.0%
Less access	29.9%	38.1%	41.3%

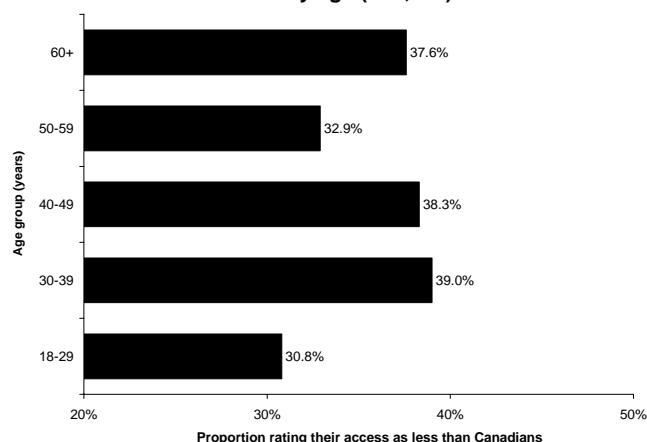
Gender and Age

About the same proportion of women and men consider that they have less access to services than Canadians in general (37.6% vs. 33.7%—NS). The differences by age, shown in Figure 2 are also not statistically significant.

ⁱ To simplify the text, confidence limits are only reported for overall adult estimates with a co-efficient of variation greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs.

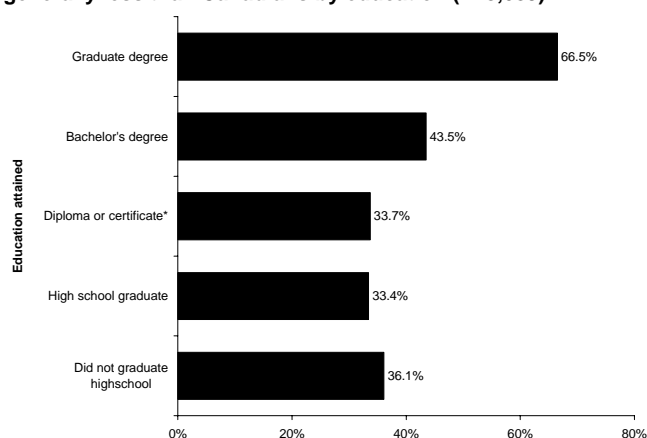
ⁱⁱ In the 1997 RHS, respondents were asked to rate their access to health as being either equal or not equal. In the 2002-03 RHS, respondents were asked to rate their access as either the same, better or lesser when compared to other Canadians. The results must therefore be compared with caution.

ⁱⁱⁱ Comparisons between groups reported in this chapter that are all significant unless "NS" —not significant—is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Figure 2. Proportion believing that they have less access to health care than Canadians by age (n=8,767)

Education

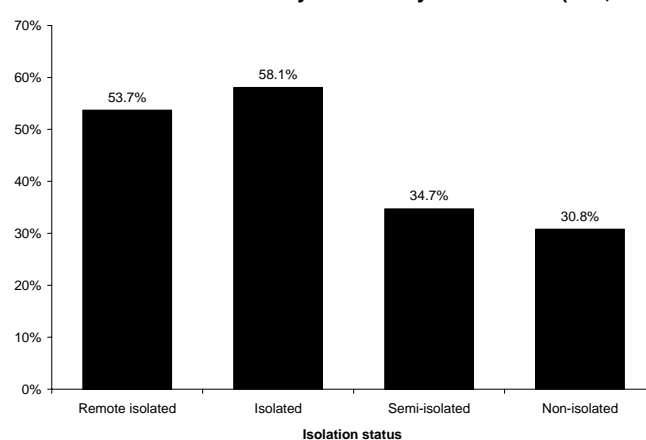
Figure 3 shows the proportion of First Nations respondents reporting having less access to health services in relation to education. Respondents who achieved a higher level of formal education are more likely to rate their access to services as generally less than that of Canadians (NS).

Figure 3. Belief that they have less access to health care is generally less than Canadians by education (n=8,689)

*Diploma or certificate from university, college, technical or vocational school

Community characteristics

As shown in Figure 4, respondents from remote or isolated communities are more likely to rate their access to health services as generally poorer than that of other Canadians.^{iv}

Figure 4. Proportion who believe that they have less access to health care than Canadians by community remoteness (n=8,453)

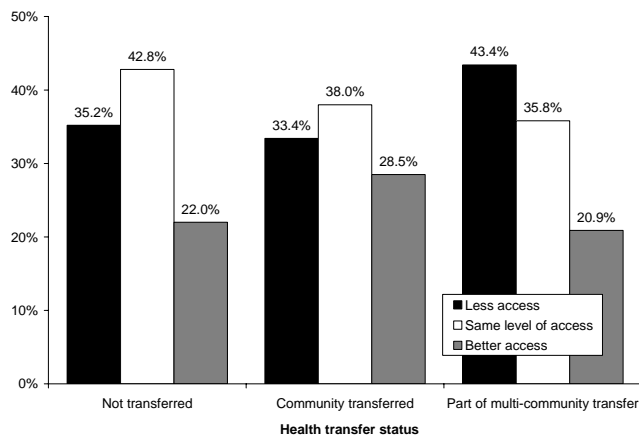
Transfer status

Finally, and as shown in Figure 5, First Nations from communities where services are delivered through a health transfer^v are more likely to rate their access to health services as being generally better than that of Canadians (28.5%) compared to First Nations living in a non-transferred community (22.0%, NS) –or in a community that transferred as part of a multi-community transfer (20.8% NS). In fact, respondents from communities that transferred as part of a multi-community transfer are more likely to rate their access to health services as generally less than Canadians (43.4%). This result is puzzling. Further analysis was conducted to ensure that other factors such as remoteness and community size were not influencing the results. The importance of this finding is explored in the final section of this chapter.

Based on the above findings, it appears that remoteness is an important factor when it comes to access to health care. This finding above is not surprising. The results on multi-community transfers are puzzling. It is beyond the scope of this report to conduct multivariate analysis to ensure that other factors such as remoteness and community size were not influencing the results. More comparisons would be required to understand the meaning of these findings.

^{iv} Results for community size were not statistically significant and are not reported here.

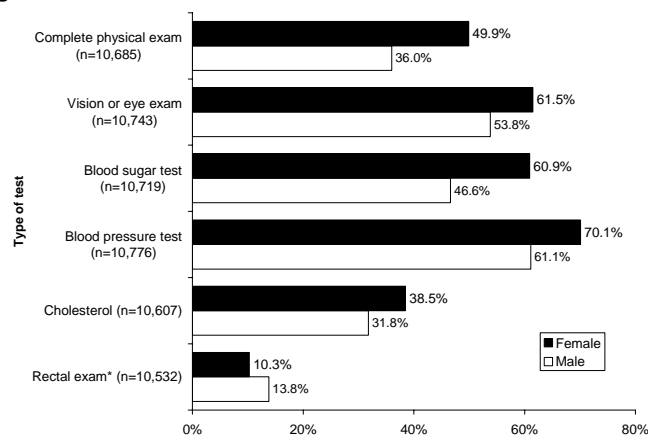
^v The Health Transfer Policy was adopted by Health Canada in 1989. This policy provides First Nations the opportunity to exercise some autonomy in allocating financial resources over a number of selected programs, thereby ensuring some measure of local autonomy in decision-making. See Lavoie et al. for a more comprehensive review.⁹

Figure 5. Rating of access to health care in by health transfer status of community (n=8,788)

Access to Screening and preventative measures

Screening and Prevention

Respondents were asked to identify whether they had received screening tests in the past 12 months. Figure 6 shows the results in relation to gender. First Nation men were consistently less likely to have undergone testing in the past 12 months, when compared to First Nation women. The only exception was for rectal examination, which is used to detect rectal cancer in both men and women, but is also used to detect prostate cancer in men.

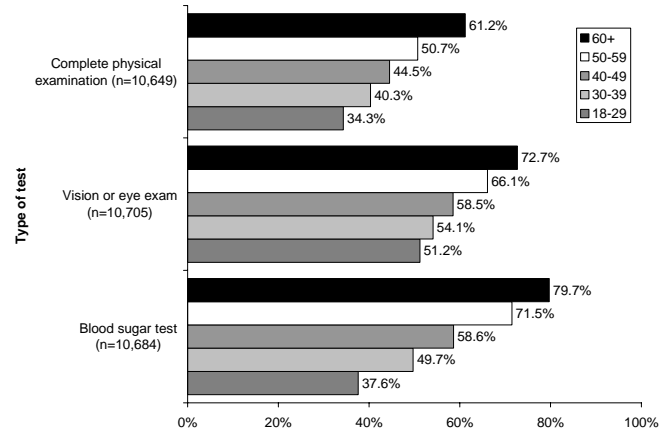
Figure 6. Proportion of respondents having received selected health screening tests in the past 12 months, in relation to gender

Complete physical exam

Figure 7 shows the proportion of respondents who received a complete physical exam, vision or eye exam, and who were screened for diabetes mellitus in the past 12 months, in relation to age.

The findings suggest that the current level of coverage is a concern with only 34.3% of respondents between the age of

18 to 29 reporting having had a complete physical examined the past 12 months. This proportion increases with age; 40.3% for respondents between 30 and 39 and rising to 61.2% for those 60 and above.

Figure 7. Screening tests accessed in the past 12 months by age

Regular vision or eye exams

Regular vision or eye exams not only ensure optimal vision, but can also help detect the development of conditions such as high blood pressure or diabetes. More than half of all respondents (57.6%) reported having undergone a vision or eye exam in the past 12 months. Since optometric and ophthalmologic exams are usually not available on-reserve, this result suggests perhaps an expected, albeit low, coverage.

Blood sugar test

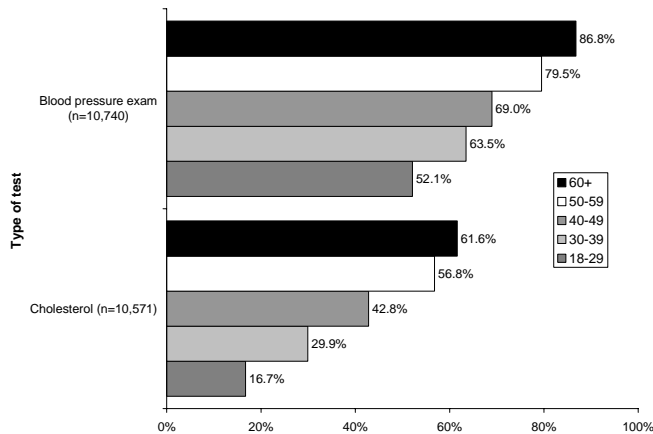
This is a key test in screening for diabetes mellitus. The 1994 National Population Health Survey documented that the age-standardised rate of diabetes mellitus in the First Nation population was 10% compared to 3% in the overall Canadian population.¹⁰ Recent studies have document an upward trend among First Nations.^{11,12} It is also generally recognised that First Nations develop diabetes at a younger age. One study suggested that the age of onset is actually dropping.¹³ The findings reported here show that only 37.6% of respondents between the age of 18 and 29, and 49.7% between the age of 30 and 39 had been screened in the past 12 months. The current level of coverage is less than ideal given current trends.

Blood pressure exams and cholesterol tests

Blood pressure exams and cholesterol tests are key components in screening for heart disease. Cholesterol screening is recommended for individuals at higher risks. Current data suggests that First Nations living on reserve are at higher risk of mortality by acute myocardial infarction (heart attack) with a documented age standardised rate of 72.7 per 100,000 (on-reserve, 2001) compared to 52.1 per 100,000 for all Canadians (2000), suggesting an earlier age

of onset.¹⁴ Figure 8 suggests that routine cholesterol testing is generally low. It may be advisable to improve cholesterol screening given current trends. In contrast, blood pressure examinations are being obtained at a higher rate among all age groups.

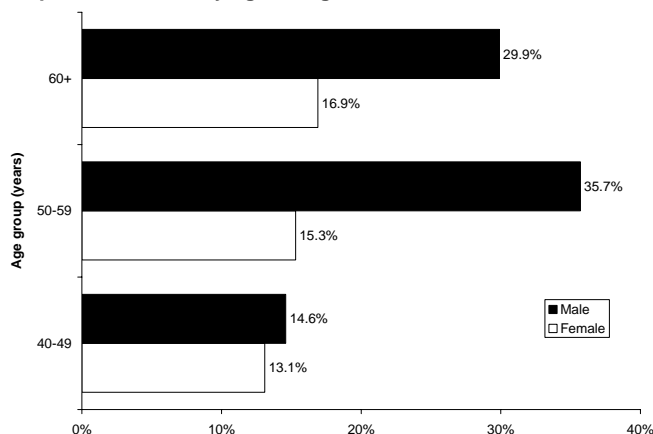
Figure 8. Screening tests for heart disease accessed in the past 12 months, in relation to age



Digital rectal exam (DRE)

The mortality rate associated with prostate cancer for First Nations males is slightly higher than that of the Canadian population (29.7 per 100,000 compared to 26.9 per 100,000). The mortality associated with colorectal cancer is, in comparison, slightly lower, at a documented 16.1 per 100,000 for First Nations compared to 18.4 per 100,000 per 100,000 for the Canadian population (males and females).¹⁵ General guidelines suggest that an annual DRE may assist in early detection for the over 50 population.¹⁶ As shown in Figure 9, of all tests investigated in this survey, DRE has the lowest rate of uptake. The reasons for this are not entirely clear, and may be due to the intrusive nature of the test or other reasons.

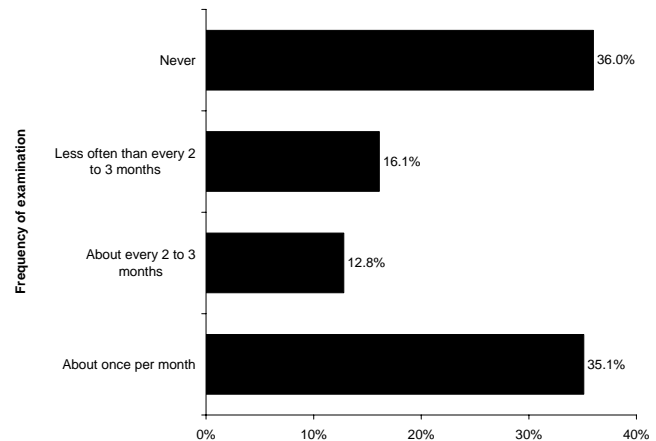
Figure 9. Digital rectal exam (DRE) screening tests accessed in the past 12 months by age and gender



Breast self-examination (BSE)

BSE has been recommended as an inexpensive and non-intrusive method for early detection of abnormalities. First Nations mortality from breast cancer remains less than half of that reported for the Canadian population (11.2 per 100,000 versus 25.0 per 100,000).¹⁷ Repeated studies have shown that this method is not effective in reducing mortality from breast cancer,¹⁸ unless women are trained to detect abnormalities. Figure 10 reports on First Nations women habits with regards to BSE. In comparison, the 2002-03 CCHS reports that 47.0% of Canadian women perform a BSE about once a month, 25.9% do so about every 2 to 3 months, and 27.0% do so less often than every 2 to 3 months.

Figure 10. Breast self-examination (BSE)



Pap Smear Test

The Pap Smear Test is a recognized measure for the prevention and early treatment of cervical cancer. This is in fact one of the most effective and successful methods of cancer prevention and early intervention.¹⁹ Early detection is a key issue for First Nations women. In 1992, Band et al.²⁰ reported that First Nations women living in British Columbia had a cervical cancer mortality rate four to six times that of other British Columbian women. Table 2 compares the frequency of Pap smear testing amongst First Nations and Canadian women. The level of coverage between the two populations is remarkably similar. This is encouraging, and shows improvement from the screening rates reported by Clarke et al.²¹ However, given the disproportionate mortality rate First Nations women experience as a result of cervical cancer, it would be advisable to strive for more systematic First Nations-specific screening strategies.

Table 2. When was the last time you had a PAP smear

Last instance	Canada, all women, All ages ²²	FN PAP Smear (N=5,260) All ages
Less than 6 months ago	52.7% ^{vi}	26.0%
6 months to less than 1 year ago		22.2%
1 year to less than 3 years ago	23.6%	27.4%
3 years ago to less than 5 years ago	12.3%	6.4%
5 or more years ago		7.4%
Never had one	10.2%	10.6%

It is worth noting that access to screening generally did not improve or worsen in transferred communities. This is not surprising. Most transferred communities are in non-isolated communities (402 out of 603, 67%, 2003 figures)²³ and offer public health, prevention and health promotion services. A majority of the screening tests listed above are not performed at these facilities, but rather be accessed from general practitioners or other providers located off-reserve.

Since a basis for a Canadian comparison is lacking, it remains impossible to ascertain whether access to preventive screening is reasonably accessible to First Nations respondents compared to other Canadians. Further, screening was not documented in the 1997 RHS, so it is not possible to document a trend. However, the burden of illness experienced by First Nations, (e.g., the generally lower age of onset for heart disease, cancer and diabetes mellitus) justify the development of First Nations-specific standards and strategies. Improving screening and prevention in the First Nations population will require the commitment of provincial health authorities and health providers, as well as on-reserve services.

Barriers to accessing care

Respondents were asked to identify the barriers they experienced in accessing health care in the past 12 months. The barriers included in the survey loosely fall into four broad categories:

- barriers related to First Nations-specific needs;
- barriers related to geography and availability of services;
- economic barriers; and
- systemic barriers

As shown in Table 3, a higher proportion of First Nations women reported having experienced certain barriers to care

than men. Systemic barriers were reported more often than any other categories. This is also the category with the widest difference between men and women.

Table 3. Barriers to access health services according to gender (n= 9991-10539)

	Overall	Male	Female	Diff.
Barriers related to First Nations-specific needs				
Chose not to see health professional	10.9%	11.7%	10.1%	(NS)
Felt service was not culturally appropriate	13.5%	13.1%	16.2%	(NS)
Felt health care provided was inadequate	16.9%	15.5%	18.4%	(NS)
Difficulty getting traditional care	13.4%	12.1%	14.7%	(NS)
Barriers related to geography and availability of services				
Health facility not available	10.8%	9.6%	12.1%	(NS)
Service was not available in my area	14.7%	12.4%	14.6%	(NS)
Doctor or nurse not available in my area	18.5%	15.1%	22.0%	6.9%
Economic barriers				
Could not afford childcare costs	7.1%	5.2%	9.2%	4.0%
Could not afford direct cost of care, service	13.2%	11.7%	14.8%	(NS)
Could not afford transportation costs	13.7%	11.6%	15.9%	4.3%
Systemic barriers				
Unable to arrange transportation	14.5%	11.6%	17.6%	6.0%
Approval for services under NIHB was denied	16.1%	13.0%	19.4%	6.4%
Not covered by NIHB	20.0%	18.6%	21.3%	(NS)
Waiting list too long	33.2	29.3%	37.3%	8.0%

As shown in Table 4, respondents who did not complete high school reported significantly more difficulties in accessing care compared to those who have attained higher levels of education.

Table 5 compares the results of the RHS to the results of the CCHS. Overall, First Nations men generally reported less barriers to care. First Nations respondents similarly reported waiting lists as a barrier when compared to their Canadian counterpart. Barriers associated with geography (lack of local services), economics (lack of transportation and cost of services) however affects First Nations disproportionately. First Nations are also much more likely to report difficulties with language, and perhaps as a consequence, to consider the services they receive as being inadequate or to decide not to seek care. Given the disproportionate burden of illness experienced by First Nations, this is a concern.

^{vi} This study was conducted by Statistics Canada, and did not use the same breakdown as the RHS.

Table 4. Barriers to accessing health care by education (n=9912-10409)

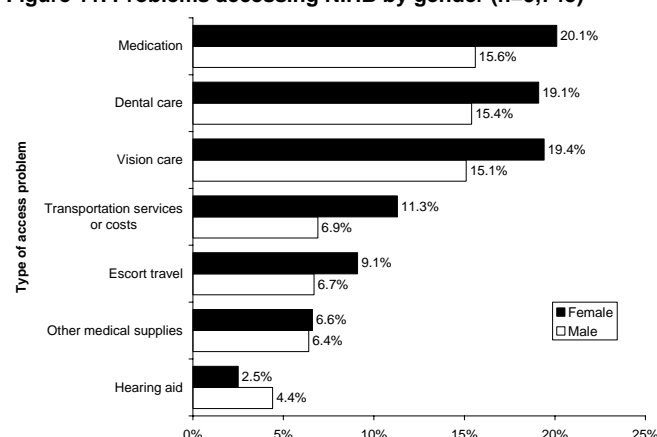
	Did not graduate high school	High school graduate	Diploma	University degree
Barriers related to First Nations-specific needs				
Felt service was not culturally appropriate	49.7%	15.5%	28.2%	6.7%
Felt health care provided was inadequate	51.4%	15.3%	27.8%	5.4%
Barriers related to geography and availability of services				
Health facility not available	63.1%	13.9%	19.9%	3.1%
Difficulty getting traditional care	48.9%	14.4%	30.4%	6.2%
Economic barriers				
Could not afford direct cost of care	50.5%	16.6%	28.1%	4.8%
Could not afford transportation costs	59.4%	15.4%	22.5%	2.7%
Systemic barriers				
Unable to arrange transportation	60.0%	16.4%	19.0%	4.6%
Not covered by NIHB	41.1%	17.4%	34.1%	7.4%
NIHB approval denied	45.0%	15.1%	32.0%	7.9%

Table 5. Barriers to access care, comparison between the CCHS24 and the RHS (n=9507-9847)

Barrier	RHS 2002-03		CCHS 2003 (n=13,416 throughout)	
	Male	Female	Male	Female
Language problems	-	-	0.4%	0.7%
Not culturally appropriate	12.4%	14.6%	-	-
Felt to be inadequate	15.5%	18.4%	8.7%	10.8%
Decided not to seek care	11.7%	10.1%	9.7%	6.6%
Transportation problems	11.6%	15.9%	1.2%	1.9%
Cost	11.7%	14.8%	11.2%	11.7%
Not avail. in area	13.1%	16.2%	9.9%	12.0%
Wait too long	29.3%	37.3%	35.0%	36.0%

Access to Non-Insured Health Benefits (NIHB)

Respondents were asked to report on their difficulties in accessing NIHB. The question asked was broad, and did not specify a time period (a year for example). Figure 11 shows the results. Women reported more problems for medication, transportation and vision care. The 1997 First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS) did not document access to NIHB, so it is not possible to explore trends.

Figure 11. Problems accessing NIHB by gender (n=9,745)

The relationship between access to NIHB and factors such as income, education or community size was not statistically significant.

Conclusions and Recommendations

Equitable access to primary health care is paramount in ensuring that the health inequalities documented in First Nations are addressed. Recent studies show that health care systems that promote primary health care are much more cost effective.²⁵⁻²⁶ More importantly, a strong primary health care system will help reduce the human cost associated with illnesses.

Although First Nations' rating of their access to health care appears to have improved in comparison to the 1997 RHS, the results of the 2002-03 RHS study suggest inequities in First Nations' access to primary health care. Improvements should be pursued in screening for heart disease (cholesterol), diabetes mellitus (blood sugar) and vision. Screening for breast, cervical, prostate and colorectal cancer (DRE) could also be improved. The level of DRE is remarkably low considering the First Nations mortality rate associated with prostate cancer. It is noteworthy that First Nations-specific screening and preventive standards have yet to be developed. This area requires attention, and would help guide community-based and primary prevention and screening activities.

Although First Nations and Canadians in general report long waiting lists, First Nations-specific barriers were also

documented, including barriers related to cultural appropriateness, costs, transportation, services not available locally and inadequate services. Access to NIHB is increasingly contentious for First Nations. These health provisions are seen by most as a Treaty right that cannot be eroded as a result of shift in federal priorities, policies or for cost containment. The federal government has instead taken the position that NIHB are provided to First Nations as a matter of policy, on humanitarian ground.²⁷ Transportation was also identified as a barrier. If the purpose of NIHB is to insure that First Nations have a more equitable access to services, then the results reported here suggests that current practices are not meeting their stated goals.

It is important to note that the results of this survey do not provide strong evidence on the effectiveness of health transfer. As of March 2003, FNIHB reports that,

- 1.9% of communities have entered into a self-government agreement;
- 47.9% have signed a transfer agreement;
- 28.6% signed an integrated agreement; and
- 21.6% are under a different type of agreement.²⁸
- The current RHS categories do not capture the complexity of First Nations self-government activities and introduce ambiguity in the results, since communities under an integrated or self-government agreement fall under the non-transferred communities, as would communities that are still under direct service delivery from FNIHB.

Second, most on-reserve health facilities are funded to offer only a limited number of health promotion and prevention services. Only Nursing Stations offer a more comprehensive complement of primary health care services. There are currently only 75 Nursing Stations across Canada.²⁹ While, as an example, all on-reserve facilities may have the capacity to increase First Nations women's awareness of BSE, only Nursing Stations could have a more direct impact on cholesterol testing.

The result of this survey instead speaks more readily to services delivered by provincial health care systems off-reserve, which provide screening and preventive services. Residents from communities that transferred alone, as opposed to as a part of a multi-community transfer, report better access. Prudence should be exercised in interpreting these findings. For one, multi-community transfers occur mainly in British Columbia and Saskatchewan. Second, access to services on-reserve may be constrained by the current financing formula, which was designed with single transfer communities in mind.³⁰ Third, it is unclear whether respondents were speaking to access to on or off-reserve services. The next RHS may perhaps assist in making this distinction.

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Chapter 13

The Impacts of Residential Schools

Abstract

This chapter presents findings on the impacts of residential schools on the health and well-being of First Nations. Of the adults interviewed, 1 in 5 attended residential school and stayed there an average of five years. Almost half of the residential school survivors reported that their overall health and well-being was negatively affected due to their attendance at residential school. The top four negative impacts effecting the overall health and well-being of survivors were isolation from family, verbal or emotional abuse, harsh discipline, and loss of cultural identity. Survivors were also victims of more subtle institutionalized forms of abuse, such as the loss of language, lack of proper clothing and food, and bullying from other children. Few survivors have acquired anything beyond the most basic academic skills. Furthermore, almost half of the adults interviewed believe that their parents' attendance at residential school negatively affected the parenting they received as children. The majority of adults also believe that their grandparents' attendance at residential school had a negative effect on the parenting that their own parents had received as children. This chapter is not intended to provide answers, but is meant to raise questions and promote dialogue about how the residential school experience has had enduring psychological, social, cultural and health effects on survivors. This chapter also issues a call for more in-depth studies to more precisely identify the effects of residential school and the factors contributing to recovery from these effects.

Introduction

Over 150 Indian Residential Schools¹ operated in Canada from the mid-19th Century to the late 20th Century.² Residential schools were the primary tools used by the government in pursuance of their policy of assimilating First Nations peoples—Indian and Inuit³—into the dominant Euro-Canadian culture.⁴ Between 1840 and 1980, an estimated 125,000 First Nations children, or about 20 to 30 percent of the First Nations population in Canada, attended residential schools⁵. This chapter consists of a discussion of the impact of these schools on First Nations adults. Specifically, the following areas are highlighted:

- The proportion of First Nations and Inuit adults who attended residential schools;
- The impacts of residential schools on the health and well-being of survivors;⁶
- Types of abuse experienced by survivors, including more subtle institutionalized forms of abuse (i.e., loss of language, loss of spirituality and traditions, and so on);
- Lack of education;
- The proportion of adults who had parents and grandparents who attended residential schools;
- The relationship to parent and grandparent residential school attendance and poor parenting; and
- The possible susceptibility of survivors to specific types of mental and health effects as a result of their residential school attendance.

Results and Discussion

Of the adults interviewed, 20.3%¹, or 1 in 5, attended residential schools, and spent an average of almost 5 years (4.8 years) there. Adults who attended residential schools usually started their attendance at about 10 years old and left the schools when they were 15. A 1991 survey⁷ of on-reserve Aboriginal people across Canada found that 39% of First Nations people (45+) had attended a residential school and had stayed there an average of six years. In general, the greatest proportion of adults who attended residential schools are 40 years of age and over.² The proportion of First Nations adults who attended residential schools generally increases with age—a reflection of the gradual disappearance of residential schools between the 1950's and 1990's (see Table 1, no significant difference between 60+ and 50-59 groups).

Researchers⁸ report that: the schools were often located in isolated areas; the children were allowed little or no contact with their families and communities; there was a regime of strict discipline and constant surveillance over every aspect

of their lives; and cultural expressions through language, dress, food, or beliefs were vigorously suppressed concurrently. Almost half of the survivors interviewed (47.3%) reported that their overall health and well-being has been negatively affected due to their attendance at residential schools (see Table 2).

Table 1. Proportion of First Nations adults who attended residential school

Age group	Percent
60+	43.3%
50-59	47.2%
40-49	26.5%
30-39	10.3%
18-29	5.7%

Table 2. Negative impacts on the health and well-being of survivors due to attendance at residential schools*

Negative outcome/impact on survivor due to:	Percent
Isolation from family	81.3%
Verbal or emotional abuse	79.3%
Harsh discipline	78.0%
Loss of cultural identity	76.8%
Separation from First Nation or Inuit community	74.3%
Witnessing abuse	71.5%
Loss of language	71.1%
Physical abuse	69.2%
Loss of traditional religion or spirituality	67.4%
Bullying from other children	61.5%
Poor education	45.4%
Harsh living conditions**	43.7%
Lack of food	43.2%
Lack of proper clothing	40.5%
Sexual abuse	32.6%

The findings reported in Table 2 suggest that the residential school experience has had enduring psychological and health effects on survivors. Although direct causal links are difficult to demonstrate with quantitative methods, researchers strongly indicate that there is clear and compelling evidence suggesting that the long history of cultural oppression caused by residential schools has contributed to high levels of mental health problems and other negative health effects found in many First Nations communities.

¹ To simplify the text, confidence limits are only reported for overall adult estimates with a coefficient of variation greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

² Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Survivors reported that isolation from their family (81.3%), verbal or emotional abuse (79.3%), harsh discipline (78.0%) and loss of cultural identity (76.8%) were among the top four negative impacts affecting their overall health and well-being. Mangham et al. (1995) found that separation from parents, exposure to violence and life stress are three of the most important family-level risks leading to an increased likelihood of negative outcomes later in life.

Stout and Kipling (2003) believe that the most telling legacy of the residential school system is the frequency with which survivors died an early death, demonstrated not only in the high incidence of suicide, but also in the large numbers of deaths due to violence or alcohol-related causes.¹⁰ In this study, 19.4% of survivors have attempted suicide in their lifetime; however, reports of attempted suicide by these individuals did not differ from adults who did not attend residential school.

In another study,¹¹ survivors contended that the treatment and abuse they suffered in residential schools caused them extreme emotional anguish that lingered on for years, often resulting in confused personal identities, alcoholism and the inability to engage in productive activities. This is the “Legacy¹² of the Indian Residential Schools.” We found that 26.7% of survivors have used one or more non-prescription drugs in the past year, compared to 35.8% of adults who did not attend residential school.¹³

Agnes Grant (1996) identifies four general categories of abuse perpetrated in the schools: physical, sexual, spiritual and psychological. The majority of survivors (71.5%) reported that they had witnessed the abuse of others and had experienced either one or more of the following types of abuse as a student in the schools: sexual abuse (32.6%), physical abuse (69.2%) and verbal or emotional abuse (79.3%). In another study, Chrisjohn et al. (1997) found that 79% of residential school attendees were abused in some manner, and that 48% were sexually abused.

Survivors were also victims of more subtle institutionalized forms of abuse.¹⁴ For example, survivors indicated that their overall health and well-being was negatively impacted by harsh living conditions (43.7%), lack of proper clothing (40.5%), bullying from other children (61.5%), loss of language (71.1%) and loss of traditional religion or spirituality (67.4%). Other researchers have reported similar findings, noting how survivors were confronted with a difficult environment. This environment included heavy chores, bullying from other children, and a lack of sufficient food.¹⁵

In terms of loss of language, one-third (30.3%) of survivors can not speak one or more First Nations or Inuit languages fluently, and 25.2% have no understanding of any First Nations or Inuit language. Claes and Clifton (1998) strongly believe that the prohibition of Aboriginal languages was a priority of the first order in the suppression of First Nations

cultures, and that the disciplinary regime of the schools worked to denigrate all aspects of First Nations life and customs. Nonetheless, we do find that 69.7% of those who did attend residential school can speak one or more First Nations languages, versus 37.4% who did not attend residential schools. A similar pattern exists for those understanding one or more First Nations languages: 74.8% of those who attended residential school can understand one or more First Nations languages, compared to 43.7% of those who did not attend residential school. This might indicate patterns of resilient behaviour among children who attended residential school. There have been studies indicating that the resiliency of children in residential school proved to be a factor in their overall survival in that environment. Resiliency among children to secretly speak to one another in the language of their First Nation as an act of rebellion in residential school may have contributed to the preservation of language(s). At the same time, common sense would seem to dictate that the passing of time could also be a factor in language retention rates among residential school attendees vs. non- attendees. For a variety of reasons, fluency and understanding of First Nations languages has been receding as the generations pass, and the older generations were more likely to attend residential school. Retention rates may be higher among survivors, since at least they were more likely to be exposed to the language in their formative years, before being taken away from the community.

In 1945, out of approximately nine thousand First Nations children enrolled in residential schools, none went beyond grade nine. Researchers have reported that few survivors acquired anything beyond the most basic academic skills.¹⁶ This is reflected in the findings of this study; for adults who attended residential schools, the majority (55.5%) did not graduate from high school. However, this is not significantly different from adults who did not attend residential schools. In terms of attaining and completing higher formal education such as a bachelor or graduate degree, only 6.0% of survivors have a bachelor’s degree; however, this is not significantly different from adults who did not attend residential school (see Table 3).

Table 3. Proportion of First Nations survivors who have completed formal education

Level of formal education completed	%
Did not graduate high school	55.5%
High school Graduate	11.1%
Diploma from college, university, trade, technical or vocational school	27.3%
Bachelor’s Degree	6.0%
Master’s Degree (Graduate Degree)	–

– Data suppressed due to insufficient sample size.

It should be noted that the completion of formal education¹⁷ for survivors most likely did not take place immediately after they left a residential school. Stout and Kipling (2003) indicate that the majority of survivors who hold diplomas or degrees from trade schools, vocational schools, colleges and universities enrolled as mature students, after years spent raising a family or employed in the labour force. The completion of formal education studies by these survivors should be highlighted as an incredible accomplishment, given the adversity they faced as children in residential schools.

In the 1990's, several Canadian provincial inquiries discussed the relationship between the residential school system, family violence and sexual abuse. The First Nations Justice Inquiry of Manitoba (1991) stressed that many of today's First Nations parents and grandparents who went through the residential school system were denied role models from which they could learn proper parenting skills. In other residential school studies, many formal students have indicated that their confinement in the residential school system left them ill-prepared to become parents in their own right.¹⁸ Table 4 summarizes intergenerational attendance at residential schools.

Table 4. Proportion of First Nations adults who had parents, grandparents or both parents and grandparents attend residential schools

Intergenerational residential school attendance	Percent
Adults who had one or more parent attend residential school	49.3%
Adults who had one or more grandparent attend residential school	39.7%
Adults who had one or more parent and grandparent attend residential school	15.3%

Almost half (43.0%) of the adults interviewed believe that their parents' attendance at residential schools negatively affected the parenting that they received as children. The majority of adults (73.4%) also believe that their grandparents' attendance at residential schools negatively affected the parenting that their own parents had received when they were children. The failure of survivors to be taught positive strategies for dealing with interpersonal conflict may have led to high rates of family breakdown and problems that youth carried with them into their adult lives.

The notion of the historic trauma response (HTR) refers to the cumulative wounds inflicted on First Nations people over their lifetime and over the lifetimes of their ancestors, resulting in potentially chronic symptoms that range from depression and psychic numbing to hyperglycaemia (high blood sugar) and substance abuse.¹⁹ In addition to suffering from mental health effects and other negative social effects, survivors interviewed in this study showed an increased

susceptibility to specific types of mental and physical health effects resulting from their attendance at residential schools.

Survivors are more likely to suffer from a variety of health effects such as tuberculosis, diabetes, arthritis, and allergies, to name a few. It can be noted that attendance at residential schools is not the only causal factor related to being diagnosed with health problems listed in Table 5. Some diseases may be associated with age, gender, likelihood of high-risk lifestyles and other factors. However, there are some noteworthy health differences between those adults who did not attend residential schools and those who did.

Table 5. Residential school attendance and diagnosis of illnesses*

Diagnosis	Survivor	Non-survivor
Arthritis	30.0%	15.6%
Diabetes	28.7%	10.8%
High blood pressure	23.0%	13.0%
Chronic back pain	20.3%	12.6%
Hearing impairment	15.8%	6.4%
Stomach or intest. problems	11.0%	6.8%
Cataracts	9.8%	2.9%
Tuberculosis	8.8%	1.5%
Heart disease	8.3%	4.0%
Thyroid problems	5.7%	3.5%
Rheumatism	5.4%	2.7%
Osteoporosis	5.4%	2.3%
Chronic bronchitis	5.2%	2.5%
Glaucoma	4.2%	1.1%
Effects of stroke	3.2%	1.0%
Liver disease**	2.4%	1.1%

*Only significant result are reported $p < .05$

**Excludes Hepatitis

In a study of residential school sexual and physical abuse victims,²⁰ survivors indicated a reliance on First Nations and other sources of help rather than on Euro-Canadian mainstream sources of support. The two most frequently used sources of support and aid included First Nations Elders and the sweat lodge. Over half of the survivors (58.6%) indicated that traditional cultural events and traditional spirituality (54.2%) are very important in their lives. Additionally, 42.5% of survivors say that religion is very important in their lives. For survivors who have gone on to lead well-adjusted lives, religious beliefs and spirituality are frequently cited as reasons for their current well-being.²¹ Aboriginal spiritual traditions have proven particularly attractive to former pupils, who see them as a way of claiming their own identity and finding meaning in their lives.²²

Conclusion

In summary, residential schools have adversely affected the overall mental and physical well-being of survivors. The shame, pain and hopelessness resulting from abuses²³ arising from residential schools have led to internalized oppression, lateral violence and post-traumatic stress disorder, among other things.²⁴ Many survivors in other studies have reported symptoms reminiscent of post-traumatic stress disorder, including nightmares, sleep problems, apathy, and depression.²⁵ It could be argued that every residential school student was subject to abuse of one kind or another, including subtle forms of abuse that had drastic effects on their overall well-being, such as removal from families, isolation from communities, and the destruction of their culture, language and identity. Chronic under-funding of the residential schools also left children hungry, malnourished, inadequately clothed, and forced into labour to support the daily costs of running the schools.²⁶

While the figures in this study give one an idea of the many lives that have been touched indirectly and directly by the residential school legacy, they cannot begin to capture the physical, psychological, spiritual and cultural harm the schools inflicted on survivors, their families and communities.²⁷ Several researchers²⁸ remind us that there has yet to be an in-depth study conducted on First Nations peoples that captures both the effects of , and the recovery from, residential schooling. With the exception of a reasonably comprehensive study by Chrisjohn et al. (1997), most studies²⁹ on residential school survivors and the legacy of intergenerational effects (direct and indirect) left by the schools tend to focus on single communities of localized populations with relatively small numbers of informants.

This chapter is not intended to provide the answers, but is meant to raise questions and dialogue about the overall impacts of residential schools on the health and well-being of survivors (eg. connection to other illnesses, intergenerational effects, etc.). It is hoped that individuals who read this chapter question the findings, in order to discern the numerous individual and collective outcomes experienced by First Nations peoples as a result of the residential school experience in Canada.

Notes to Chapter 13

1. Madeline Dion Stout and Gregory Kipling, *Aboriginal People, Resilience and the Residential School Legacy: The Aboriginal Healing Foundation Research Series* (Ottawa, Ont.: The Aboriginal Healing Foundation, 2003). **Note:** The residential school system in Canada attended by status Indians, Inuit and Métis children included industrial schools, boarding schools and homes for students, hostels, billets, residential schools, and residential schools with a majority of day students, or a combination of any of the above.
2. Aboriginal Healing Foundation, *Where are the Children? Healing the Legacy of the Residential Schools* (Ottawa, Ont.: Legacy of Hope Foundation, 2003).
3. Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*. **Note:** Status Indians formed the majority of attendees at any given time; however, the residential schools later accepted many Métis children in order to boost school enrollment figures. In addition, the number of Inuit children grew quickly in the 1950s when a network of schools was built across the North. Regardless of the manner in which they found themselves enrolled,

- status Indian, Métis and Inuit Survivors have all had to contend with the Legacy of their residential school experiences.
4. • Jennifer J. Llewellyn, "Dealing with the Legacy of Native Residential School Abuse in Canada: Litigation, ADR, and Restorative Justice," *University of Toronto Law Journal* 52 (2002), pp. 253-300.
• V. Coleman and B. Thorpe, "Researcher defends residential schools," *The National Post* [online] March 17, 2001 [cited 30 April, 2005]. Available from World Wide Web: <<http://www.uccan.org/airs/010323.htm>>.
5. Murray R. Thomas, 2003, Can money undo the past? A Canadian example, *Comparative Education*, 39, 3: 331-343.
6. Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*. **Note:** A Survivor is an Aboriginal person who attended and survived the residential school system.
7. Statistics Canada, "Aboriginal Peoples of Canada: A demographic profile," 1991 *Aboriginal Peoples Survey*, Catalogue 89-533 (Ottawa, Ont.: Statistics Canada, 1991).
8. Laurence Kirmayer, Cori Simpson and Margaret Cargo, 2003, Healing traditions: culture, community and mental health promotion with Canadian Aboriginal peoples, *Australasian Psychiatry*, 11: 15-23.
10. Rhonda Claes and Deborah Clifton, *Needs and Expectations for Redress of Victims of Abuse at Native Residential Schools* (Ottawa, Ont.: Law Commission of Canada, 1998).
11. *Ibid.*, p. 5.
12. Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*. **Note:** The Legacy refers to on-going direct and indirect effects of physical and sexual abuse at residential schools. The Legacy includes the effects on Survivors and their families, descendants and communities (including communities of interest). These effects may include, but are not limited to, family violence, drug, alcohol and substance abuse, physical and sexual abuse, loss of parenting skills and self-destructive behavior.
13. **Note:** Non-prescription drug use excludes chewing tobacco.
14. Llewellyn, "Dealing with the Legacy of Native Residential School Abuse in Canada: Litigation, ADR, and Restorative Justice," *University of Toronto Law Journal*.
15. • Celia Haig-Brown, *Resistance and Renewal: Surviving the Indian Residential School*, 7th ed. (Vancouver, B.C.: Arsenal Pulp Press, 1988).
• Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*.
• Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*.
• Isabelle Knockwood, *Out of the depths: The experiences of Mi'kmaq children at the Indian residential school at Shubenacadie, Nova Scotia* (Lockport, N.S.: Roseway, 1992).
17. **Note:** Formal education is defined as within the public or private schooling system of mainstream Canadian society.
18. Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*.
19. *Ibid.*, p. 17.
20. Roland Chrisjohn, Sherri Young and Michael Maraun, *The circle game: shadows and substance in the Indian residential school experience in Canada* (Penticton, B.C.: Theytus Books, 1997).
21. *Ibid.*, p. 17.
22. *Ibid.*, p. 17.
23. Ruth Morin and Alfred Riediger, *Healing Together, Our Sacred Journey* (Edmonton, Alta.: Nechi Training Research and Health Promotions Institute, 2000).
24. • Eduardo Duran and Bonnie Duran, *Native American Post Colonial Psychology* (New York, N.Y.: SUNY Press, 1995).
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25. Knockwood, *Out of the depths: The experiences of Mi'kmaq children at the Indian residential school at Shubenacadie, Nova Scotia*.
26. *Ibid.*, p. 14.
27. *Ibid.*, p. 14.
28. • Knockwood, *Out of the depths: The experiences of Mi'kmaq children at the Indian residential school at Shubenacadie, Nova Scotia*.
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• Stout and Kipling, *Aboriginal People, Resilience and the Residential School Legacy*.
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29. • Harvey D. Plouffe, *The Indigenous Healing Process and Cultural Rebirth of First Nations*, unpublished dissertation, Fielding University, California, 2000.
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• N. Rosalyn Ing, 1991, The effects of residential school on Aboriginal child-rearing practices, *Canadian Journal of Native Education*, 18, Supplement: 65-116.
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Chapter 14

Mental Health, Wellness, and Personal Support

Abstract

First Nations people continue to struggle with issues affecting their mental health and personal wellness. They are challenged in the process of accessing support and services, and consistently encounter more obstacles to access than the broader Canadian population. The data presented in this chapter examines aspects of mental health and personal wellness, and respective supports. This analysis enables us to monitor the conditions relating to mental health and personal wellness, to prepare for helpful prevention, and to increase outreach activities. Although the majority of First Nations people surveyed claim to feel in balance physically, emotionally, spiritually and mentally, the population is still challenged with issues regarding suicide. Many First Nations adults feel sad, blue or depressed, and have suicidal ideations. Continued experiences of racism also impact mental health and well-being. People who are in balance seek personal and emotional supports from immediate family members or traditional healers, while those who are feeling sad, blue or depressed are more likely to report using mainstream mental health and emotional supports almost exclusively. Overall, access to appropriate mental health support must be improved to benefit the mental health and well-being of First Nations peoples. An overall goal of supporting balanced lifestyles for First Nations people also needs to be considered.

Introduction

Historical factors affecting the mental health of Aboriginal communities have gained attention through various initiatives, such as the Aboriginal Healing Foundation¹ and the Aboriginal Healing and Wellness Strategy.² However, data documenting the state of mental health for First Nations people are extremely limited, in comparison to the mass of data available regarding the general Canadian population.

Most national or regional studies do not focus on First Nations people. While many First Nations communities are beginning to undertake research studies for their own use and planning strategies, they generally do not release this information to external agencies as a means of ensuring self-determination and concerns over the proper utilization of such information. Far too often, First Nations communities have found themselves the focus of academic research that has little if any commitment to community development. This historical fact has made information very difficult to access. The Royal Commission on Aboriginal Peoples (1996) detailed conclusively the problems First Nations communities have with mental health and well-being.³ This chapter shows how a sample of the First Nations population views mental health, personal wellness and supports at this particular time.

Interpretation methods

The cultural framework set out by the First Nations Regional Longitudinal Health Survey (RHS) was employed to ensure the use of a community-based approach in researching the health and well-being of our people. Using a four directions model, the following data are related to the first direction, the East. The East represents vision, and the need for cultural respect and understanding of the current state of our people's health.

The RHS cultural framework embodies a “total person” and “total environment” model, which includes:

- The individual's spiritual, emotional, mental and physical well-being;
- Their culture's values, beliefs, identity, and practices;
- Their community and their relationship to the physical environment; and,
- Their connectedness to family.

The following chapter examines the mental health and personal wellness of the First Nations population, and supports available for them, with guidance from the RHS cultural framework. Suicide and racism are highlighted in several sections of this study.

A glance at the literature

The Statistical Report on the Health of Canadians (1999) reports that some First Nations people have major depressive

episodes, while others show a tendency towards depression.⁴ The report asserts that these depressed people are at risk of suicide. These risk factors are increased for those who grapple with various addictions or traumatic life experiences.

Further to this, it can be asserted that various types of trauma are contributing factors to First Nations peoples' general experience of poor mental health, personal wellness and access to supports. This prevalence of trauma may be attributed to the intergenerational effects of colonialism. For example, the Aboriginal Healing Foundation Mental Health Profile Report states that: 100% of the case files reported sexual abuse at residential school; 90% reported physical abuse; 75% reported alcohol abuse; and 21.1 % reported major depression.⁵

In addition, the 1997 First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS) reported that about 18% of the general Aboriginal adult population surveyed met the criteria for major depression; 27% reported problems with alcohol; 34% reported sexual abuse during childhood; and 15% attempted suicide at some time in their lives.⁶

Causes of poor mental health have been related to colonization and assimilation policies. In their article “The Mental Health of Aboriginal Peoples: Transformation, Identity and Community,” Kirmayer, Bass and Tait acknowledge the consequences to First Nations mental health of policies arising from contact, reserve creation, residential schools, disruption of traditional subsistence patterns and connection to the land.⁷

One testament to the poor overall state of mental health among First Nations people is the suicide rate across all age groups, which is approximately three times higher than the national average. The Royal Commission on Aboriginal People (RCAP 1996) further asserts that up to 25% of accidental deaths among Aboriginal Canadians are unreported suicides.⁸

Results

Mental health, personal wellness and support

Respondents felt in balance in the four aspects of their lives most of the time. 70.9%¹ felt in balance physically, 71.0% emotionally, approximately 75% felt in balance mentally, and about 69.0% felt in balance spiritually.

Despite these high levels of perceived balance among the respondents, 37.9% have experienced instances of racism in the past 12 months, and 30.1% have experienced a time when they felt sad, blue or depressed for two weeks or more in a row.

Further to this, data on suicidal thoughts and attempts were alarming, and contradict the notion that First Nations people

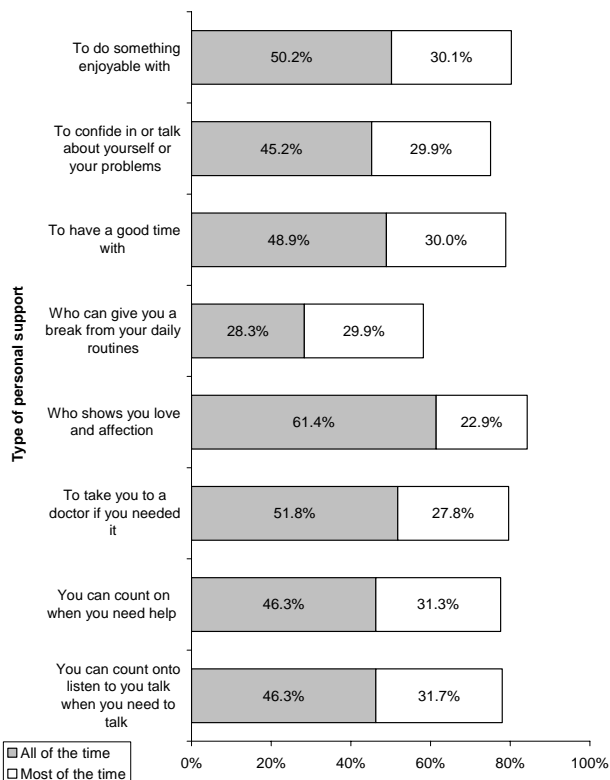
¹ To simplify the text, confidence limits are only reported for overall adult estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

are in balance. Overall, 30.9% reported having suicidal thoughts over their lifetime. There were no significant gender differences in lifetime ideation of suicide. Moreover, 15.8% reported having attempted suicide at least once in their lifetime. Females were more likely than males (18.5% vs. 13.1% respectively)ⁱⁱ to have attempted suicide at least once in their life.

Adults between the ages of 18 and 59 were more likely than those 60 and over to have thought about suicide in their lifetime. The lowest rate of suicide ideation occurs among the 60+ group, with 11.7% (versus 27.3 - 36.5% for all other age groups). A similar pattern exists with respect to attempted suicides in the lifetime of respondents. Only 6.4% of adults over 60 reported having attempted suicide in their lifetime, versus 15.4 - 18.6% among the other age groups.

This section looks at the constellation of factors that may impact mental health and personal wellness, especially in light of personal support. In relation to the availability of personal support, over 61% of respondents felt they always have someone to show them love and affection. Over half of the respondents felt they always have someone who will take them to a doctor (51.8%), or someone to do something enjoyable with (50.2%). Unfortunately, the availability of someone who can always give them a break from their daily routines was quite low, at 28.3% (Figure 1).

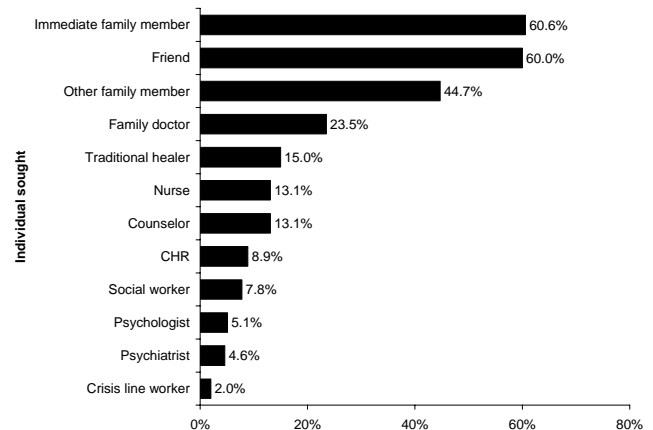
Figure 1. Availability of personal support (n=10,507)



ⁱⁱ Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Roughly 60% of respondents seek emotional or mental support from immediate family and friends (Figure 2). This is followed by 44.7% of individuals who seek this type of support from other family members. Approximately 24% received emotional or mental health support from their family doctor, followed by 15% who reported the use of traditional healers. About 5% sought support from a psychiatrist and/or psychologist, while roughly 2% received support from a crisis line worker.

Figure 2. Individuals First Nations adults sought for support



An important factor that may impact mental health and well-being is one's experience of racism. Roughly two out of five (37.9%) respondents experienced instances of racism, and they were asked to elaborate on such experiences by answering further questions concerning racism. These respondents were asked to state how strongly they agree or disagree with a series of statements (Table 2).

Education

Individuals who did not graduate high school are less likely than those who have attained higher levels of education to report that they have personally experienced an instance of racism during the previous year.

Employment

The percentage of respondents who thought about suicide during their lifetime was similar for both those working for pay and those who were not, with only a 2.7% difference. However, 42.3% of those who work are more likely to have experienced racism than those who do not currently work for pay (33.5%). Those who work 15 hours a week or more reported higher proportions of racism than those who are working less than 15 hours a week.

In relation to government sources of income, the rate of suicidal ideation increases from 27.5% for those who do not receive any government sources of income to one third (31.3% to 33.9%) for those who receive sources of government income (Table 3). Dependence on government may be a factor in a person's locus of control and sense of self.

Table 2. Reported instances of racism by levels of agreement to self-esteem related statements (n=8,228) (a=racism reported, b=racism not reported)

Agreement/disagreement statements	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree	
	a	b	a	b	a	b	a	b	a	b
I can solve the problems that I have	38.6%	35.5%	46.9%	50.1%	10.4%	10.1%	3.2%	3.3%	–	–
No one pushes me around in life	39.5%	38.9%	39.2%	45.8% *	14.4%	10.3% *	6.0%	4.3%	0.9%	0.6%
I have control over the things that happen to me	29.1%	31.4%	45.6%	50.9%	17.5%	11.9% *	6.3%	5.1%	1.6%	0.6%
I can do anything I really set my mind to	44.0%	38.9%	43.6%	50.8% *	9.7%	7.2%	2.4%	3.0%	–	–
I often feel helpless in dealing with problems of life	4.5%	5.6%	17.4%	19.9%	18.5%	16.9%	45.4%	47.5%	14.2%	10.2%
What happens to me in the future mostly depends on me	43.7%	33.3% *	45.8%	53.4% *	7.2%	9.3%	2.8%	3.2%	–	0.8%
There is little I can do to change many of the important things in my life	6.1%	8.1%	17.1%	22.5% *	13.2%	13.2%	45.1%	44.9%	18.5%	11.2%

* Significantly different from those who report experiencing an instance of racism

– Data suppressed due to insufficient cell sizes.

Table 3: Number of government income sources and rates of suicidal thoughts

# of government income sources	Rates of suicidal thoughts
0	27.5%
1	31.3%
2+	33.9%

Perceived Health Status

The rate of those reporting suicidal thoughts during their lifetime decreased with improved self-reported health status, from 38.4% among those with fair and poor rated health to 28.9% among those with excellent self-reported health. There were no significant differences, however, between suicide attempters and non-attempters with respect to why they felt healthy.

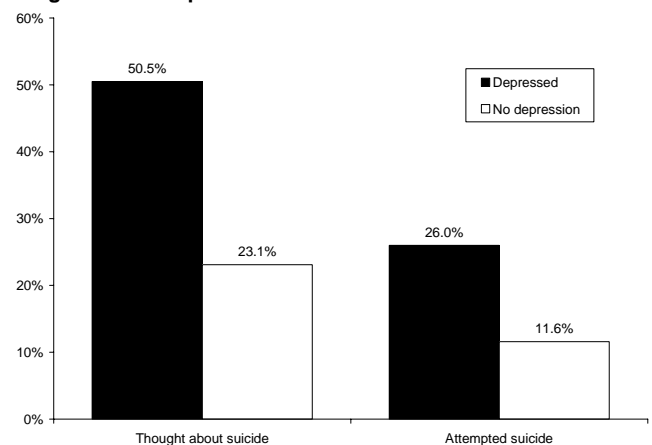
Depression

Individuals who report a time when they felt sad or depressed for two weeks in a row or more are more than twice as likely to report a suicide ideation and attempt. Thus, the antecedents to attempted suicide deserve further exploration.

Disability

People with disabilities experience limitations in home, school, work and leisure activities, which may in turn impact on their mental health and overall well-being. Also, during school/work and leisure activities people with disabilities report a higher proportion of racism experiences, which may have mental health impacts as well. People who report limitations within their home are more likely to report personal experiences of racism, and that this has had a very

strong effect on their self-esteem, compared to those who are not limited in activity at home.

Figure 3. Relationship between reported depression and suicide thought and attempt

Self-Esteem

Self-esteem is the confidence and satisfaction one has regarding one's self. Of First Nations adults reporting that their self-esteem was affected by instances of racism, 13% stated that it had a strong or very strong effect, and a further 22.7% reported that it had some effect (see Table 4). In addition, 27.6% stated that it had little effect and 36.8% cited no effect. A slightly but significantly higher percentage of those who had suicide ideation felt that racism experienced by them had a very strong effect (5.8%) on their self esteem, compared to those who did not report ever thinking about suicide (2.9%).

In addition, it is apparent from the personal statements on control in one's life - or locus of control - that feelings of sadness, experiencing the blues or depression are related to an individual's perceptions of control and self-worth.

Table 4. Self-determination indicators by feelings of depression or sadness.

% strongly agreeing that...	Depressed	
	Yes	No
I can solve the problems I have	32.4%	38.5%
No one pushes me around in life	33.8%	41.0%
I have control over things that happen to me	28.0%	31.1% (NS)
I can do just about anything I set my mind to	35.2%	43.2%
I often feel helpless in dealing with the problems of life	7.4%	4.1%
What happens to me in the future mostly depends on me	37.0%	37.6% (NS)
There's little I can do to change many of the important things in my life	10.6%	5.9%

Access to Health Care

According to the data, those with suicidal ideation and/or those who have experienced an instance of racism perceive their access to health care as poor in comparison to other Canadians. A majority (64.4%) of First Nations people perceive their access to health care to be the same as or better than that of other Canadians. Adults reporting that they had personally experienced an instance of racism compared to those who did not have such an experience are more likely to report that they have less access - and are less likely to report they have the same access - to health care, compared to other Canadians. Similarly, significant differences appeared among those who reported an incident of racism and those who did not, in terms of reporting *barriers* to health care access. Adults who indicated that they had experienced racism were more likely than those who did not to report virtually all barriers to health care access (see Table 5).

In addition, attitudes reported by First Nations people on the importance of traditional cultural and spiritual beliefs have statistically significant linkages with personal experiences of racism. Interestingly, those who had experienced an incident of racism are more likely to deem traditional cultural events and traditional spirituality as very important.

Adults who reported that they had felt depressed or sad for two or more consecutive weeks are less likely to report that they feel in balance physically, emotionally and mentally *all of the time*, compared to those who did not report depression. However, adults who report feelings of depression or sadness are more likely to report that they feel in physical, emotional

and spiritual balance *almost none of the time*, compared to those who did not indicate depression.

Table 5. Report barriers to health care access by perceived experiences of racism

Healthcare access barrier	Experienced racism	
	Yes	No
Doctor/Nurse not available in area	23.2%	15.6%
Health facility not available	12.0%	9.7% (NS)
Waiting list too long	42.5%	27.7%
Unable to arrange transportation	20.1%	11.4%
Difficulty getting traditional care	19.2%	9.7%
Not covered by Non-insured Health Benefits	28.9%	14.8%
Approval for services under NIHB was denied	24.4%	11.2%
Could not afford direct cost of care, service	19.8%	9.2%
Could not afford transportation costs	19.4%	10.1%
Could not afford childcare costs	10.5%	5.0%
Felt health care provided was inadequate	24.2%	12.9%
Felt service was not culturally appropriate	20.2%	9.7%
Chose not to see health professional	14.9%	8.5%
Service was not available in my area	19.6%	11.7%

Nutrition

Those who feel sad, blue or depressed are less likely to always or almost always eat a nutritious, balanced diet compared to those who did not indicate depressive states.. However, those reporting depressive states are more likely to *sometimes* consume a nutritious, balanced diet than those not indicating depressive states.

Residential school

The number of First Nations who reported feeling sad, blue or depressed and also reported attending residential school is 23.5%, which is not significantly different than those who did not report feeling sad, blue or depressed, at 19.2%. When asked about the negative effects of residential school on their health, residential school survivors who reported depression were statistically similar in relation to these negative effects (51.6%) to those who were not depressed (45.0%). 48.4% of survivors who did not believe their health suffered negative results from residential school reported depression.

Personal support

First Nations use of mental health and emotional supports varies for those reporting feeling sad, blue or depressed (see Table 6).

Table 6. Depressive states and the use of family and community supports

Feeling sad, blue or depressed for 2 or more weeks in a row	Not feeling sad, blue or depressed for 2 or more weeks in a row
71.7% Friend	57.8% Immediate family member
68.5% Immediate family member	55.7% Friend
52.0% Other family member	42.2% Other family member
31.8% Family doctor	20.4% Family doctor
19.7% Counsellor	14.0% Traditional healer (NS)
18.6% Nurse	10.8% Nurse
17.6% Traditional healer	10.3% Counsellor
13.5% Community health representative	7.2% Community health representative
12.7% Social worker	5.7% Social worker
9.1% Psychiatrist	3.8% Psychologist
8.4% Psychologist	2.7% Psychiatrist
3.6% Crisis line worker	1.0% Crisis line worker

Those who reported feeling sad, blue or depressed ranked friends and family as their top choices for support. Those who reported no feelings of sadness, being blue or depression ranked their use of support similarly. However, those reporting depression cited higher use of supports available for their emotional and mental health needs.

Adults who reported a high or moderate level of balance are more likely than those with a low level of balance to cite the use of immediate family members and a traditional healer as sources of emotional and mental health support. However, those citing a high level of balance are less likely to indicate the use of a psychiatrist than those with moderate or low levels of balance.

Community progress

First Nations adults who reported a low level of balance are more likely to indicate that their community was not progressing in relation to most indicators, including those relating to culture as depicted in Table 7.

Table 7. Proportion reporting community progress by level of perceived balance (a=no progress, b=some or good progress)

Community progress indicator		Level of balance		
		Low	Moderate*	High*
Traditional approaches to healing	a	59.9	40.8	37.8
	b	40.1	59.2	62.2
Renewal of First Nations/Inuit spirituality	a	65.7	43.1	40.5
	b	34.3	56.9	59.5
Traditional ceremonial activity	a	61.8	36.4	33.2
	b	38.2	63.6	66.8
Renewal relationship with land	a	63.0	44.8	44.3
	b	37.0	55.2	55.7
Use of First Nation/Inuit language	a	49.3	38.8 (NS)	36.3
	b	50.7	61.2 (NS)	63.7
Reduction in alcohol and drug abuse	a	68.3	63.6 (NS)	62.9 (NS)
	b	31.7	36.4 (NS)	37.1 (NS)
Availability of First Nation/Inuit health professionals	a	57.8	40.0	37.8
	b	42.2	60.0	62.2
Cultural awareness in schools	a	34.2	22.9	19.6
	b	65.8	77.1	80.4
Education and training opportunities	a	30.2	21.9 (NS)	19.5
	b	69.8	78.1 (NS)	80.5
Housing quality	a	56.3	40.6	37.1
	b	43.7	59.4	62.9
Water and sewage facilities	a	40.9	30.0	30.4 (NS)
	b	59.1	70.0	69.6 (NS)
First Nations/Inuit control over health services	a	47.1	36.0	31.7
	b	52.9	64.0	68.3
Recreation and leisure activities	a	54.2	47.7 (NS)	40.1
	b	45.8	52.3 (NS)	59.9

* Significantly different from low level of balance unless indicated by (NS)

Discussion and Recommendations

The data presented in this chapter reveals several areas of concern for First Nations mental health and well-being, one of the primary concerns being the presence of racism in a variety of contexts. Attention should be devoted to racism awareness in the workplace, as a large number of First Nations people working for pay and working multiple jobs experienced far more instances of racism than those who are not working for pay. It can be asserted that racism is an important factor that impacts on our mental health and well-being, and should be further explored.

Further discussion on family composition and dynamics may explain the availability of personal supports for people who are depressed or have need to seek emotional and personal supports. In addition, information specific to nation or

community could help address wellness-enhancing resources. This chapter provided an overview of the preferential choices of First Nations people when seeking supports. In addition to friends and family members, family doctors rank highly as important and readily relied upon resources for First Nations people seeking support. For this reason, family doctors should be suitably prepared to engage as integral components in supporting the mental and emotional health of First Nations people.

Future research, interventions and policy related to First Nations mental health should incorporate resiliency promotion for individuals and their families and friends, to cope with challenges arising at the personal, family, and community levels. The building of mental health capacity within First Nations communities and affiliated health care facilities should be encouraged. The consideration of the idea of feeling holistic balance in the survey design provides insight into an Indigenous approach that future surveys can embrace.

This chapter examined First Nations mental health and well-being. It gives us an indication of how we (First Nations) are doing right now. This data will be compared to the next data collection stage of the RHS, with proactive measures and further development to benefit mental health, personal wellness and supports among First Nations adults.

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Chapter 15

Community Wellness

Abstract

Community wellness from an Indigenous knowledge framework requires a close examination of the unique assumptions contained within the worldview of First Nations peoples. For First Nations peoples, the path to community wellness is to be found within a holistic paradigm that includes the mental, physical, cultural and spiritual well being of both the individual and the community. The Western biomedical model, premised on European cultural constructs, does examine some determinants of health and wellness - for example, housing, employment and education - but is unable to absorb the negative health impact of colonialism and is culturally limited in its definition of wellness.

Defining Community Wellness from an Indigenous Knowledge Framework

Community wellness from an Indigenous knowledge framework requires a close examination of the unique assumptions contained within the worldview of First Nations peoples. For First Nations peoples, community wellness is related to the mental, physical, cultural and spiritual well-being of both the individual and the community. The Western biomedical model does not embrace Indigenous cultural constructs such as values relating to culture and the land. Also, the literature reveals the impact of colonialism on First Nations health and community wellness. This chapter will discuss Indigenous knowledge and its relevance as an appropriate framework to discuss First Nations peoples and their community wellness.

There is little, if any, acknowledgment of Indigenous knowledge perspectives being “empirical.” This lack of acknowledgement seems somewhat inherent to the biomedical model, “which focuses on the physical processes, such as the pathology, the biochemistry and the physiology of a disease. It does not take into account the role of a person's mind or society in the cause and treatment”¹ - or any other legitimate, scientific approach to health and illness. Any other “wellness” (as opposed to “illness”) system, no matter how ancient, is seen as secondary and at most complementary/ alternative, but unscientific. However, for many First Nations peoples their worldview includes an empirical and scientific based health paradigm grounded in language and other cultural practices. Most Indigenous health paradigms have been shaped outside of mainstream institutions and the academy and are connected to their distinct view of the world. The global community has begun to analyze and appropriate Indigenous knowledge in many spheres, including health, and found it to be scientifically valid in its practices and processes. Indigenous knowledge is a complete knowledge system with its own epistemology, philosophy, and scientific and logical validity, which can only be understood by means of pedagogy traditionally employed by the people themselves.²

Indigenous pedagogy acknowledges diverse ways of knowing and respects the plurality of knowledge. Geographic and cultural diversity is an integral principle of Indigenous knowledge. Traditional teachings contribute to the knowledge base of First Nations peoples, and subsequently to how they frame their beliefs regarding health and wellness.

The Western biomedical model is highly individualized and disease based. The individual is solely responsible for their ‘lifestyle’, and thus people are individually “blamed” for their ill health due to their “lifestyle.” Social science also has notions of superiority and inferiority in the linear measuring of peoples. This manner of measuring places the primitive/Native at the ‘low’ end of the Western scale of development and the civilized Westerner at the ‘high’ end of

the development scale.³ Health is then understood based on a European premise that increased use of technology and industry can be correlated with an increase in a society’s wellness. However, First Nations literature suggests a different measurement of health and wellness, one that surpasses materialism and technology as a measure of community wellness. The holistic framework of Indigenous knowledge encourages a broader scope of inquiry for measuring community wellness. Cultural, emotional, spiritual and physical wellness are critical components in the social, political and economic life of a community.

There are three common sources within Indigenous knowledge inquiry. Marlene Brant Castellano (2000), a Mohawk scholar, suggests that Indigenous knowledge is grounded in the traditional, spiritual, and empirical spheres.⁴ Indigenous knowledge engages a holistic worldview that acknowledges the emotional, spiritual, physical and mental well-being of a people. The cultural diversity of Indigenous Peoples is addressed through the recognition that Indigenous knowledge is intimately bound to the language(s), landscapes and cultures from which it emerges.

...under the colonial influence the biological and intellectual heritage of non-western societies was devalued. The priorities of scientific development ...transformed the plurality of knowledge systems into a hierarchy of knowledge systems. When knowledge plurality mutated into knowledge hierarchy, the horizontal ordering of diverse but equally valid systems was converted into vertical ordering of unequal systems, and the epistemological foundations of western knowledge were imposed on non-western knowledge systems with the result that the latter were invalidated⁵.

The dominance of Western cultural constructs as the only valid form of empirical research serves to marginalize Indigenous ways of knowing.⁶ The linear and reductionist Western view of the world stands in direct contrast to the holistic, accumulative view of the world historically developed by Indigenous people. The cyclical, comprehensive and multi-dimensional Indigenous beliefs are premised on the dynamics of co-existence and inter-relationship. In this circular model, progress and development are not necessarily the singular path to achieving well-being.

The past, present, and future inform everyday actions, including political, social, economic, and spiritual spheres, which are related to the whole.⁷ To assume human behaviors and health and wellness are solely molded by the economic or political spheres is a foreign, if not absurd, concept to many Indigenous peoples. The belief that all spheres of life must be maintained and balanced is the only path to ‘true’ community wellness.

Scholars are giving new attention to Indigenous peoples’ knowledge systems and how they might be utilized and

applied to alleviate the ‘burden of ill health’ carried by both Native and non-Native communities.⁸ The basic threads of Indigenous knowledge are woven into the themes of interconnectedness, inter-relationships and holism. In addition, the historical processes of colonialism that currently impact negatively on the wellness of many First Nations communities are viewed as critical within an Indigenous knowledge view. Therefore, community wellness is significantly influenced by many factors, grounded in both the past and the present. The factors of the past are woven into the current data and related to the ideas Indigenous people hold about what constitutes legitimate measures of wellness. Community wellness should be discussed within the context of its appropriate cultural framework.

Identifying the determinants of First Nations community wellness must be accomplished within the broadest of terms, and virtually all statistical data could essentially be relevant in assessing levels of community wellness. Voyle and Simmons (1999) believe that, “...alienation and marginalization within their own countries have had deleterious consequences for [Aboriginal] cultural traditions and identity, social cohesion and self-esteem.”⁹ There is no doubt colonialism has had both direct and indirect negative consequences for Indigenous peoples’ health.”¹⁰

We need to utilize a process of logic to prioritize which indicators and measures will most accurately represent Aboriginal wellness, and these measures must be grounded within an Indigenous knowledge framework. We must draw from literature in the area of community or collective wellness that will be illustrated in this report and complemented by relevant empirical statistical data. Anthropologist Wayne Warry (2000) states, “The feeling of powerlessness and low self worth leads people with these vulnerabilities to negative behaviors. There is a clear relationship between welfare dependency and ill health.”¹¹

From an Aboriginal perspective, individual and community problems do not stem simply from poor socio-economic conditions, but are also directly attributable to low cultural esteem, or to a lack of cultural identity, which is critical to feelings of low self-worth.¹²

The colonial policies and practices that stripped First Nations people of their language and identity and encouraged assimilation must be viewed as not only oppressive and traumatizing, but also directly linked to decreases in levels of Community Wellness. The loss of self-esteem experienced in many First Nations communities occurred during an era of governmental policies of assimilation and cultural oppression, and poverty and its accompanying ill-health were both a direct and indirect consequence.

Indicators of community wellness: language

One of the best indicators of community wellness is fluency levels of Aboriginal languages, as well as the prevalence of other cultural practices. Data compiled by the First Nations Regional Longitudinal Health Survey (RHS) demonstrates that First Nations people view the recent cultural revitalization (including language use) as having a minimal impact. This view is held across generations, with little variation, as improving minimally. Three-quarters (74.7%)ⁱ of the respondents listed English as their primary language.

The data suggests there is a critical link between First Nations people’s sense of identity and their ties to the land/locale where their roots originate. The closer a people are to their Nation’s ‘roots’ and their spiritual beliefs and practices, the higher the levels of health and self-esteem found within that community. The “web of relationships” is viewed as a “key” to achieving balance among individuals and their environment. This point is elaborated on by Gregory Cajete, who coined the term “ethnoscience” in his book, *Look to the Mountain* (1998). He articulates that Indigenous knowledge is tied to the land, the spiritual laws that govern the land, and the co-existence of relationships between animal, plant and human life combined into a collective balance or web. He explores how ethnoscience reflects the uniqueness of place and is thus inherently tied to land/locality and expressed through language and cultural practice.¹³

Studies show that Aboriginal peoples who have strong ties to the land are also working/ harvesting the land First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS 1997). Table 1 demonstrates that many First Nations people feel there has little progress in renewing the relationship of First Nations peoples to the land.

Table 1. Relationship to the land

Degree of progress	% of respondents
Good progress	11.1%
No progress	45.5%

The lack of progress in relationship to “land renewal” is very similar to the respondents’ view of “renewal of spirituality.” Table 2 demonstrates there is a great need for improvement in renewal of spirituality; the two tables indicate the need to restore the relationship people have to their land and their own spirituality.

Table 2. Renewal of spirituality

Degree of progress	% of respondents
Good progress	11.2%
No progress	43.3%

ⁱ To simplify the text, confidence limits are only reported for overall adult estimates with a co-efficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

In relation to the variable of language (which is a cultural measure), there was only a slight difference between fluent First Nations language speakers and non-speakers in whether they chose to ‘hunt’ and live off the land (Table 3).ⁱⁱ This demonstrates that First Nations people can remain connected to the land and animals even when they possess no understanding of their language.

Table 3. Relationship between land and First Nations language fluency

Fluency in FN language	% involved in hunting
One or more fluently or relatively well	33.8%
No understanding at any level	32.3%

Community wellness: A cultural framework for evaluating psychological wellness

One of the major health consequences of colonization is cultural dispossession characterized by negative social impact and assimilation. “The manifestation of colonialism is through the configurations of power. The political culture of colonial rulers operated within the frames of conquest, exploitation and repression to break existing social patterns and reassemble them according to European standards.”¹⁴ Good mental health is considered an important health priority by many Aboriginal communities.¹⁵ Studies have shown that a Eurocentric bias is imbedded in “psychosomatic testing tools.” Thus, we need to utilize a culturally appropriate tool when evaluating the health of people with a unique worldview and who suffer from the psychological impact of colonialism.¹⁶ Community wellness is contingent on some form of a “sobriety movement.” It is important to examine the statistics gathered by the RHS regarding First Nations peoples’ view of substance abuse reduction within their communities. Table 4 demonstrates that respondents view substance abuse treatment as needing vast improvement to support the achievement of community wellness. 29.8% do view some progress as having been made, but the majority of respondents feel no progress has been made.

Table 4. Has there been a reduction of substance abuse in First Nations communities?

Degree of progress	% of respondents
Good progress	6.6%
Some progress	29.8%
No progress	63.6%

The susceptibility of various Native American groups to alcohol-related problems is significantly correlated with the level of social disintegration in the culture.¹⁷ Tribes with high

traditional integration and low acculturation stress experience much lower levels of alcohol related problems. The weakening of informal control mechanisms due to loss of control has not been adequately investigated.¹⁸

Thus, substance abuse is a coping mechanism for the social disintegration experienced by many First Nations communities. Health analyses must begin by more adequately measuring levels of social disintegration, as well as community strengths. Indigenous literature on the topic of wellness emphasizes ties to land, language, and culture. Svenson and Lafontaine (1999) report in their study that over 80% of respondents answered ‘yes’ to the question, “Do you think a return to traditional ways is a good idea for promoting community wellness?”¹⁹ Traditional ways are viewed as a solution to community wellness. Elders are considered the people that possess knowledge of traditional ways. The literature reviewed suggests Elders and healers were frequently framing Western “medical” concepts as disconnected from culture, families and community.

Traditional medicine

Within the literature, the terms “Elder” and “healer” are used interchangeably since traditional teachings are considered “healing for the mind.” “Elder” is another term attached to traditional healing that is discussed in the *Gathering Strength* volume of the *Report of the Royal Commission on Aboriginal Peoples* (1996), which states that Elders are “Keepers of tradition, guardians of culture, the wise people, the teachers. While most of those who are wise in traditional ways are old, not all old people are elders, and not all elders are old.”²⁰

The literature on health confirms the need for First Nations people’s control over health and wellness, which must include access to traditional medicine as a critical aspect of well-being. Recognition of the validity and importance of traditional medicine within the mainstream health care system is a key component to achieving Aboriginal health status. Table 5 demonstrates that respondents view progress in the area of traditional healing practices as not having been revitalized substantially; while a significant number feel that some progress has been made, just as many feel no progress has been made.

Table 5: Revitalization of traditional healing practices

Degree of progress	% of respondents
Good progress	13.5%
Some progress	45.7%
No progress	40.8%

There is a relationship between respondents’ level of education and their beliefs regarding the revitalization of traditional healing practices. An interesting finding is demonstrated by Table 6. Respondents who did not graduate

ⁱⁱ Comparisons between groups reported in this chapter are all significant unless “NS” —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

from high school are more likely than individuals with post secondary vocational education to state that there has been no progress to the revitalization of traditional healing practices. Conversely, those with post-secondary vocational training are more likely than those who did not graduate from high school to state that some progress has been made.

Table 6. Level of education and perceived revitalization of traditional healing practices

Degree of progress	Did not graduate high school	Post-secondary diploma
Good progress	13.9%	12.9%(NS)
Some progress	42.1%	52.4%
No progress	44.0%	34.7%

Roughly two-thirds of the respondents viewed the “renewal of First Nations ceremonial activity” to have made good (16.6 %) to some (46.8 %) progress. The statistics demonstrate that First Nations are improving community wellness through acquiring traditional medicines, ceremonies and spirituality, but that there remains a great deal of work to be done in this area.

Health of First Nations Women within the Community: The Variable of Gender

The impact of missionaries, residential schools, the *Indian Act*, and internalized colonialism upon several generations of women has had severe consequences on women’s health in particular. Colonial policies and practices affected the social, political, economic and spiritual well-being of First Nations women. The authority and esteemed positions that Aboriginal women held in their societies have been severely eroded.²¹ Women were and are responsible for nutrition and emotional and spiritual well-being, including cultural esteem, for both their family and the larger community. It is clear that colonialism interfered with their ability to govern families and maintain cultural roles. The literature suggests women need to play a critical role in nurturing their communities back to health.²²

The ill health of many Aboriginal women within the communities is often a direct result of poverty and poor cultural identity.²³ First Nations women have been both formally and informally marginalized through legal, social and economic intrusion into the “web of relationships.” The impact of colonialism on the role of Indigenous women in wellness has not been addressed specifically by any of the literature. However, the data demonstrates that women’s views of the revitalization of ceremonial activity are positive. Over half (64.0%) of female respondents believed “good to some” progress in ceremonial activity had been made, and only 36.0% felt no progress had been made. Women were less positive regarding the progress made in renewing relationship to the land; almost half (46.5%) felt there was no progress made in this area. Women did view progress as

being made in ‘cultural awareness in the schools’; over 79.3%, said that “good to some” progress had been made. The women’s view of progress in these regards mirrored their male counterparts’ views.

Role of sports and recreation in community wellness

Sport has always had an integral role in traditional Indigenous cultural practice and social cohesion. However, according to Table 7, over half of adults report that some (41.4%) or good (13.1%) progress has been made in terms of recreation, leisure, and sports activities in their community. The remaining 46% state that no progress has been made in the past 12 months.

Table 7. Revitalization of recreation, leisure and sports activities

Degree of progress	% of respondents
Good progress	13.1%
Some progress	41.4%
No progress	45.5%

Role of shelter in community wellness

Present day government policies and practices continue to have a negative health impact for First Nations people, particularly those living on reserves. Studies have consistently shown the critical role of safe shelter in achieving health status. The World Health Organization (WHO) includes access to shelter as a critical variable and health determinant globally, yet three quarters of all existing on-reserve housing fails to meet basic standards of living.²⁴ More than one third of First Nations people live in overcrowded conditions.²⁵ According to Table 8, under half (40.3%) of respondents feel no progress has been made in the improvement of housing, while 46.2% feel some improvement has been made. Table 9 demonstrates that the majority of respondents answered positively regarding improvements in water and sewage facilities (23.0% good and 46.3% some progress). Improvements in water and sewage were identified as the most improved overall; however, it should be noted that 31% reported that there had been no progress made during the past year.

Table 8: Improvement in quality of housing

Degree of progress	% of respondents
Good progress	13.5 %
Some progress	46.2 %
No progress	40.3 %

Table 9. Improvement in quality of water and sewage facilities

Degree of progress	% of respondents
Good progress	23.0 %
Some progress	46.3 %
No progress	30.7 %

Conclusions and Recommendations

The wellness of a First Nations community can only be adequately measured from within an Indigenous knowledge framework. Indigenous knowledge, a holistic framework, measures all levels of the “web of relationships” - including spiritual, emotional, physical and social balance - in order to accurately represent health and community wellness. Data gathered by the RHS shows some progress in the areas of traditional activities, healing and cultural esteem. However, only an increase in traditional medicine practices and culturally sensitive healing and knowledge paradigms will improve community wellness, including culture and self esteem, among Indigenous peoples and their communities.

Recommendation

The historical trauma experienced by most First Nations communities has led to a myriad of social, spiritual, psychological and physical health problems. The Elders continue to put forth their understanding of culture, as related to wellness, as a key solution to the improvement of community wellness. Most First Nations cultures were collectivities that functioned to achieve balance; this collective process was shattered during the colonization process. Part of the decolonization process must include the rebuilding of relationships: relationships among the people, relationships to their land, and relationships to their spiritual world. The balance of community wellness is best achieved through a two-tier process that includes the self (the individual) and the whole (the collective).

The biomedical model is most useful when placed within an Indigenous knowledge framework - when it is culturally managed within a holistic model. The need of First Nations peoples to recover their languages, heritage, and identity is related to their cultural esteem. Elders, First Nations primary and secondary schools with urban principals, teachers and administrators have a role in preventative care; they can instill a healthy respect for Indigenous heritage and cultures in educational settings. Education is viewed as a primary source of transmitting First Nations values, which include healthy choices and lifestyles and community wellness.

Data presented in the RHS indicates that it is apparent that there is not enough progress in the areas of substance abuse reduction and increasing traditional healing. Infrastructures such as water and sewage are viewed as improved, but the rebuilding of social structures and cultural work is viewed as

not having progressed enough. The work towards community wellness is directly tied to achieving cultural esteem; there is much work to be done by health services in truly harmonizing First Nations medicine and western medicine.

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The Health of First Nations Youth



Chapter 16

Household Structure, Income, and Parental Education

Abstract

Abundant connections to family, community and nation were reported by youth living in First Nations communities. A significant proportion of these youth reported living in homes with their extended families and expressed preferences for First Nations languages and, to some extent, traditional cultural events. Cultural influences came from many sources in the family and community. At the same time, the youth were less fluent in the language of their First Nation than in English or French. About half of the youth did not value participating in traditional cultural events. Despite being richly surrounded by extended family households, some youth lived in overcrowded conditions that could have negative implications for mental and physical health and overall well-being.

Introduction

This chapter focuses on the relationship of First Nations youth (ages 12 through 17) to their traditional culture and to the people from whom they have learned their First Nations cultures and languages. Family and community characteristics provide not only the context in which community-based First Nations youth live. They also act as a vehicle for these youth to potentially develop healthy connections to their families, communities and nations.

This chapter also focuses on how First Nations youth gain knowledge about and appreciate their traditional cultures. Youth are examined in the context of their families and households—which are considered to be primary influences for physical, emotional, mental and spiritual health. Of particular interest is the documentation of the types of people who have assisted youth in gaining an understanding of their traditional culture. With regard to traditional culture, the information focused on:

- The importance to First Nations youth in speaking the language of their First Nation and experiencing traditional cultural events;
- First Nations languages understood and spoken (especially those First Nations languages in daily use by youth); and,
- Family and community sources of support in developing the youth's cultural understanding.

Attention is also given to the physical surroundings of the youth (in particular, housing issues). It is no secret that, overall, First Nations housing is sub-standard compared to the Canadian norm, (i.e., over-crowding inside the house and structural insecurity). This “kind of physical” environment has an impact on First Nations youth, and, at the same time, has implications for how youth connect with family and other household members. Community characteristics can also be indicators of connectivity and also illustrate potential exposure to western influences.

With regard to family situations, information was gathered on the:

- number of people sharing their household with youth and their respective relationships to the youth; and,
- living and marital situations of the biological parents of the youth.

With regard to community characteristics, information was gathered on the:

- community size (with its potential effect on resources); and,
- relative isolation of the communities in which the youth lived (with its potential effect on limiting or increasing exposure to western cultures).

For the most part, only those differences that were both socially and statistically significantⁱ were reported.

Results and Discussion

Language and culture

Speaking a First Nations was considered important by most of the youth surveyed (82.1%)ⁱⁱ. Having traditional cultural events in one's life was considered important by about half of the youth (54.8%). Of note, however, is that nearly half the youth (45.2%) considered it not very important or not important to have cultural events in their lives. This may be the result of influences present in the mainstream of Western society. Other factors that may elicit this type of response could be connected with intergenerational trauma (e.g.: shame, low-self-esteem and sublimated anger stemming from residential school experiences of parents, grandparents or great grandparents).

Table 1. Importance of traditional culture to youth

Degree of importance	Importance of:	
	Speaking a First Nation language (n = 4670) ⁱⁱⁱ	Having traditional cultural events in one's life (n = 4698)
Very important	45.0%	49.3%
Somewhat important	37.1%	5.5%
Not very important	12.3%	34.5%
Not important	5.5%	10.7%

The actual daily use of First Nations languages by youth lags behind the sense of importance in speaking it (13/9% of the youth surveyed reported using a First Nations language daily. The majority of those who reported speaking daily in a First Nations language spoke *only* First Nations languages (12.6% of the total, compared with the 13.9% who spoke daily). Approximately three times as many youth understood a First Nations language fluently or relatively well (32.8%).

In contrast, 87.6% of respondents employ English (85.4%), French (2.4%) or American Sign Language (ASL) as their language of daily use. The use of First Nations languages can

ⁱ There were two criteria for whether differences were significant – social and statistical. Socially significant differences, although they may be based on quantitative data, are usually focused on whether the observable differences really matter in the real world. In this chapter, differences of about 10% from one group to another were usually considered socially significant, although this was not a rigid criterion. Readers may have different criteria than the authors. Statistically significant differences are mathematically derived and have to do with the accuracy of the estimates. Estimates of percentages and means that are based on samples are not exactly transferable to the populations that the samples represent. Each estimate comes with a range of values around it (a confidence interval) that describes all the possible values that the percentage or mean can take in the population. Hence, in this chapter, statistically significant differences are concluded when the 95% confidence intervals did not overlap.

ⁱⁱ To simplify the text, confidence limits are only reported for overall adolescent estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

ⁱⁱⁱ Comparisons between groups reported in this chapter are all significant unless “NS” —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

be viewed in the context of the number of languages used by each youth daily. The majority (96%) indicated the use of one language in daily life, while 3.0% used two languages and 0.2% used 3 languages.

Table 2. Daily use of First Nation languages by youth (n=4983)

	Estimate of %
Using First Nation language	13.9%
First Nation language only	12.6%
Using English, French or sign	87.6%
English	85.4%
French	2.4%
Number of daily use languages	
1	96.0%
2	3.0%
3	0.2%

The First Nations languages that were cited most often as being used on a daily basis were Cree (3.4%), Montagnais (1.8%), Attikamekw (1.3%), and Mi'kmaq (0.7%).

In addition to being asked about languages of daily use, youth were queried about their understanding and speaking levels in relation to First Nations languages.

Typically, understanding a language develops in most individuals before speaking. Questions in the RHS survey asked about the degree to which each language could be understood. Response options to this question were: fluently, relatively well, a few words, or not at all. Of all youth aged 12 through 17, 32.8% were able to understand and 27.0% could speak their First Nation language fluently or relatively well. There were no significant differences in the ages of the youth in relation to their ability to understand a First Nations language fluently or relatively well.

30 of 32 First Nations or Inuit^{iv} languages were reportedly spoken fluently or relatively well by Aboriginal Youth. The most cited First Nations languages that were understood fluently or relatively well were Cree (9.3%), Ojibway (3.3%), and Oji-Cree (3.2%).

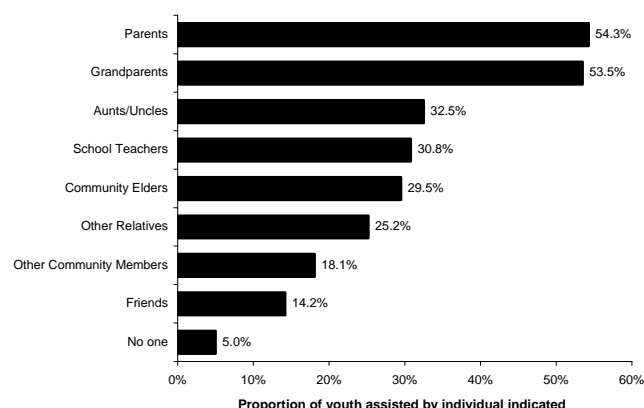
About 85.4% of First Nations youth spoke English fluently and 2.4% spoke French fluently.

Role of family and community members in understanding culture

An enquiry into the types of people who had helped a youth understand his or her culture showed that grandparents and parents were mentioned the most (approximately 54% each). Schoolteachers were mentioned as often as aunts/uncles and community Elders (approximately 30%), but less often than the parents and grandparents. Other people who were cited as

influential in a youth's understanding of his or her culture were other relatives (25.2%), other community members (18.1%) and friends (14.2%). A small minority of youth said that there was no one helping with cultural understanding (5.0%).

Figure 1. Relatives and community members involved in helping youth understand their culture (n = 4857)



The 2001 Aboriginal Peoples Survey illustrated a relationship between the number of sources of help and the ability to learn the language. “The more a child can rely on multiple sources for learning an Aboriginal language, the more likely they are to speak and understand [fluently and relatively well] an Aboriginal language”¹.

For Inuit, First Nations and Métis children in non-reserve areas, the rates of those who speak and understand an Aboriginal language ranged from 15% for those with one source of help to 80% for those with seven or more sources of help (in between, the rates were 38% for those with 3 sources of help and 54% for those with 5 sources). The number of sources of help for cultural understanding available to children living in First Nations communities (RHS) ranged from 0 to 7. A pattern appeared in the RHS that is similar to the 2001 Aboriginal Peoples’ Survey, where the number of sources of help for cultural understanding appeared to be related to rates of understanding or speaking a First Nations language.

Family and household structure

Over half (57.4%) of the youth living in First Nations communities lived in households with six or more people, mostly family. About one-third (32.4%) lived with more than two adults, and half lived with four or more children and youth. The number of household members ranged from one to 26, with a mean of 6.6. The number of adults (ages 18+) ranged from zero to twelve with a mean of 2.4. As for the number of children and youth, the range was one to 20 (including the youth in the survey), with a mean of 4.3.

^{iv} As only 10 youth spoke Inuktitut and nine of the ten spoke only a few words, further reference to Aboriginal languages in this chapter will specify First Nations languages.

Table 4. Number of sources of help for youth to understand culture (n = 4983)

Number of Sources	Total	% Understanding a First Nation Language	% Speaking a First Nation Language
0	8.8	16.7	14.3
1	33.3	27.7	23.9
2	18.4	34.5	29.2
3	14.2	39.3	33.2
4	11.4	36.1	27.3
5	8.3	38.5	25.6
6	3.7	51.5	30.3
7	1.8	54.0	74.7

Eighty-six percent of First Nations youth lived with one or more parents (biological, adoptive and/or step). Of these:

- 54.4% lived with two parents
- 31.7% lived with one parent

Of the remaining 13.9% *who did not live with their parents*:

- 7.4% lived with grandparents
- 2.0% lived with other extended family (aunts, uncles, cousins)
- 1.0% lived with foster parents
- 0.9% lived with brothers and sisters

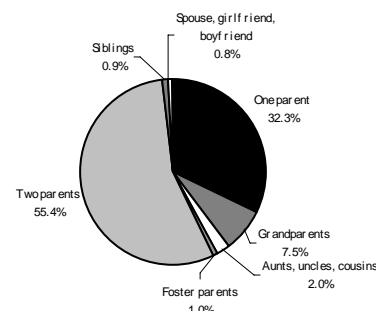
35.9% of households with one or more parents present had other adults (aged 18 and over) living in the household. Most First Nations youth lived in households with other children and youth (82.3%)^v The breakdown of households by number of youth under age 18 is as follows:

- 17.7% of the youth were the only household members under age 18
- 13.5% lived with one other household member under age 18
- 27.4% lived with two or three others under age 18
- 41.5% lived with 4 or more others under age 18.

Although 20% of births were to mothers aged 15 through 19² only 1.0% of youth aged 15 through 17 listed their own children as household members.

The youth reported that about half (53.9%) had birth parents who were living together. About thirty-nine percent had parents who were not living together (although 6.8% had at least one parent who was deceased). Research that is not Aboriginal specific suggests that parental separation can have an impact on children's behavioural or emotional development.³ However, while this may hold true for

households without abuse patterns, it may not hold true for those with abusing parents. In such instances, separation of parents may be in the best interests of the children and youth.

Figure 2. Parents or other relatives or caretakers in families of youth (n=4983)**Table 5: Relationships of birth parents of youth (n=4850)**

Relationships	Estimate of % of Youth
Living together, married	43.1%
Not living together, separated	34.2%
Living together, not married	10.8%
One parent deceased	6.7%
Both parents deceased	0.1%
Divorced	5.1%

Housing resources

The average (mean) household size was 6.6 (adults, youth and children). Households with youth had a median number of rooms of 6.3.

The number of rooms usually ranged from one to thirteen or more. Western standards of crowding would consider households with more than one person per room as crowded. Using this standard, 42.9% of First Nations' households with youth were crowded. In all households with five or fewer members, crowding occurs less than 10.3% of the time. The rate increases dramatically to 34.5% for households of six, and climbs steeply to 94.2% for households of nine or more. The pattern of crowding is similar in relation to the number of children versus youth in the household.

Community characteristics

Community size and relative isolation appear to be related to family and housing situations, and to the degree of value assigned to First Nations languages and cultures.

Youth in small communities (<300 residents) reported lower levels of crowding than those in large communities (>1,500 residents). Large communities were least like the small communities. While mid-size communities (300 to 1499 residents) tended to be like larger ones, there were many

^v The data on whether the other adults in the household were extended family or whether children in the household were siblings or otherwise related were not complete enough to analyze

ways in which they fell in the middle on measures taken in the RHS survey. Youth in small communities are less likely than those in mid-sized communities to attribute a high degree of importance to learning to speak First Nations languages. Youth in large communities are more likely to be able to understand and speak a First Nations language than youth in communities of less than 1,500 residents; however, in the smallest communities there was generally more involvement of other relatives with youth in the process of acquiring cultural familiarity.

Table 6. Percentage of Youth living in homes with more than one person per room by household size and number of children/youth (n=4800)

Household composition	Based on Number of HH Members	Based on Number of Children and Youth in HH
All hh with youth	42.9	42.9
1 youth	n.a.	5.7
2 persons/children + youth	–	6.8
3	–	17.6
4	–	37.6
5	10.3	60.0
6	34.5	85.5
7	52.7	93.1
8	76.2	95.0
9+	94.2	98.6

– Data suppressed due to insufficient sample size.

Table 7. Youth language, culture and family variations (%) by community size (n =4600)

	Community size		
	Small	Medium	Large
Speaking First Nations languages important			
Very	31.6	47.6	43.8 (NS)
Somewhat	49.3	34.8	38.2 (NS)
Knowledge of First Nations language			
Understanding First Nations languages	21.4	30.4	39.1
Speaking First Nations languages	14.7	23.7	34.6
Who influences culture of child			
Other relatives	33.8	25.7	22.4
Community Elders	33.9	31.9(NS)	24.7 (NS)
Community members	22.1	18.5(NS)	16.5 (NS)
Other			
Only child in household	25.6	16.7(NS)	17.9 (NS)
Crowding	30.9	40.9(NS)	48.8

Isolated communities were defined as those having scheduled flights and good telephone service, but no road access. Semi-isolated communities were defined as those having road access, but being >90 km from a physician. Remote isolated communities were defined as those having no scheduled flights available. Youth in isolated, semi-isolated, and remote isolated communities were the most alike in that they had the

highest rates of understanding and speaking First Nation languages compared to non-isolated communities (defined as those with road access and being less than 90 km from a physician). Youth in non-isolated communities were less likely to consider speaking a First Nations language as very important than youth in remote or semi-isolated communities. Youth in remote, isolated communities shared a higher rate of fluency in English with non-isolated communities, compared to isolated and semi-isolated communities. Youth from non-isolated communities are less likely to report crowded conditions than youth in isolated and semi-isolated communities.

Table 8. Youth language and housing variations (%) by degree of isolation of community (n=4600)

	Isolation status			
	Non-isolated	Remote-isolated	Isolated	Semi-isolated
Very	39.7	62.6	55.5(NS)	58.1
Somewhat	40.2	26.3(NS)	31.9(NS)	26.6
Understanding	27.6	48.6	42.0	44.2
Speaking	21.6	39.4	37.2	39.0
Speaks English fluently	89.0	87.3(NS)	70.5	72.4
Crowding	35.9 =	40.2 (NS)	60.5	61.3

Conclusions and Recommendations

Conclusions

First Nations youth were well surrounded by family. Youth living in First Nations communities were living in families, both nuclear and extended, in households with many members. Most of these youth lived with their parents and most lived with siblings or other related children. Many lived with other relatives as well. Parents and extended family were among the most mentioned sources of cultural knowledge. Other community members were also involved in helping with cultural socialization.

While the standards for crowding used in this report might be labeled as based on a Western perspective, the problem of crowding is still real. Housing in many First Nations communities is inadequate by many standards. For many First Nations families, the preference may be for living with extended kin, and where there is a housing shortage this may be a necessity. In other instances, the typical houses are too small and the resources for enlarging the houses do not exist. Whatever the reasons, crowding can be severe, and this undoubtedly has an effect on health.

Youth living in First Nations communities reported on aspects of their lives that indicate a potential for strong relationships to their traditional culture. They also reported connections to their families and culture. For the most part

they valued the ability to speak a First Nations language, and to a lesser extent they valued involvement in traditional cultural events. It is important to note, however, that almost half of the youth did not consider involvement in traditional cultural events to be important or very important.

The ability to speak First Nations languages fluently or relatively well lagged behind attitudes about language. Speaking a First Nations language, valued as important by over 80% of youth, is in stark contrast with findings that only 27% of youth have the ability to speak one or more of 30 First Nations languages. An even smaller percentage of youth surveyed used a First Nation language on a daily basis (13.9%), and almost all of these youth speak only that language in their daily life.

At the same time, 87.6% of the youth surveyed speak English or French in daily life. This could be taken to indicate the strong influence mainstream culture has on most youth living in First Nations communities. English was more fluently spoken in both remote isolated and non-isolated communities.

Recommendations

While indications are clear that First Nations youth have potential for staying involved in their culture, it is likely that they will continue to be involved in both western and traditional cultures as long as they live in First Nations communities. This bi-cultural reality is demonstrated by the finding that only a small minority of the youth do not speak English or French. Given the pervasiveness of Western influences and the diversity of First Nations, organized and concerted efforts will be needed to ensure healthy socialization into two (or even multiple) cultures. This effort will be necessary to maintain spiritual ties to family, community and nation for generations to come.

Housing is urgently needed to accommodate the preferences of some residents in First Nations communities for living with extended family. Where large, crowded households are the result of an inadequate supply of houses, more housing infrastructure is needed.

Notes to Chapter 16

1. Statistics Canada, "Aboriginal children and Aboriginal languages," *A Portrait of Aboriginal Children living in Non-reserve Areas: Results from the 2001 Aboriginal Peoples Survey* (Ottawa, Ont.: Statistics Canada, 2004).
2. Government of Canada, "Young First Nations Children in Canada," *The Well-Being of Canada's Young Children: Government of Canada Report 2003* (Ottawa, Ont.: Human Resources Development Canada and Health Canada, 2003).
3. Government of Canada, "The Family Environment and Its Impact on Child Well-Being," *The Well-Being of Canada's Young Children: Government of Canada Report 2003*.

Chapter 17

School Education

Abstract

Fair/poor overall health was a good predictor of non-attendance at school, of learning problems, and of not liking school. Although there were no significant relationships between learning problems and the specific health conditions examined, when the health conditions were grouped, there were significant increases in the reporting of learning problems.

The induced peer/societal precursors to reduced school performance, especially as related to non-attendance and repeat grades, are related to increased alcohol consumption, smoking and sexual activity among older youth. Diet was found to be an important indicator of school performance among First Nations youth. Always eating a nutritious, balanced diet is associated with lower rates of grade repetition, less learning problems, and higher rates of liking school very much (as compared to never). Participating in sports and frequency of physical activity are also positively associated with attending school. Relationships between residential schools, traditional language and culture, and learning problems at school were also found to be present in the data.

Introduction

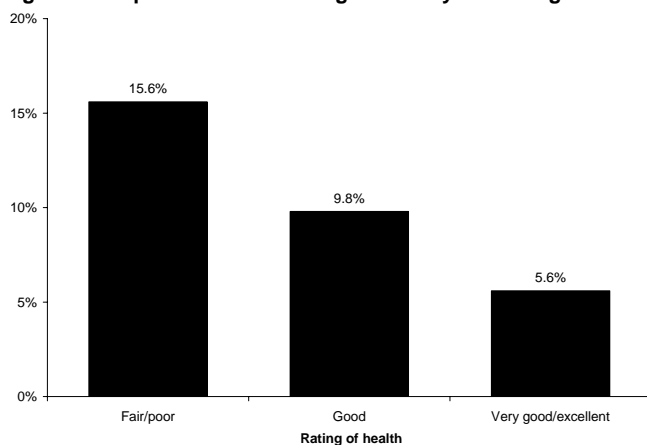
School performance can be measured most accurately by examining the attendance and non-attendance of students and the percentages of students who report repeating grades.¹⁻³ Other useful indicators of school performance include the reported liking/disliking of school and self-reported learning problems.^{2,4} While these factors in and of themselves are not definitive in regards to future schooling aspirations of First Nations youth, they are significant in predicting school performance.

Lifestyle and health factors related to school attendance, attitudes toward school, and behaviour while in school will be examined in this chapter. Factors to be considered include diet, alcohol consumption, smoking, sexual activity, health conditions, activity limitations, and participation in physical activity and sport, art and music, and cultural activities such as drumming and dancing. The detailed examination of these factors will lead to recommendations regarding the health of First Nations youth in relation to factors that may be associated with school performance.

Results and Discussion

Overall, the majority of the youth surveyed (57.2%)ⁱ considered themselves to be in very good or excellent health. 32.9% rated their health as good and only 9.9% reported their health as fair or poor. Self-rated health (fair/poor vs. very good/excellent) was a good predictor of non-attendance at school (15.6% vs. 5.6%—see Figure 1), of learning problems at school (62.5% vs. 37.3%—see Figure 2), and of not liking school (22.3% vs. 7.8%—see Figure 3).ⁱⁱ

Figure 1. Proportion not attending school by self rating of health



ⁱ To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

ⁱⁱ Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Figure 2. Proportion experiencing learning problems at school by self rating of health

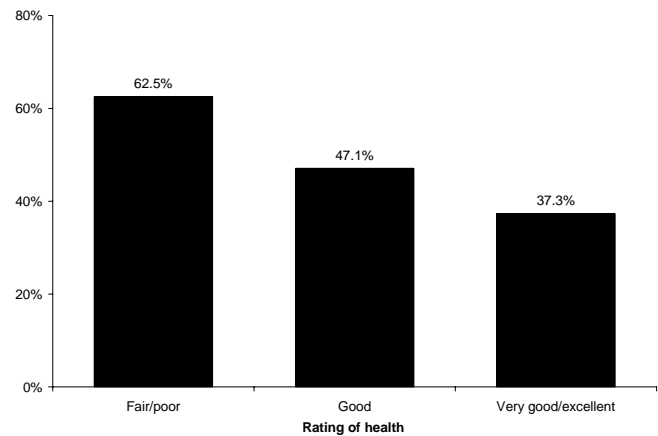
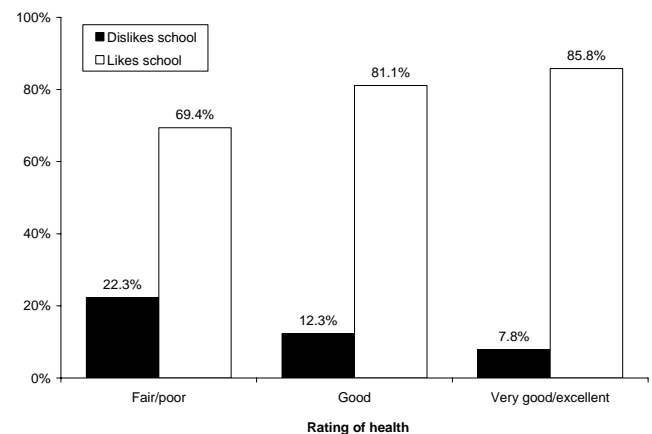


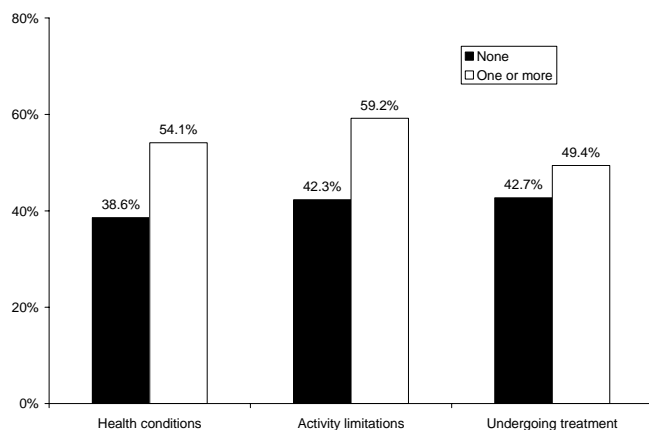
Figure 3. Proportion who like and dislike somewhat or very much school by self rating of health



Physical diseases were examined as potential predictors of poorer school performance. Asthma and allergies were examined in particular, because of their prevalence (13.6% and 15.1% respectively). However, there were no significant differences between those with and without asthma relating to school attendance, grade repetition, liking school, or experiencing learning problems at school.

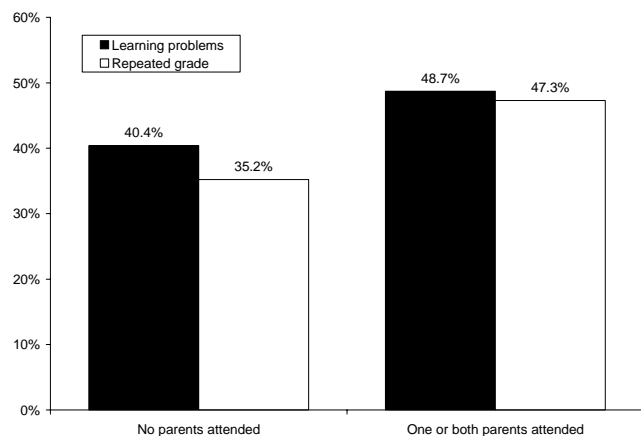
Although there were no significant elevations in learning difficulties associated with the specific health conditions such as asthma or allergies, First Nations youth reported significantly more learning problems overall when health conditions were grouped. Having one or more physical health conditions was related to a marked increase in learning problems at school (38.6% for those with none vs. 54.1% for those with one or more—see Figure 4). However, of those with one or more reported medical conditions, there were no significant differences in learning problems at school between those receiving treatment for illnesses and those who were not. In cases where the medical condition induced some limitation in activity levels, the rate of learning problems at school was higher: 59.2% for those with a limitation vs. 42.3% with no limitation.

Figure 4. Proportion with and without learning problems at school, by one or more medical conditions, activity limitations from a medical condition, and undergoing treatment for a medical condition



With regard to youth liking or attending school, no differences were apparent when considering whether or not their parents had attended residential school. Youth were, however, more likely to report having learning problems at school if one or both of their parents had attended residential school (48.7% of youth whose parents attended residential school versus 40.4% whose parents did not attend—see Figure 5). Similarly, 47.3% of youth with a parent who attended residential school reported having had to repeat a grade, compared to 35.2% of youth with no parental experience of residential school. In contrast, the attendance of one or more grandparents at a residential was unrelated to school attendance, learning problems at school, feelings about school, or having had to repeat a grade. Thus, one may argue that there may be a generational decrease in the impact of attending residential schools.

Figure 5. Proportion with learning problems at school and repeated a grade by past parental residential school attendance



At least in part, diet may be an important indicator of school performance among First Nations youth. Of the youth who considered their health to be very good or excellent, 24.7% reported that they always or almost always ate a nutritious

and balanced diet, while only 10.6% of youth who rated their health as fair or poor claimed that they ate nutritiously (see Figure 6). Moreover, among the respondents who considered their health to be fair or poor, 40.3% claimed to rarely or never eat a nutritious, balanced diet, compared to only 10.7% of those in good or very good health. Diet is directly associated with indicators of school performance among First Nations youth; always eating a nutritious, balanced diet is associated with lower rates of grade repetition, lower rates of reported learning problems and higher rates of liking school very much (see Figure 7). Moreover, diet is also associated with school attendance. Always or almost always eating a nutritious and balanced diet is associated with higher rates of attending school.

Figure 6. Proportion consuming a nutritious diet by self rating of health

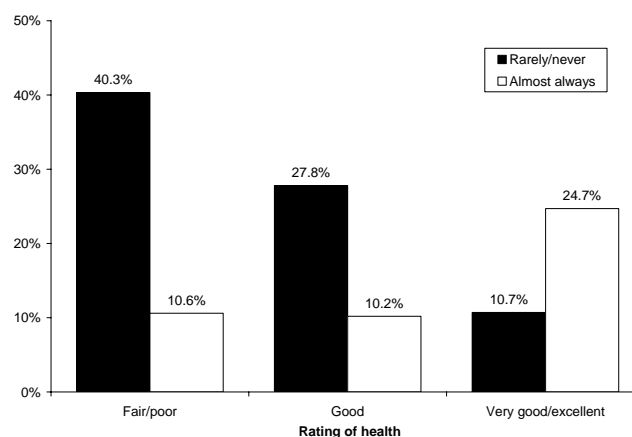
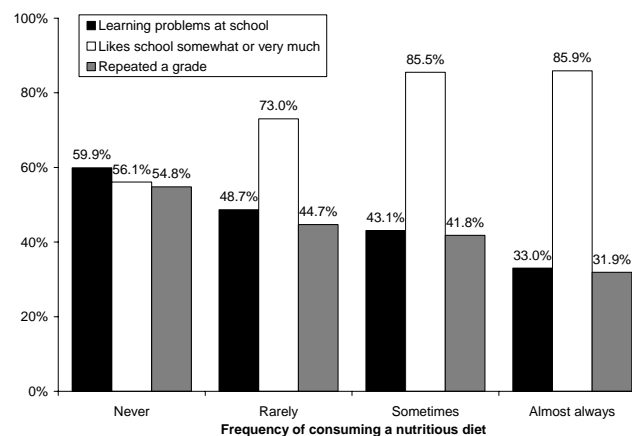


Figure 7. Proportion with a learning problem at school, liking school somewhat or very much, and having had repeated a grade by consumption of a nutritious diet



Participation in passive indoor activities, such as television viewing, playing video games and using the computer, was found to be unrelated to school attendance. There were, however, relationships between school attendance and participating in sports (Figure 8), art and music groups (Figure 9), and other traditional events such as singing,

drumming, and dancing groups (Figure 10). In the case of sports, those who participated more than once per week were more likely to attend school than those who never participated. Youth who participate in physical activities every day (87.4%) are more likely than those who never do (73.2%) to like school somewhat or very much. Those who never participated in art or music groups were less likely to be attending school than those who participated occasionally (less than once per week). Similarly, with traditional singing, drumming, and dancing, the only significant difference observed was between those who never participated and those who participated only occasionally (less than once per week). Lastly, holding down a job such as babysitting or tutoring was not found to be related to school attendance. Differences between daily smokers and non-smokers also appear among those who participate in sports teams often (4+ times a week) and those who never do, in terms of non-attendance at school.

Figure 8. Proportion attending school by participation in sports teams or lessons outside of school

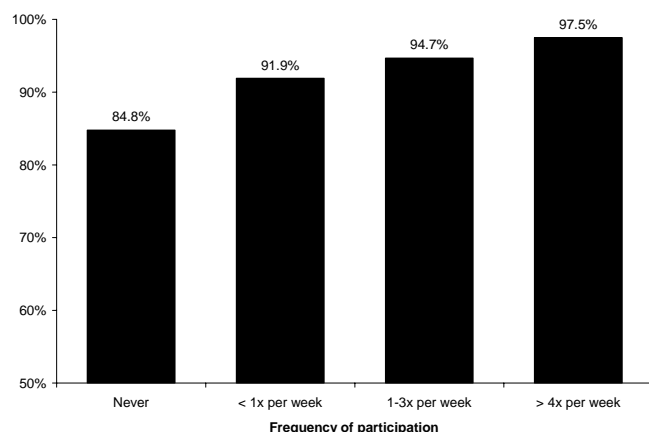


Figure 9. Proportion attending school by participation in art or music activities outside of school

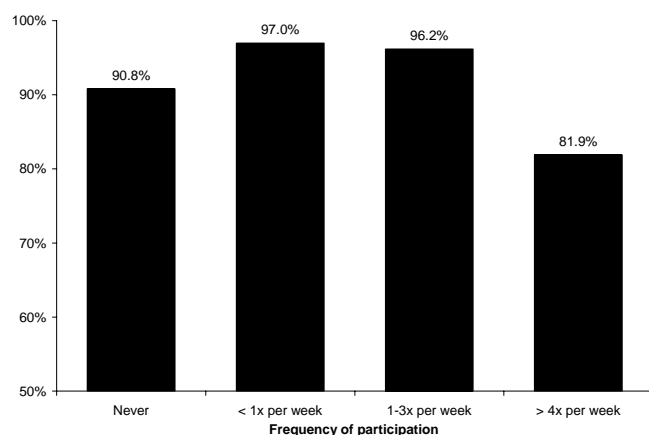
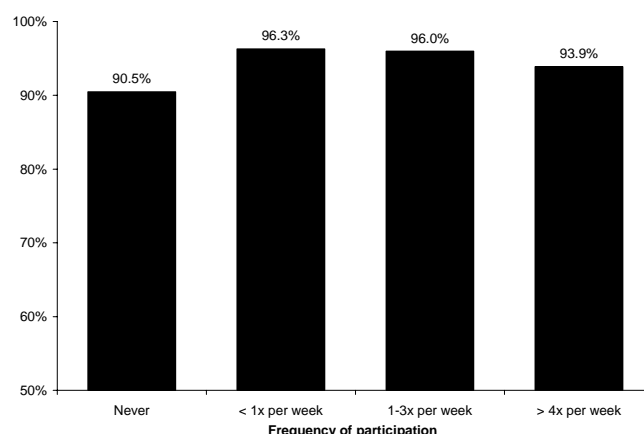
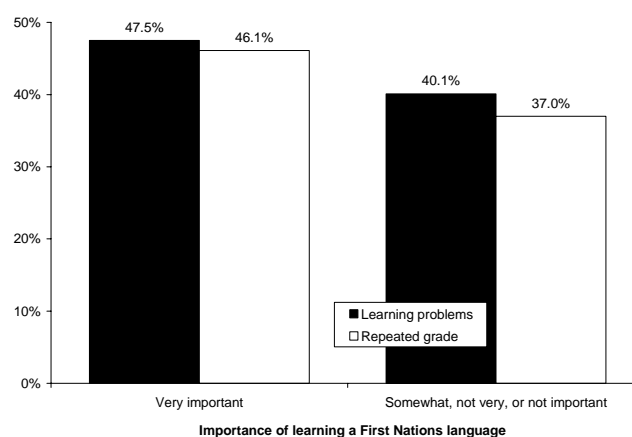


Figure 10. Proportion attending school by participation in traditional singing, drumming, or dancing



As seen in Figure 11, youth who felt that it was very important to speak a First Nations language were more likely than those who did not to have problems learning at school (47.5% versus 40.1%), and to have had repeated a grade (46.1% versus 37.0%). There were, however, no significant differences in how the youth felt about going to school.

Figure 11. Proportion reporting a learning problem and having had repeated a grade at school by self-rated importance of learning a First Nations language

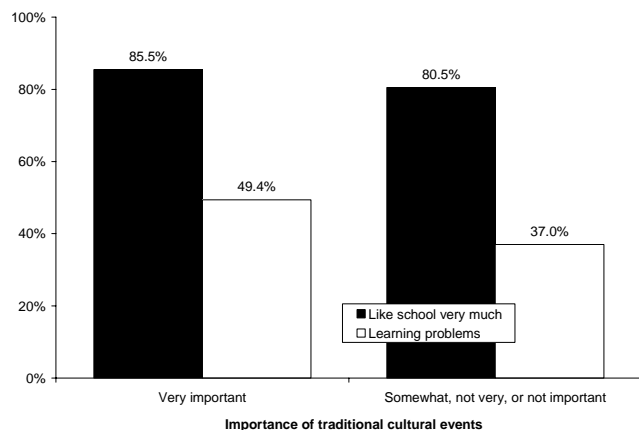


The importance of traditional cultural events (Figure 12) in the lives of First Nations youth is related to experiencing problems at school and feelings about going to school. Those who felt that traditional cultural events were very important were more likely than those who did not to have problems at school (49.4% versus 37.0%), but were slightly more likely to report liking school somewhat or very much (85.5% versus 80.5%). No significant differences were seen with respect to having to repeat grades.

The attachment of high importance to speaking First Nations languages may be a reflection of isolation or remoteness, where the language might be spoken in the home, in contrast with English or French as a language of instruction in school – which could explain the greater likelihood of problems in

school for those expressing a higher value on the language. This divergent result suggests that further study needs to be undertaken to determine the relative importance of maintaining First Nations languages and traditional culture in school when these are viewed as important by those who report they like school.

Figure 12. Proportion who like or dislike school and reporting a learning problem at school by self-rated importance of traditional cultural events



The educational aspirations of youth were examined against learning problems (Figure 13) and repeat grades (Figure 14). Youth who experienced learning problems at school are more likely to not want to pursue any education beyond high school (35.3% versus 20.5%). Similarly, those who had previously repeated a grade were also more likely to not want to go beyond high school (33.3% who repeated a grade versus 22.0% who did not), and were less likely to want to attain an undergraduate degree (29.9% versus 37.9% respectively) or a doctorate (2.6% versus 9.5% respectively). Having higher educational aspirations for those without learning problems and those not having repeated a grade is apparent.

Figure 13. Highest level of education youth aspire to by presence of a learning problem at school

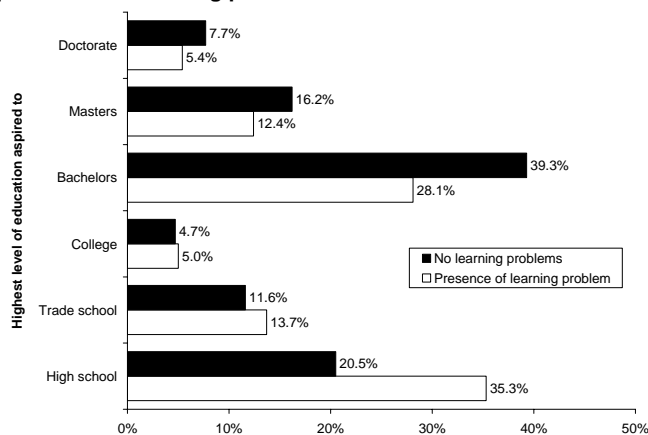
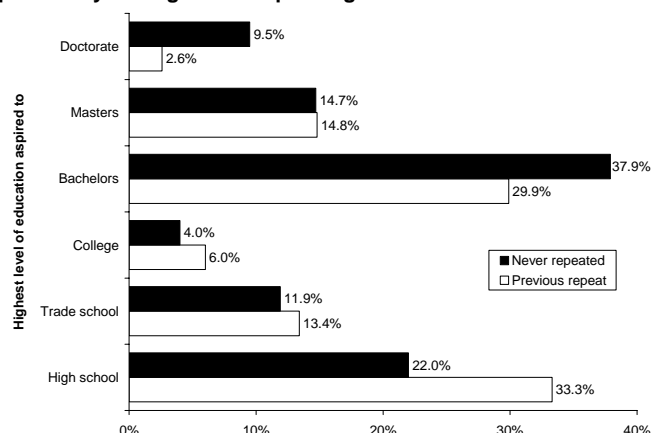


Figure 14. Highest level of education youth aspire to by previously having had to repeat a grade



There are few relationships between academic attendance, performance or attitudes, and community factors including community size, the transfer of health administration, and living conditions such as crowding and remoteness. Residents of small communities (< 300 residents) are less likely than those in larger communities to report repeating a grade. 48.2% of youth who experience crowded conditions are more likely than those who have not (35.8%) to report having repeated a grade. Furthermore, youth who live in communities that are not part of a health transfer agreement are more likely to report that they do not currently attend school compared to those from communities with health transfer status.

Three key “user-choice” variables—alcohol consumption, smoking, and sexual activity—were examined. User-choice variables, which may be characterized as peer-influenced or societal-influenced variables, showed strong correlations to school attendance and poor school performance (repeated grades). The variables were examined by looking at three age groups. Those aged 12 and 13 were mainly in grades 5–8; those aged 14 and 15 were mainly in grades 7–10; and those aged 16 and 17 were mainly in grades 9–12.

Smoking

The graphs examining school attendance and having to repeat a grade in relationship to smoking (by age groups) are shown in Figure 15 and 16 respectively. As might be expected, since the compulsory school age in all school jurisdictions includes 12 and 13 year olds, almost all youth reported being in school. Moreover, the level of attendance was unrelated to their smoking status, alcohol consumption, and whether they were sexually active or not. This is in stark contrast to the older age groups (14–15 and 16–17), where school attendance was significantly lower among smokers than both non-smokers and occasional smokers. A greater discrepancy was found in the oldest age group (16–17) where 26.3% of smokers were not attending school, compared to 9.0% of non-smokers and 10.9% of occasional smokers.

Looking at non-smokers versus daily smokers, having to repeat a grade was found to be related to smoking amongst all age groups (Figure 16). There are also significant differences between non-smokers and both daily and occasional smokers in the 16–17 age group. Once again, the largest difference occurs in the 16–17 age group, where 38.2% of non-smokers were required to repeat a grade compared to 61.0% of daily smokers and 67.1% of occasional smokers.

Figure 15. Proportion attending school by current smoking status and age group

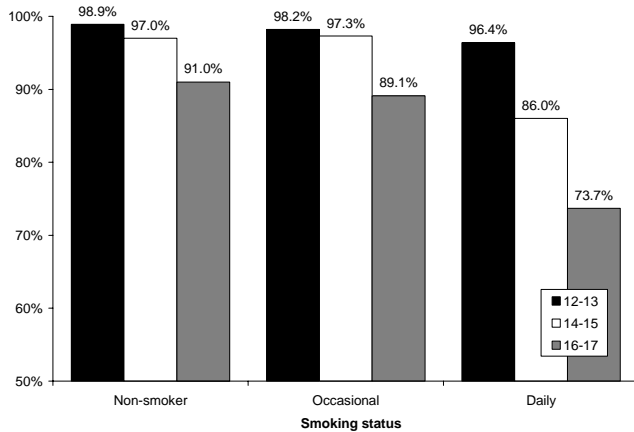
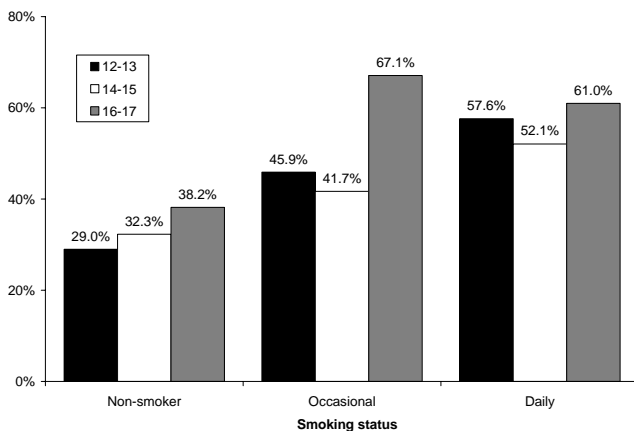


Figure 16. Proportion having had to repeat a grade by participation smoking status and age group



The increase in this variable (smoking), like diet, appears to be a stand-alone factor that has a marked effect on decreasing school attendance and increasing poor school performance (grade repetition).

Alcohol Assumption

School attendance and school performance (measured by grade repetition) were also examined in relationship to alcohol consumption. In both instances and amongst all age groups, there were no significant differences between non-drinkers and those who have had at least one alcoholic drink in the past year. However, older alcohol consumers (16–17)

were less likely to be attending school than their counterparts in the 12–13 age group (81.7% versus 97.7% attendance, respectively). Similarly, 16–17 year olds who also drank were more likely to have repeated a grade (55.0%) than both 12–13 and 14–15 (year olds (40.0% and 39/8% respectively).

Figure 17. Proportion attending school by alcohol consumption (once in the past year) and age group

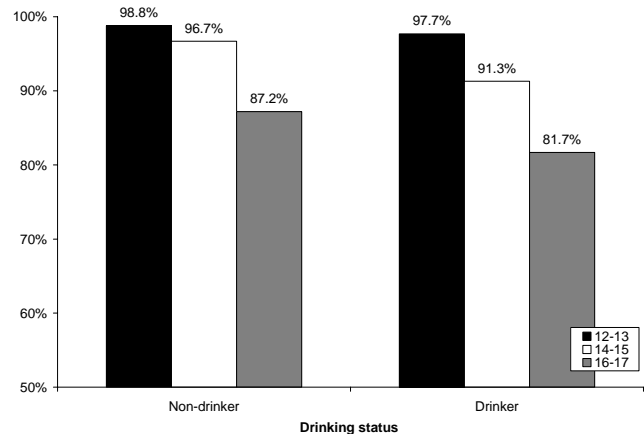
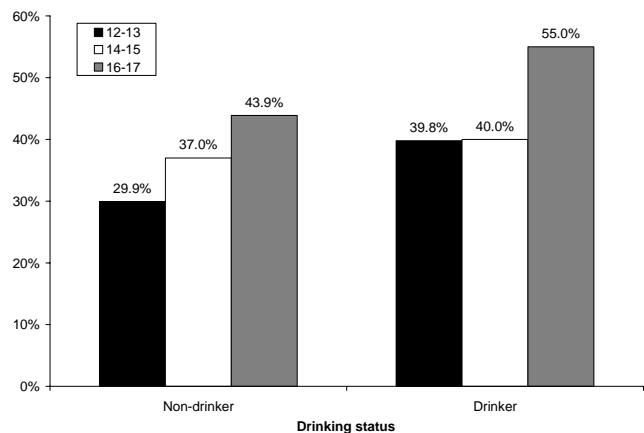


Figure 18. Proportion having had to repeat a grade by alcohol consumption (once in the past year) and age group



Sexual Activity

A significant relationship was observed between school attendance and being sexually active among the 14–15 and 16–17 age groups (Figure 19). Sexually active 14–15 year olds were less likely to be attending school (89.2% were attending) than those who were not sexually active (97.0% were attending). A similar difference is observed in the 16–17 age group: 79.9% attendance for those who were sexually active versus 89.4% for those who were not.

A similar relationship exists between being sexually active and repeating a grade among 14–15 and 16–17 year olds. Sexually active 14–15 year olds are more likely to report repeating a grade (53.6%) than those who are not sexually active (31.5%). The same relationship exists for 16–17 year olds, where 59.7% of those who are sexually active are more

likely to report repeating a grade compared to 41.1% of those who are not sexually active.

Figure 19. Proportion attending school by sexual activity status and age group

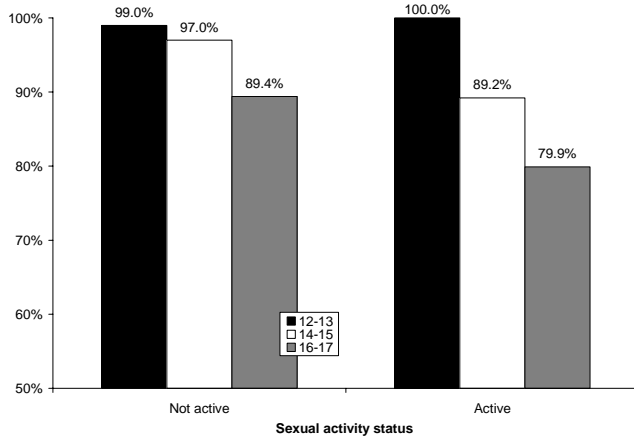
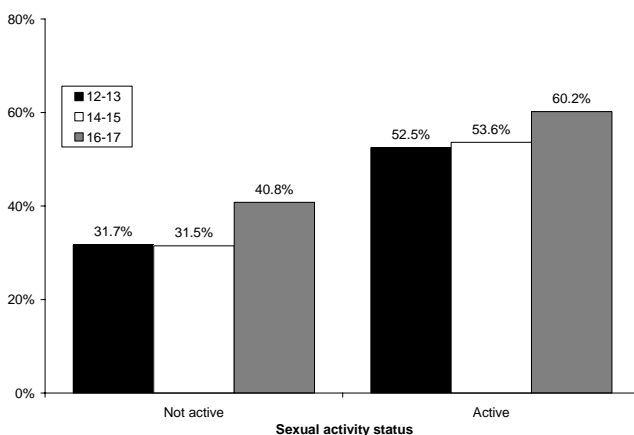


Figure 20. Proportion having had to repeat a grade by sexual activity status and age group



Conclusions and Recommendations

The health of First Nations youth in Canada is vital to our continuity as Aboriginal peoples. Education is a key factor in strengthening health and culture and building our future.⁵ This survey has delineated a number of barriers which stand in the way of healthy First Nations youth and their attainment of educational success.

Two of the peer-influenced user-choice variables, increased alcohol consumption and increased sexual activity,⁶ are related to lower school attendance and higher rates of grade repetition. There is potentially much to program and develop in the provision of educational programs and health services and promotion. These findings on school board education and health point to the need for an increased focus on nutrition and diet⁷ in school-aged children in First Nations communities.

Further, health education programs that relate to the effects of increased alcohol consumption and sexual activity on

school performance need to be designed and implemented at an early age and grade. The deleterious effects of increased rates of smoking on attendance and performance at school (measured by grade repetition) should bring strength and credence to smoking cessation programs. Encouragement of, and access to, active treatment for health conditions may produce a positive result relating to school performance.

Finally, promoting increased participation in certain types of activities such as sports and traditional cultural programs⁸ may have positive benefits resulting in increased attendance at school and reduced repeated grades among First Nations youth.

Notes to Chapter 17

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Chapter 18

Physical Activity, Body Mass Index, and Nutrition

Abstract

In addition to the health benefits derived from life-long participation in physical activity, immediate benefits of physical activity for youth include increased self-esteem, perceived physical competences, and ability to cope with mental stress. This chapter examines (for First Nations youth) factors of physical activity and diet and how they relate to body mass.

Popular physical activities among First Nations youth are walking, running, cycling, competitive sports and swimming. Just under half of the youth accumulate at least 30 minutes of moderate-to-vigorous activity most days of the week. Although three in five First Nations youth sometimes eat a nutritious and balanced diet, only about one in five always or almost always do — fewer than reported among adults. Similarly, consumption of traditional protein-based meat is lower among youth than adults. The majority of youth are normal/underweight, but 28% of First Nations adolescents are considered overweight and 14% are classified as obese. Being active and having a healthy diet are two factors associated with higher ratings of their life being in balance, lower rates of suicide ideation and fewer difficulties learning at school.

The results suggest that physical activity and diet may contribute to the resilience of First Nations youth. Creating supportive social norms and opportunities (e.g. positive community/sporting events such as the North American Indigenous Games) are approaches that need to be developed and vetted with community elders, school officials and recreational service providers, to determine which are culturally appropriate and feasible.

Introduction

A physically active lifestyle has been linked to several short-term and long-term benefits. Short-term benefits for children and youth include: increased self-esteem and perceived physical competence, ability to cope with mental stress¹ and greater chances of pursuing a healthier lifestyle (not smoking or consuming alcohol or drugs).² Long-term benefits of an active lifestyle among adults include decreased risks of several chronic and physical conditions, including coronary heart disease, hypertension, obesity, type II diabetes, osteoporosis, certain site-specific cancers (such as colon cancer), and functional limitation with aging.³

The proportion of Canadian youth that meet international guidelines for appropriate levels of physical activity is low.⁴ The prevalence of overweight and obese young people in Canada has increased substantially over the last 20 years.⁵ This increase is not unique to Canada. The World Health Organization (WHO) states that rates of childhood obesity are already considered an “epidemic” in some countries and the prevalence of overweight youth in the United States has tripled in the last 20 or so years.⁶ This is of concern because being overweight or obese are factors associated with non-communicable or chronic diseases such as type II diabetes and hypertension (which are now being observed among obese youth and even pre-pubescent children).⁷

Obesity is related to either metabolic or genetic factors,⁸ environmental factors (including improved technology and suburban environments favoring motorized vehicles⁹), and behavioural factors (including high fat carbohydrate intake).¹⁰ Canadian trends show that total energy intake has increased via carbohydrate intake, particularly soft drink consumption,¹¹ during a period when the physical demands of everyday life are generally decreasing. This may be particularly true in Aboriginal communities, where traditional physical activities have decreased.¹²

Obesity and chronic conditions such as type II diabetes are more prevalent among Canadians of First Nations descent than in the general Canadian population.^{13,14,15} First Nations children and youth are at particularly high risk of becoming obese.^{16,17,18} This chapter will examine physical activity levels and aspects of diet among First Nations youth populations in relationship to body mass.

General approach

The chapter first describes the physical activity, diet and body mass index among First Nations youth. Guidelines for recommended frequency, intensity, and duration of physical activity and exercise have evolved over time. Commonly accepted guidelines^{19,20} require the inclusion of frequency, intensity and duration in the calculation and generally recommend a minimum of 30 minutes of moderate or vigorous intensity on most days of the week. Similarly, in the First Nations Regional Longitudinal Health Survey, a

criterion for sufficient activity was defined as reporting at least 30 minutes of moderate/vigorous activity (defined in the survey as physical activity “...that results in an increase in your heart rate and breathing”) for 5 or more days of the week.

The definition for body mass index (BMI) cut-points was selected using a system of classification that is indirectly tied to health outcomes. These cut-points were established by single-year age group to predict the individual’s adult body mass index for being overweight — known to be associated with elevated health risks.²¹ In the model adopted, no cut-off points were provided for an underweight classification; therefore, normal and underweight classifications are combined for this analysis. Classifications of normal (or under) weight, overweight, and obese were determined by first calculating body mass index and then using age-appropriate cut-off points for the BMI measurements. These were then compared to international standards for overweight and obese children and youth.²²

Next, the relationship of lifestyle and body mass index to the total person and their environment is examined using the cultural framework model outlined at the beginning of this technical report. Physical activity, diet and body mass will be examined in context with factors that make up a person’s spiritual, emotional, mental, and physical well-being. In addition, cultural values, beliefs, identity, and practices - as well as community, relationship to the physical environment and connectedness to family members - will be related to body mass index, physical activity and nutrition.

Results

Physical and sedentary activity

Walking is the most frequently reported physical activity in which First Nations adolescents participated over the year prior the survey (87.9%).ⁱ This is followed by running (70.3%), bicycling (64.5%), competitive sports (63.1%), swimming (62.4%), ice skating (40.5%), weights and exercise equipment (39.1%), forms of dancing (33.5%), fishing (33.2%), and berry picking or food gathering (32.2%). Activities reported by roughly one-quarter of the youth include hiking (25.7%), hunting or trapping (25.0%), and rollerblading (23.4%). Other activities are less prevalent: bowling (19.7%), canoeing (17.2%), skiing (16.7%), golfing (16.7%), skateboarding (14%), aerobics or fitness classes (11.4%), snowshoeing (7.9%), and martial arts (5.8%). Regardless of age, walking is the most frequently reported physical activity.

Gender differences are apparent for certain physical activities. Girls are more likely than boys to participate in walking, dancing, and berry picking or other types of food

ⁱ To simplify the text, confidence limits are only reported for overall adolescent estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

gathering.ⁱⁱ Boys, however, are more likely than girls to participate in running, bicycling, skating, rollerblading, skateboarding, snowshoeing, golf, weight training, hiking, or traditional activities such as hunting, trapping, or fishing. Table 1 summarizes the gender differences in reported physical activities.

Table 1. Prevalence ratings of physical activities by gender (n=4,950)

Rank	Activity	Boys	Girls	Total
1	Walking	85.1%	90.8%	87.9%
2	Running	77.4	62.7	70.3
3	Bicycle riding	70.4	58.2	64.5
4	Competitive sports	65.6	60.4	63.1 (NS)
5	Swimming	60.6	64.3	62.4 (NS)
6	Exercise equipment	51.9	25.4	39.1
7	Skating	48.1	32.3	40.5
8	Fishing	44.1	21.4	33.2
9	Hunting, trapping	39.0	9.8	25.0
10	Hiking	31.3	19.6	25.7
11	Berry picking, food gathering	27.6	37.1	32.2
12	Dancing	20.0	48.0	33.5
13	Rollerblading	27.1	19.5	23.4
14	Bowling	19.3	20.2	19.7 (NS)
15	Canoeing	19.1	15.1	17.2 (NS)
16	Skiing	17.4	16.0	16.7 (NS)
17	Golf	23.8	9.0	16.7
18	Skateboarding	20.4	7.1	14.0
19	Aerobics, fitness classes	10.7	12.1	11.4 (NS)
20	Snowshoeing	9.9	5.7	7.9
21	Martial arts	5.9	5.7	5.8

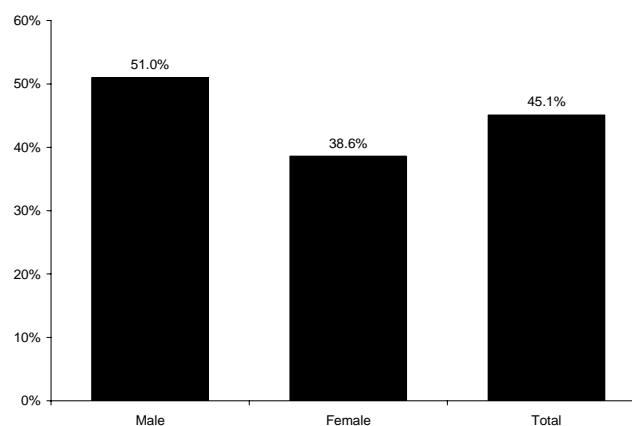
Adolescents were also asked how often they participated in lessons after school involving physical activity or sports teams. Over one-quarter (29.4%) of youth indicate that they never do, 17.0% indicated less than once a week, 34.0% 1 to 3 times a week, and 19.6% 4 or more times a week. Girls are more likely than boys to never be on sport teams or participate in lessons (35.3% for girls versus 23.9% for boys), whereas boys are more likely to do so 4 or more times a week (25.2% for boys versus 13.4% for girls). Older youth (aged 15-17) are more likely than their younger counterparts (aged 12-14) to state that they *never* partake in sports or lessons outside of school (24.5% for 12-14 year-olds, versus 33.2% for 15-17 year-olds).

One-third of adolescents participate in physical activity every day (32.5%), 21.8% do so 4-6 times a week, 25.1%

participate 2-3 times a week, 10.2% once a week, 6.7% less than once a week, and 3.7% never participate. Teenage boys are more likely than girls to participate everyday (36.8% for boys compared to 27.9% for girls). Girls are more likely than boys to participate once a week or less. There are no differences in frequency of participation by age.

Using a measurement criteria of 30 minutes of moderate-to-vigorous activity most days of the week, 45.1% of First Nations youth engage in sufficient physical activity. Boys are more likely than girls to report activity rates that meet these guidelines (51.0% for boys versus 38.6% for girls), although the gender differences appear only among 15-17 year old adolescents (52.7% for boys versus 33.0% for girls). Nevertheless, the proportion of youth that are sufficiently active overall does not vary by the age of the adolescent.

Figure 1. Proportion of youth reporting sufficient activity by gender



Just over half of First Nations adolescents watch 3 or more hours of television daily (50.7%), an additional 41.2% watch between 1 to 2 hours, and the remaining 8.0% watch less than one hour or no television at all. Almost one in five teenagers report playing video games or using a computer for more than 3 hours daily (18.8% for video games and 15.8% for computer), roughly one-third of youth cite between 1 to 2 hours for the same activities (31.4% for video games and 34.6% for computer use), and half play for less than an hour or not at all (49.8% for video games and 49.6% for computer use). Playing video games is two to three times more prevalent among First Nations boys than girls (71.4% of teenage girls play video games for less than an hour or not at all, compared to 29.8% of teenage boys). Older youth (15-17 years) are more likely than 12-14 year olds to report playing video games for less than an hour a day: 44.4% for 12-14 year olds versus 54.2% for 15-17 year olds.

Youth were also asked about time spent in potentially more active pastimes, such as spending time outdoors and assisting in household chores. Over half (60.2%) of teenagers spend 3 hours or more during the day outdoors, 30.7% spend 1 to 2 hours, and a mere 9.2% spend less than one hour outside. Moreover, 19.2% spend 3 hours or more a day assisting in

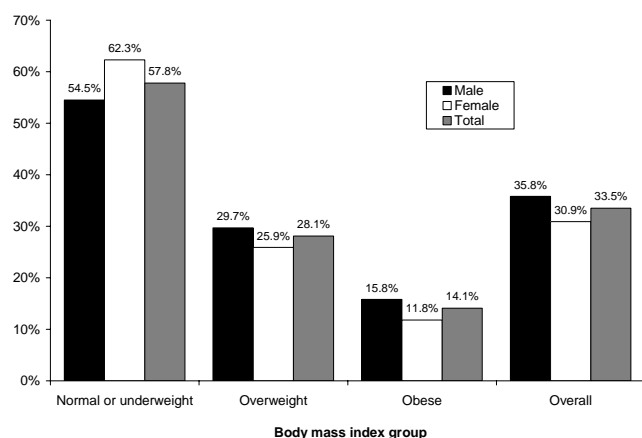
ⁱⁱ Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

household chores, 54.2% spend 1 to 2 hours and 26.6% spend less than one hour. Boys spend a greater amount of time (6 hours or more) outdoors, compared to girls (29.8% for boys compared to 19.2% for girls), whereas girls are more likely to spend a greater amount of time (3-5 hours) assisting in household chores compared to their male counterparts (19.7% for girls versus 10.2% for boys).

Nutrition

Roughly one in five First Nations youth indicate that they always or almost always eat a nutritious and balanced diet (18.4%), whereas 62.0% only sometimes do. The remaining 20% either rarely (15.4%) or never (4.2%) eat a balanced and nutritious diet.

Figure 2. Proportion of youth consuming a nutrition and balanced diet by gender



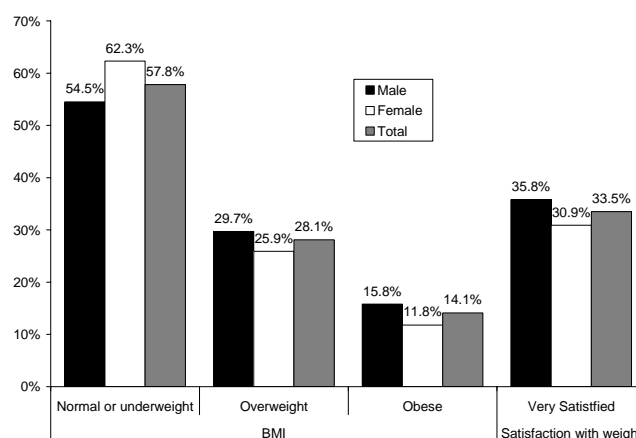
There were no differences between boys and girls in terms of eating a balanced and nutritious diet. However, boys consumed fast foods (49.2% a few times weekly) and soft drinks (90.3% at least once a week) more frequently than girls (41.9% and 86.6% respectively), whereas girls were slightly more likely than boys to eat sweets (pies, cakes, etc.) several times a day (6.4% for girls versus 3.6% for boys). Adolescent boys are more likely than adolescent girls to state that traditional food was “never” shared by someone in the household (17.6% for boys versus 10.4%, for girls), yet boys are more likely than girls to report that they have consumed traditional protein-based meat such as game or fish (38.8% for boys versus 31.0% for girls). Younger adolescents (12-14 years) are more likely than 15-17 year olds to report never or hardly ever consuming coffee or tea (64.1% versus 47.1% respectively), and are less likely to state that they never or hardly ever eat cake, pies, cookies and other sweets (13.7% versus 19.5% respectively).

Body mass index

Over half (57.8%) of youth are considered to be *normal or underweight*. However, 28.1% of First Nations adolescents are considered *overweight*. Moreover, 14.1% are deemed

obese. Adolescent girls are more likely than boys to be categorized as normal or underweight (62.3%, for girls and 54.5% for boys). However, when asked about the degree of satisfaction with their weight, girls are more likely than boys to be *somewhat or very* dissatisfied with their weight (14.7% and 9.8% for girls respectively, versus 7.0% and 3.8% for boys). There are no age-related differences for classification of body mass; however, younger adolescents (aged 12-14) are more likely than older youth (aged 15-17) to be *very* satisfied with their weight (37.6% versus 30.3% respectively).

Figure 3. Body mass index and satisfaction with weight by gender

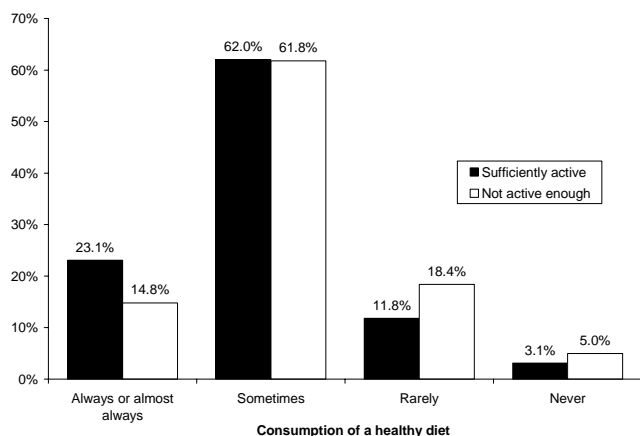
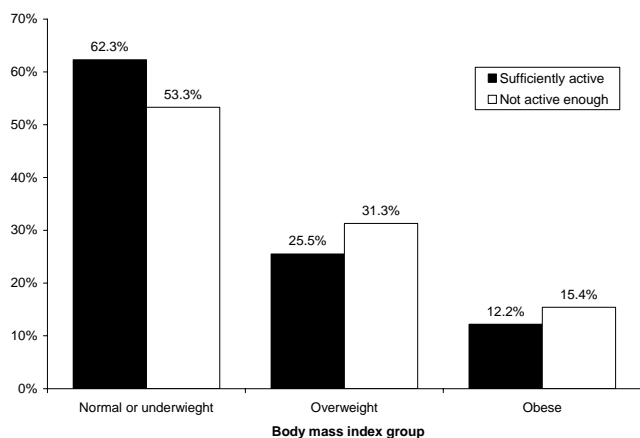


Relationships between physical and sedentary activity, nutrition and body mass index

Youth who are sufficiently active (23.1%) are more likely than those who are not (14.8%) to report that they always or almost always eat a nutritious or balanced diet, and are more likely to state that they often consume berries/wild vegetation (31.7% for those who are sufficiently active versus 22.1% for those who are not), or cultural foods such as fried bread or bannock (52.6% for those who are sufficiently active versus 42.5% for those who are not)ⁱⁱⁱ.

Those who are sufficiently active are more likely to be normal or underweight (62.3%) compared to youth that are not active enough (53.3%). Sufficiently active youth are more likely than those who are not to report that they are *very* satisfied with their weight (38.2% for those who are sufficiently active, compared to 29.9% for those who are not). Sufficiently active youth are more likely to participate in sports and other activity lessons 4 or more times a week outside of school hours compared to those who are not active enough (34.7% versus 8.3%), and they are more likely to spend 6 or more hours outdoors a day (30.0% for those who are active compared to 20.2% for those who are not active enough).

ⁱⁱⁱ Sometimes it may be necessary to take be cautious of associating traditional food with proper diet. For example, while berries and wild vegetation may be nutritious, fried bread consumed in large quantities may not be.

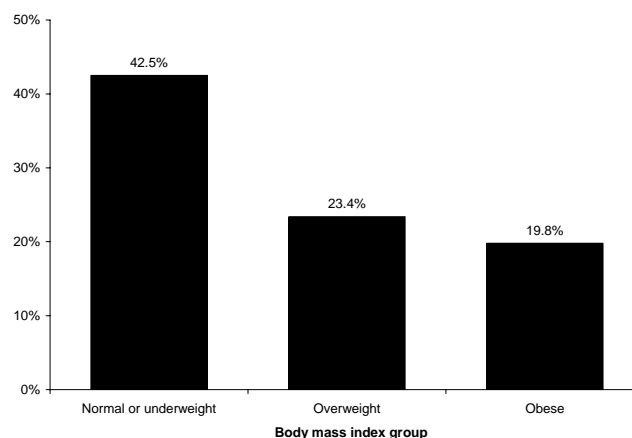
Figure 4. Frequency of consuming a healthy diet by physical activity**Figure 5. Physical activity of youth by body mass index**

No differences were observed in the reported nutrition or dietary practices of youth who were overweight or obese compared to those of normal weight or who were underweight.

Those who always or almost always eat a nutritious or balanced diet are more likely to be sufficiently active (56.8%) compared to those who rarely (35.0%) or never do (34.6%). Adolescents who consume soda pop several times a day (16.7%) are more likely than those who do so more infrequently (i.e. about once a week - 7.2%) to watch television for more than 6 hours a day, whereas those who *often* consume traditional protein-based meat products are more likely to spend 6 or more hours outdoors (29.4% for those who do compared to 22.3% for those who do not). Youth who always or almost always consume a balanced diet are considerably more likely to report that they are very satisfied with their weight (50.2%) compared to those who never consume a balanced diet (18.9%).

Large differences in being very satisfied with weight appear among youth who are obese (19.8%) or overweight (23.4%) and those who are of normal or underweight (42.5% - see

Figure 6). Normal or underweight youth are more likely to be sufficiently active (54.6% of those who are normal or underweight compared to 45.0% of obese youth). Obese youth are more likely (34.4%) than those who are normal or underweight (22.7%) to *never* participate in sport teams or lessons outside of school hours. Normal or underweight youth are more likely than obese youth to report spending at least 3 hours a day outdoors (36.6% for 3-5 hours among normal or underweight youth compared to 26.6% among obese youth). Normal or underweight youth are also more likely than obese youth to report spending 6 hours or more a day outdoors (26.5% among normal and 25.0% among obese youth). Overweight youth are more likely than normal or underweight youth to watch 6 or more hours of television per day (16.7% for overweight youth compared to 10.2% for normal or underweight youth).

Figure 6. Proportion of youth very satisfied with their weight by body mass index

Physical activity, nutrition and body mass from a cultural perspective

Table 2 summarizes the significant findings on physical activity, nutrition and body mass index of youth according to a First Nations holistic cultural framework, which takes into account the whole person and total environment. In addition to relationships with individual factors described in the first three sections of 2.0 above, significant relationships with physical and mental health, societal, and social factors are now described (see Table 2).

Youth who are sufficiently active (26.9%) are more likely than those who are not (17.6%) to report excellent health. As well, adolescents who are sufficiently active (37.4%) are less likely than those who are not (47.5%) to report experiencing difficulties learning at school.

Sufficiently active youth (68.1%) are more likely than inactive youth (58.5%) to not smoke cigarettes *at all*. Active youth are more likely to report that they feel that they are in balance spiritually and almost twice as likely to report feeling in balance physically all of the time. They are also more likely to have *never* thought about suicide (82.6% for those

active compared to 75.7% of those who are not active enough).

Table 2. Relationship of key indicators with physical activity, diet and body mass index (BMI)

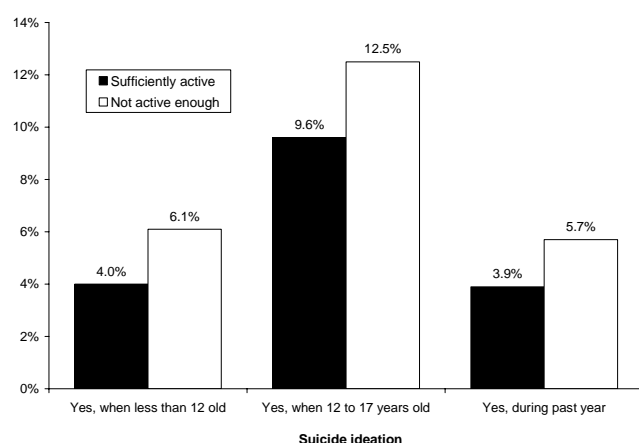
	Physical activity	Diet	BMI
Individual factors			
Age	x	✓	x
Gender	✓	✓	✓
Health factors			
General Health Status	✓	✓	✓
Cigarette smoking	✓	✓	x
Alcohol consumption	x	✓	x
Sedentary activity	x	✓	✓
Participation in physical activity/sports	✓	✓	✓
BMI	✓	x	n/a
Nutritious diet	✓	n/a	x
Mental health factors			
Suicide ideation	✓	✓	x
Life in balance	✓	✓	✓
Societal factors			
Community size	x	(trad foods) ✓	x
Liking school	x	✓	✓
Problems learning at school	✓	✓	x
Level of education aspire to complete	x	x	x
Social factors			
Person to go to for help	x	✓	x

✓ Significant association at the p=.05 level

x No observed association

n/a Not applicable

Figure 7. Relationship between sufficient activity and suicide ideation



Adolescents who always or almost always eat a balanced diet are more likely than others to cite excellent health (40.0% for

those who always do versus 12.4-18.9% for others). Adolescents who always or almost always eat a balanced and nutritious diet are roughly two times more apt to report that they like school very much (52.3%) compared to those who rarely eat a balanced diet (24.5%). Those who never eat a balanced and nutritious diet (59.9%) are more likely to report that they experience learning problems at school compared to those who always or almost always consume a nutritious diet (33.0%).

Youth who always or almost always eat a balanced and nutritious diet are more likely to state that they never smoke cigarettes (71.5%) compared to those who do not eat a balanced diet (56.4%). Youth who always or almost always eat a balanced and nutritious diet are also less likely than those who rarely do so to report alcohol consumption (34.1% for those always or almost always do, versus 55.2-55.9% for those who rarely or never do).

Youth who always or almost always consume a healthy diet are more likely than those who rarely eat healthy to state that they feel that they are in balance all of the time. Similarly, they are more likely to have never thought about committing suicide (86.2% of those who always or almost always eat healthfully versus 66.3% of those who rarely do).

Adolescents that are obese are less likely than those who are normal or underweight to indicate being in excellent health (15.2% for obese adolescents compared to 25.0% for those who are normal or under weight), yet are more likely to say they are in good health (42.1% for those who are obese versus 28.7% for those who are normal or under weight). Obese adolescents are also less likely to consider themselves in physical balance all of the time compared to normal or underweight youth. Moreover, obese youth (45.6%) are more likely than normal or underweight youth (35.1%) to state that they like school *very much*.

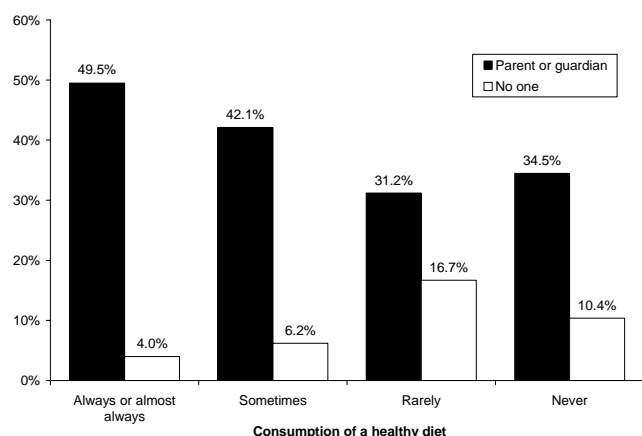
Table 3. Prevalence ratings of being in balance by consuming a nutritious diet (n=3,902)

Being in balance all of the time	Eating a nutritious diet	
	Always or almost always	Rarely
Physical balance	49.5%	23.1%
Emotional balance	31.9%	16.5%
Mental balance	39.3%	23.8%
Spiritual balance	34.9%	14.4%

Youth who always or almost always consume a nutritious diet are more likely than those who rarely eat a healthy diet to approach their parents if they have family problems (49.5% for those who always eat healthfully versus 31.2% for those who rarely do). Conversely, having no one to turn to for help occurs less frequently when the youth has a

healthy diet (4.0% for those who always eat healthfully versus 16.7% for those who rarely do).

Figure 8. Proportion consuming a healthy diet by who to approach with family problems



Adolescents living in small communities (less than 300 residents) are more likely to consume traditional protein-based meat products (42.8%), and to eat traditional berries and wild vegetation (29.3%), compared to those in communities of 1,500 residents or more (where 28.7% consume traditional protein-based meat products and 19.6% consume traditional berries and vegetation). (See Table 3).

Discussion and Recommendations

Immediate consequences of childhood obesity may include diabetes, asthma, gallstone development, hepatitis, obstructive sleep apnea, orthopedic problems (bowing of the legs as an example), menstrual abnormalities and neurological conditions.²³ In addition, social and emotional problems result from obesity and being overweight; obese children may suffer from self-consciousness about their body image, poor academic achievement, and lower self-esteem. However, differences in self-esteem also appear based on age, culture and socioeconomic status.

Suicide is a particular issue among Aboriginal youth; Aboriginal youth suicide rates are estimated to be five to six times higher than those of non-Aboriginal youth in Canada.²⁴ These rates vary by region, Aboriginal community, tribal councils, language, facets of community control, and gender. Strategies to overcome the issue of youth suicide among Aboriginal communities should be multi-faceted and should involve the individual, family, and community. The First Nations Regional Health Survey found that youth who are sufficiently active and who always consume balanced and nutritious diets are less likely to have suicidal thoughts. This suggests that following a healthy lifestyle may contribute to the resilience of youth. Therefore, physical activity and diet may be key considerations when elders and health professionals in First Nations communities are considering

strategies, policy development and programs to combat this unprecedented crisis.

Although pervasive among all youth, physical inactivity is more prevalent in certain segments than in others. Furthermore, certain physical activities are more popular among certain population groups than others, and these trends need to be reflected in the development of strategies. For example, participation in traditional physical activities, outdoor activities, team sports and activities of greater intensity are more prevalent among First Nation boys, whereas individual activities of more moderate intensity are more popular with girls. Research among the general population shows that physical activity among children and youth tends to decrease with age; 49% of grade-school children (aged 5–12) are active compared to 36% of teenagers (aged 13–17).²⁵ This is consistent with the finding that participation on sports teams and in physical activity lessons was generally lower among older First Nations teens.

An interesting result from this study found that adolescents who consume traditional foods were more likely to report spending time outdoors. Nonetheless, the profiles of youth who never follow a traditional diet differ from those who rarely do. Could this be related to relative access to food choices? Encouraging outdoor activities may be a strategy to increase physical activity among teenage girls and obese youth, who currently tend to spend less time outdoors. At the same time, girls typically reported spending more time at household chores than boys of the same age. *Canada's Physical Activity Guides for Children and for Youth* incorporate household chores into their suggested activities. Chores may be an important way to increase the total amount of activity by supplementing time spent in moderate and vigorous activities — which are fundamental to the development of physical movement and decision-making skills that will enable youth to pursue a lifetime of enjoyable activity. Health promotion efforts should underscore the value of all physical activities, particularly sport and recreational physical activities, along with bicycling and walking as a utilitarian means of travel. In determining policies and strategies targeting certain groups, it may be important to consider tailoring the types of physical activities preferred by certain age and gender groups to culturally appropriate activities (such as traditional physical activities used for procuring traditional foods)

Poor quality diet is pervasive. The nutrition data gathered by the RHS is consistent with another study examining food intake and food habits of First Nations children. Both found that fat composition of diet is related to accumulation of body fat.²⁶ Several interesting findings indicated that children who always or almost always eat a balanced and nutritious diet are roughly two times more likely to report that they like school very much and less likely to report that they experience learning problems at school. This suggests that having a nutritious diet may confer greater benefits for youth

beyond physical health benefits. However, roughly four out of five adolescents only eat a balanced and nutritious diet sometimes or even less often. Why are teenagers not eating a balanced diet? Is it related to food preferences, access issues, or lack of knowledge on how to create such a diet?

Adolescent girls are more likely than boys to be categorized as normal or underweight; however, when asked about the degree of satisfaction with their weight, girls are more likely than boys to be somewhat or very dissatisfied with their weight. Why is there such a discrepancy, and how does this relate to preferences for physical activity and dietary choices? More research can be undertaken to determine the reasons for such discrepancies (i.e., research into the absolute amount of physical activity undertaken, nutrients in the diet, and access to opportunities for physical activity and nutritious choices) before understanding the issues related to diet, physical activity and perceptions of weight among First Nations youth.

Given the influence of television advertising, youth who consume soda pop several times a day are more likely to watch television for more than 6 hours a day than those who never or hardly ever do. This is supported by content analysis research indicating that during Saturday morning television programming, an individual can be exposed to 1 food commercial for each 5 minutes of television viewing,²⁷ and that television food advertising has a negative influence on a child's ability to identify a healthy food choice from paired items.^{28,29} Aside from a parent's role in reducing or restricting the amount of television viewing to which a youth is exposed, governmental policies regarding television advertising content and other types of advertising are also important.

Regulating participation in sedentary activity is also a key message contained in *Canada's Physical Activity Guides for Youth*. This guide states that reducing "non-active time" (i.e., watching television, videos, or working on the computer) should start with 30-minute reductions a day. A study examining the relationship between obesity, physical activity and hours of sleep in school children found that excess weight was directly correlated with daily sitting hours.³⁰ Reducing sedentary time is particularly important for overweight First Nations youth, as this study found that overweight youth are more likely to spend 6 or more hours a day watching television. In many of these cases, this sedentary time is in addition to those hours spent being sedentary at school.

Understanding physical activity and dietary patterns of youth from a First Nations holistic cultural framework means considering the following:

- Physiological factors such as growth and development;
- Psychological factors such as motivation, confidence and self-efficacy;

- Socio-cultural factors such as the role of family and one's socio-economic status; and,
- Ecological factors such as geography, climate and opportunities to be active and to obtain nutritious foods.³¹

In relation to the last point, research indicates that physical activity levels of children tend to be associated with weather patterns and changes in climate.³² Activity levels are average in the spring, increase dramatically in the summer, and then decline in the fall and winter months.

Thus, policies and strategies for increasing physical activity and improving diet need to take a broad perspective, including a consideration of the agriculture, transportation, recreation, and social sectors. A review of existing policies and practices in these sectors should examine how they influence access to opportunities among boys and girls of different ages as well as the families and communities in which they live. Independent yet complementary strategies need to be developed to ensure that children and youth internalize the importance of physical activity and nutrition in their development, since these both contribute to optimal development of the "total" person.

A cultural perspective is essential to promotion strategies, and to understanding barriers relevant to the Aboriginal population, such as weather, safety, homework, chores, and lack of facilities.³³ Therefore, the list of recommended approaches to increasing physical activity of youth^{34,35,36} needs to be vetted with community elders, school officials and recreational service providers to determine which are both culturally appropriate and feasible.

Healthy living strategies need to consider potential protective factors other than physical activity and nutrition in improving health and reducing the number of overweight and obese children. Policies addressing factors such as socio-economic disparities, community opportunities, physical environment and social support are needed. Moreover, harmonized programs that involve school, community, and family are important in developing healthy eating habits and activity behaviours among First Nations children and youth, by creating supportive social norms and opportunities (e.g. positive community/sporting events such as the North American Indigenous Games).

This study found that, when dealing with family problems, those who eat healthfully tend to find support from parents, whereas those who do not eat healthfully have no one for support. This suggests that using family role models to influence behaviours may be an important means of reaching certain segments of the youth population. Further investigation of the interconnectedness of these factors is necessary to understand how programs could positively influence healthy lifestyle practices and reduce obesity among First Nations youth. A better understanding of the interconnectedness of the various factors could help to ensure

that the 4-dimensional aspects of “total person” and of “total environment” are considered when developing strategies for First Nations youth.

The Regional Health Survey is one necessary component in an ongoing system which develops First Nations peoples’ health strategies. More detailed information on diet and physical activity - including their determinants - is required for children and adults, and this information should be monitored regularly. The data monitoring process would ideally include collection of objective measures of energy intake and physical activity. Objective anthropometric measures (e.g. height, weight, waist girth) are also needed. This surveillance data is a key component of the overall knowledge system required to identify and assess the success of policies, strategies and programs that will help shape the future health of First Nations youth.

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Chapter 19

Disability and Chronic Conditions

Abstract

This chapter explores disability and long-term health conditions among First Nations youth aged 12–17 years. Disability is more prevalent among youth 12–14 years than 15–17 years.

First Nations youth with disabilities are as likely to be attending school as those without disabilities. Although they are more likely to have difficulties in school, they are about as likely as those First Nations youth without disabilities to have repeated a grade, and their educational aspirations are much the same.

Those with disabilities consider it as important as others to be able to speak their First Nations language but are less likely to be able to speak a First Nations language fluently or relatively well. Youth with disabilities are as likely to engage in physical activity, traditional cultural activities and sports teams/lessons as those without disabilities, suggesting that they live in cultures that are inclusive.

Allergies, asthma and chronic ear infections are the most common of the chronic conditions affecting First Nations youth. Levels of treatment for allergies and ear problems are low—as they are for learning disability, Attention Deficit Hyperactivity Disorder and chronic bronchitis.

Youth with disabilities tend to be affected by more than one long-term health condition and to be limited in their activities by more than one of these. Their general health is poorer and they are more likely to be overweight/obese. They are just as likely to have consumed alcohol and marijuana/hash and to be sexually active. Between one-fifth and one-third *did* engage in each of these activities.

Youth with disabilities have lower self-esteem and tend to exhibit lower dexterity in certain areas of personal control/mastery. They are more likely to experience loneliness, stress and depression, and to have contemplated suicide. The chapter ends with recommendations.

Introduction

Chapter overview

This chapter explores disability and long-term health conditions among First Nations youth 12 to 17 years. Long-term conditions are defined as those that have lasted or that are expected to last six months or more and that have been diagnosed by a health professional. The chapter examines general demographics (e.g., prevalence of disability by age, gender and various other dimensions; living arrangements, schooling and activities in the community) as well as issues of health, lifestyle and well-being. The chapter provides selected comparisons of First Nations youth with and without disabilities, as well as several comparisons of First Nations youth and their counterparts in the broader adolescent population in Canada.

For comparative purposes, the chapter includes data from Statistics Canada's Canadian Community Health Survey (CCHS) of 2003ⁱ and in a few places draws from published tables and user-defined tabulations based on Statistics Canada's Participation and Activity Limitation Survey (PALS) of 2001, a survey that placed a focus on disability.ⁱⁱ

Working definition of disability in adolescence

The First Nations Regional Longitudinal Health Survey (RHS) asks a battery of questions about what the survey classifies as long-term health conditions diagnosed by health professionals and about whether any of these conditions limit the kinds or amount of activity survey respondents can do. Based on the RHS, the research defines First Nations youth 12 to 17 years as having a disability if they indicated that they are limited in their activities due to any of those long-term conditions.

Fewer activity limitation/disability questions were asked in the RHS youth survey than in the adult and child questionnaires, resulting in a narrower definition for this chapter. Nevertheless, since the youth disability questions are in large measure a subset of those used for determining disability rates among children and adults, some comparability is still possible.

Differences in survey design indicate that the research uses a broader (and not directly comparable) definition of disability for Canadian youth in general. For Canada overall, disability among youth is defined as having the amount or kind of activities that one can do at home, work or school or other activities (such as leisure or travelling) reduced because of a long-term health condition or problem, and/or having any difficulties seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities. The

Canadian results are based on the Canadian Community Health Survey (CCHS) and include a wider age range: respondents 12 to 19 years.ⁱⁱⁱ

Results

Basic demographics of disability among First Nations youth

General prevalence

Using the RHS data on any activity limitations that stem from long-term health conditions, 7.7%^{iv} of First Nations youth can be classified as having disabilities. Applying a similar definition of disability to children, which is narrower than the definition used in the chapter on children with disabilities, the comparable rate for children under 12 is 8.1%. The more broadly defined disability estimate presented in that chapter (11.7%) is 1.44 times higher than the narrower approach. Applying this “escalator” (factor) to the presently conservative estimate for youth, the prevalence of disability among First Nations youth rises to 11.1%.

Unpublished data, provided by the federal Office for Disability Issues (ODI) and based on the disability questions for the 2001 Census, indicate that disability is 1.5 times more prevalent among First Nations children from birth to 14 years than among non-Aboriginal children in Canada.^v These findings are similar to those reported by ODI for Aboriginal adults in Canada.¹ It seems plausible that the prevalence of disability among First Nations youth is also higher than in the general population.^{vi}

Prevalence and gender

The research found that disability in adolescence is as common among First Nations females as males. 8.3% of adolescent females have disabilities compared with 7.2% of males (NS)^{vii}.

Of all First Nations youth with disabilities, 51.6% are females. Among youth without disabilities, 47.6% are females. Although not significant, the general direction of this finding is similar to that based on the CCHS, which shows that 51.8% of youth in the general population with disabilities are females. Among youth in the general population without disabilities, 47.9% are females.

Prevalence and age

The research found that 9.8% of First Nations youth 12–14 years have disabilities compared with only 6.1% of youth

ⁱ The CCHS provides information on the health and health-related behaviours of Canadians. It did not survey people in the northern territories, on military bases, in institutional collective dwellings or living on First Nations reserves. It did not include children younger than 12 years.

ⁱⁱ PALS included children but did not include people in the northern territories, on military bases, in institutional collective dwellings or living on First Nations reserves.

ⁱⁱⁱ In the CCHS public use file, respondents are grouped into 5-year age categories. That file does not facilitate disaggregating 15–17 year-olds from the 15–19 age group.

^{iv} To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

^v The term “Aboriginal people” as used by ODI includes First Nations, Métis and Inuit people.

^{vi} There are some comparability issues between the RHS, CCHS and PALS that make it difficult to show comparative prevalence rates for First Nations and other adolescents. Essentially, there are no equivalent questions in the CCHS or PALS to the RHS disability indicators for adolescents.

^{vii} Comparisons between groups reported in this chapter that are all significant unless “NS”—not significant—is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

15–17 years. It is not immediately clear why there is an apparent dip in prevalence across these age groups. PALS shows that in the general population the prevalence of disability tends to increase with age.² However, in the general population there is also what appears to be a dip in prevalence between 10–14 year olds (4.2%)³ and 15–19 year olds (3.5%).^{viii} Again, the reasons for this are not immediately clear.

Prevalence, isolation status and size of community of residence

No differences were found according to community size. Although not statistically significant, the research found 81.6% of First Nations youth with disabilities live in non-isolated communities (with road access and less than 90 km from physician services) compared with 68.5% of their counterparts without disabilities.

Living arrangements, schooling and activities in the community

Living arrangements

Generally, First Nations youth with disabilities are in similar living situations as youth without disabilities. For example, among those with and without disabilities, respectively, 78.8% and 79.0% live with their biological mothers and 47.9% and 49.9% live with their biological fathers (NS).

Schooling

The vast majority of First Nations youth with disabilities are attending school (95.9%) and they are statistically equal to their counterparts without disabilities to be doing so (91.3%). While fewer than half of youth with and without disabilities say they very much like going to school (43.2% compared with 35.6% respectively), relatively few (12.3% and 10.7% respectively) say they dislike school somewhat or very much (NS).

A higher proportion of First Nations youth with disabilities indicate that they have had problems learning in school (59.2% compared with 42.3%). Those with disabilities have had greater difficulties with reading, writing, math and attention span (Table 1). Of some interest, First Nations youth with disabilities are about as likely as their counterparts without disabilities – not significantly more likely – to have repeated a grade (42.9% compared with 41.6% respectively). However, despite the disparity in various learning problems at school, there were no significant differences with the educational aspirations of First Nations youth among those with or without disabilities.

Table 1. Types of difficulties First Nations youth have learning at school, by disability status

Difficulty	Others	With disability	Total
Reading	26.6%	38.2% *	27.8%
Writing	15.8%	36.5% *	18.0%
Math	46.9%	62.9% *	48.6%
Attention span	13.4%	22.9% E *	14.4%
Too many distractions	35.6%	42.7%	36.3%
Understanding the teacher	26.8%	35.4%	27.7%

E High sampling variability. Use figure with caution.

* Statistically significant difference at a 95% confidence interval.

Language, culture and community activities

When asked how important it is for them to speak their First Nations language, youth with disabilities are about as likely as their counterparts without disabilities to say it is “very important” (48.2% compared with 44.8%) or “somewhat important” (31.9% compared with 37.6%). Those with disabilities are more likely to have the support of three or more people to help them understand their culture (46.7% compared with 36.4%). Such people include nuclear and extended family members, friends, teachers, community elders and other community members to a maximum of seven helpers.

Youth with disabilities are less likely to indicate that they are able to speak one or more First Nations languages fluently or relatively well (19.6% compared with 27.6%, a difference that is statistically significant).

In general, youth with disabilities appear to be about as active physically and involved in other activities as those without disabilities. Most First Nations youth with disabilities report being physically active at least twice per week (78.5%), which is equivalent to their counterparts without disabilities (79.5%) (NS). More than half take part in sports teams or lessons outside of school hours at least once in a given week (53.4%), as do more than half of their counterparts without disabilities (53.7%) (NS). Those with disabilities are about as likely as their counterparts without to take part in a given week in traditional singing, drumming or dancing groups or lessons (10.8% compared with 9.7% in a given week - NS) and to have a job such as baby-sitting, working at a store or tutoring (33% compared with 32.5% - NS). They are also as likely to be involved in art or music lessons or groups in a given week (10.6% compared with 15.2% - NS).

^{viii} The latter figure is based on a cross-tabulation performed with the PALS public use file.

Health, lifestyle and well-being

Long-term conditions and disability in adolescence

Table 2 shows the prevalence of what the RHS classifies as long-term health conditions among First Nations youth. These are conditions that have lasted or are expected to last at least six months and that have been diagnosed by a health care professional. The RHS enquired into 19 such conditions and allowed for open-ended responses about conditions not specifically presented on the youth questionnaire. Among the conditions for which structured questions were asked, some are very low prevalence and involve high sampling variability so are not shown on the table. These include hepatitis, HIV-AIDS, epilepsy, cognitive or mental disability, cerebral palsy, physical disability other than cerebral palsy, liver disease aside from hepatitis and kidney disease.

Column D on Table 2 shows that allergies, asthma and chronic ear infections/ear problems are the most common of the conditions reported for First Nations youth. These are also the most common for First Nations children younger than 12 years. Chronic bronchitis is not so prevalent but presents serious health risks. Learning disability and Attention Deficit Disorder / Attention Deficit Hyperactivity Disorder are fairly low in prevalence but can involve multiple challenges to academic performance and social integration that can persist into and throughout adulthood.

The chapter in this publication on First Nations children and disability provides brief descriptions of chronic bronchitis, asthma, allergies, chronic ear infections, learning disability and Attention Deficit Hyperactivity Disorder. A separate chapter is dedicated to diabetes. Blindness/serious vision problems and hearing impairments are self-explanatory.

Allergies are the most common of the conditions shown in Column D on Table 2. First Nations youth seem to be less susceptible to allergies than youth in general in Canada. Allergies affect 15.1% of First Nations youth but 31.2% of youth more broadly. However, of First Nations youth with this condition, only 26.3% with are receiving treatment for it.

The next most common long-term condition among First Nations youth is asthma, affecting 13.6%. First Nations youth seem to be at least as susceptible as youth in the general population, among whom 12.4% have asthma. Some 31.2% of First Nations youth with this condition had an asthma attack in the reference year, compared with 42.7% of youths in the general population. As confidence intervals were not available for the CCHS data, and as the questions on recent asthma attacks/symptoms are worded slightly differently in the RHS and CCHS, the differences in the reported occurrence of asthma attacks affecting First Nations and other youth in the past 12 months may not be statistically significant. Of some concern is that only 55.9% of First Nations youth with this condition are being treated for it.

Chronic bronchitis would seem to be more prevalent among First Nations youth than youth in the general population; 2.4% of First Nations youth have this condition compared with 1.4% of youths more generally. Chronic bronchitis presents potentially serious long-term health risks. Only 16.5% of First Nations youth with this condition are receiving treatment for it.^{ix}

At 3.5%, the reported prevalence of learning disability among First Nations youth is not as high as in the general population, where 6.3% of youths have this condition. Lesser access by First Nations youth to diagnosis of learning disability by educational psychologists and other professionals may be a factor that accounts for some of the reported difference. Only 12.6% of First Nations youth with learning disability are receiving interventions to address this condition, which is of some concern as learning disability can adversely affect academic and vocational prospects as well as relationships into and throughout adulthood.^x

Of the 2.4% who have ADD/ADHD, only 34.2% are receiving treatment for it.^{xi} This is also of some concern because, as with learning disability, ADD/ADHD can have adverse, long-range effects on academic and vocational prospects as well as relationships.

While low in prevalence and affecting only 0.7% of First Nations youth, tuberculosis (TB) is an infectious communicable disease caused by bacteria (*Mycobacterium tuberculosis*) that most commonly affects the lungs. It is transmitted primarily from person to person during close contact by breathing infected air. When the inhaled TB bacteria enter the lungs, they can multiply, causing a local lung infection. TB also can involve almost any organ of the body; the kidneys, bone, and lining of the brain and spinal cord are the most common sites beyond the lungs. Without effective treatment, patients can “waste away.” However, TB usually can be treated successfully with antibiotics.⁴

The CCHS does not provide comparable data to the RHS on the prevalence of TB, blindness/serious vision problems or hearing impairments, so comparisons are difficult to draw with the broader adolescent population. Coefficients of variation are high for RHS data on the extent of treatments/interventions for First Nations youth who have these conditions. However, it is probably safe to say that those who receive treatments are minorities among the youth who have the conditions.

^{ix}Owing to high sampling variability, that figure should be used with caution. At a 95% confidence interval the estimated proportion receiving treatment ranges between 10.2% and 25.8%.

^xOwing to high sampling variability, that figure should be used with caution. At a 95% confidence interval the estimated proportion receiving treatment ranges between 8.3% and 18.7%.

^{xi}Owing to high sampling variability, that figure should be used with caution. At a 95% confidence interval the estimated proportion receiving treatment ranges between 21.8% and 49.2%.

Table 2. Selected long-term health-related conditions among First Nations youth, by two disability statuses

A	B	C	D	E	F
Long-term conditions	% with no disability reporting the long-term condition	% with any disability reporting the long-term condition	Total % (with and without disabilities) reporting the long-term condition	Of those with the condition, % with disability caused by any condition	Of those with the condition, % with disability caused by that condition
Chronic bronchitis	1.5% E	12.1%	2.4%	39.5%	36.0%
Asthma	9.8%	57.9%	13.6%	34.0%	31.2%
Allergies	12.8%	41.5%	15.1%	21.7%	16.7%
Blindness or serious vision problems	1.2%	9.2%	1.9%	38.6%	- E
Chronic ear infections or ear problems	3.5%	19.8%	4.8%	32.5%	23.1%
Hearing impairment	1.1% E	- E	1.7%	- E	- E
Tuberculosis	0.6% E	- E	0.7% E	- E	- E
Psychological or nervous condition	- E	- E	1.2% E	- E	- E
Learning disability	2.3%	17.1%	3.5%	38.9%	23.2%
ADD/ADHD (1)	1.8%	10.0% E	2.4%	- E	- E
Diabetes	0.7% E	- E	0.8% E	- E	- E

1. Attention Deficit Disorder / Attention Deficit Hyperactivity Disorder

E High sampling variability. Use figures with caution.

- E Sampling variability too high for release of data.

Column C on Table 2 shows the percentage of First Nations youth with any disabilities who have the long-term conditions reported in Column A. High percentages of youth with disabilities have asthma (57.9%), allergies (41.5%), chronic ear problems (19.8%), learning disabilities (17.1%) and chronic bronchitis (12.1%).

Column E takes as the units of analysis the “universes” of First Nations youth who have a given condition, and then it shows the percentage of these youth who have any disability, whether caused by that condition or by one or more additional long-term conditions. Generally, about one-third of youth with the long-term health conditions shown on the table have some level of disability. These figures suggest that there is about a one in three chance that youth who have any of the conditions shown on Table 2 will have some level of disability.

While the figures for low prevalence conditions cannot be shown owing to high sampling variability, youth reported as having a cognitive or mental disability, and physical disabilities aside from cerebral palsy were found to have activity limitations in the majority of cases.

Column F on Table 2 again takes as the units of analysis the “universes” of youth with a given long-term condition, but shows the extent to which youth with a given condition incur disability (are limited in their activities) as a result of *that* condition; the figures range from 16.7% to 36%. In all cases the prevalence of condition-specific disability is lower than the prevalence of disability shown in Column E because the figures in column E represent disability stemming from *any* condition. Some youth are limited in activities by more than one condition. Accordingly, the figures in column E are inclusive of the figures shown in column F.

Multiple disabilities and health conditions in adolescence

It is not uncommon for First Nations youth to report more than one long-term health condition and more than one type of disability. The average number of long-term health conditions among youth without disabilities is 0.4. Among youth with disabilities the average number is 2. Youth with any disability are limited in their activities on average by 1.4 long-term conditions.

Among First Nations adolescent males with disabilities, the average number of long-term health conditions is 2.2, and the average number of conditions identified as limiting activity is 1.7. Among female youth with disabilities, the average number of long-term health conditions is 1.8, and the average number of these that limit activities is 1.2.

^{xv} Some 70.7% of adolescents in the general population without disabilities are in excellent or very good health and only 3.4% are in fair or poor health.

Disability and general health in adolescence

The general health of First Nations youth with disabilities is poorer overall than that of other youth. For instance, 36% of youth with disabilities rate their health as very good or excellent compared with 59% of their counterparts without disabilities. Some 18.1% of youth with disabilities indicate they are in fair or poor health, compared with only 9.2% of other First Nations youth. In the general youth population in Canada, 11.2% with disabilities are in fair or poor health, and 52.1% are in excellent or very good health.^{xv}

The general health of only 27.6% of First Nations female youth with disabilities is excellent or very good, compared with 57.7% of their counterparts without disabilities. The general health of 44.9% of male youth with disabilities is excellent or very good, compared with 60.3% of their counterparts without disabilities.

First Nations youth with disabilities are more likely than their counterparts without disabilities to be overweight or obese (58.0% compared with 40.8%). Adolescent males with disabilities are more likely than females to have this problem (68.4% compared with 44.9%).

Alcohol and drug use

Although not significant, 32.8% of First Nations youth with disabilities have consumed alcohol in the year before the survey compared to 43.7% of youth without disabilities. They are, however, just as likely to have used marijuana or hashish in the year (27.6% vs. 33.1%) (NS). The proportion reporting use of other non-prescription drugs (e.g. cocaine, crack, inhalants, LSD) is below 2% for both those with and without disabilities.

Sexual Activity

Some 20.4% of First Nations youth with disabilities consider themselves to be sexually active, and 20.2% had sexual intercourse in the reference year. Among their counterparts without disabilities, the same proportion consider themselves sexually active (29.1%) (NS), but are more likely to report having sexual intercourse (31.9%) in the reference year.

Among sexually active First Nations youth without disabilities, 45.4% are females compared with 64.1% among sexually active youth with disabilities.

Self-esteem, personal control and mood/affect

The RHS explored how First Nations youth feel about themselves by asking them how strongly they agree or disagree with the statements “I like the way I am,” “I have a lot to be proud of” and “A lot of things about me are good.” Overall, the picture looks similar for youth with and without disabilities, except that youth with disabilities are somewhat

less likely to agree or strongly agree with the statement “I like the way I am” (78.2% compared with 85.6%). The difference is most pronounced among males, among whom 79.6% with disabilities agree or strongly agree with the statement compared with 90.4% of their counterparts without disabilities (Table 3).

The RHS also explored issues of personal control and mastery. Generally, the responses of First Nations youth with disabilities imply a statistically similar sense of mastery/control to their non-disabled counterparts. For example, First Nations youth with disabilities, both male and female, are just as likely as their non-disabled counterparts to feel that they do things well (78.1% compared with 83% non-disabled) and that they can do just about anything they set their mind to (78.9% compared with 85.3%). However, youth with disabilities are *considerably* less likely to indicate that no one pushes them around (63.3% compared with 76.2%). In other words, they are more likely to feel pushed around.

Adolescent males with disabilities are less likely than their counterparts without disabilities to agree or strongly agree that they no one pushes them around (60.5% compared with 79.1%) and that they have control over the things that happen to them (62.8% compared with 78.9%).

There are no significant differences between adolescent females with disabilities and those without.

The RHS asked youth about how lonely, stressed and loved they feel. Those with disabilities are more likely to feel some level of loneliness than their counterparts without disabilities (62.8% compared with 50.7%). They are also more likely to experience some level of stress (78.8% compared with 64.3%). Overall, First Nations youth with disabilities are just as likely to feel loved “a lot” (50% compared with 52.2%), but there are some gender differences.

First Nations youth with disabilities seem more prone to depression, which is defined as feeling sad, blue or depressed for more than two weeks in a row in the reference year (35.6% compared with 26.5%). Females with disabilities are particularly likely to have experienced depression (51.2% compared with 35.8% of adolescent females without disabilities). Youth with disabilities are also more likely to have contemplated committing suicide at some point in their lives (32.4% compared with 20.1%).

Although a statistically similar percentage of youth with than without disabilities received counselling, psychological testing or other mental health service in the 24 months before the RHS was conducted, females with disabilities are more than twice as likely to have received such services as males with disabilities (29.9% compared with 13.7% NS).

Table 3. Percentages agreeing or strongly agreeing with the following statements, by disability status and gender

	Others			With disability		
	Male	Female	Total	Male	Female	Total
Self-esteem						
In general, I like the way I am	90.4%	80.3%	85.6%	79.6%	76.8% (NS)	78.2%
Overall, I have a lot to be proud of	91.3%	86.0%	88.8%	91.7%	80.7% (NS)	86.0% (NS)
A lot of things about me are good	85.2%	82.5% (NS)	83.9%	90.7%	79.0% (NS)	84.7% (NS)
Personal control/mastery						
When I do something, I do it well	86.1%	79.7%	83.0%	82.3%	74.1% (NS)	78.1% (NS)
I can solve the problems that I have	82.5%	71.9%	77.4%	75.5%	72.8% (NS)	74.1% (NS)
No one pushes me around in life	79.1%	73.1%	76.2%	60.5%	65.9% (NS)	63.3%
I have control over the things that happen to me	78.9%	74.2% (NS)	76.7%	62.8%	76.1% (NS)	69.9% (NS)
I can do just about anything I really set my mind to	87.9%	82.5%	85.3%	80.6%	77.2% (NS)	78.9% (NS)
I often feel helpless in dealing with the problems of life	34.3%	33.5% (NS)	33.9%	24.3%	39.2% (NS)	32.5% (NS)
What happens to me in the future mostly depends on me	87.0%	85.4% (NS)	86.2%	80.6%	85.3% (NS)	83.0% (NS)
There is little I can do to change many of the important things in my life	39.9%	42.1% (NS)	41.0%	37.5%	50.5% (NS)	44.7% (NS)

Summary of Key Findings

This chapter explored disability and long-term health conditions among First Nations youth 12–17 years. The research found that disability is more prevalent among younger youth 12–14 years than youth 15–17 years.

First Nations youth with disabilities are in much the same family living arrangements as other First Nations youth, are as likely to be attending school, but are more likely to have difficulties with various school subjects. They are about as likely as their counterparts without disabilities to have repeated a grade and their educational aspirations are much the same.

Like First Nations youth without disabilities, those with disabilities generally consider it important to be able to speak their First Nations languages, but youth with disabilities are less likely to be able to speak them fluently or relatively well (27.6% versus 19.6%). Those with disabilities are about as likely as those without to take part in sports teams/lessons outside of school, to be physically active and to take part in traditional cultural activities.

Allergies, asthma and chronic ear infections are the most common of the chronic conditions affecting First Nations youth with and without disabilities. Levels of treatment for allergies and ear problems are low, as they are for lower prevalence but problematic conditions such as learning disability, Attention Deficit Hyperactivity Disorder and chronic bronchitis. It is fairly common for youth with disabilities to be affected by more than one long-term condition and to be disabled by more than one condition.

The general health of First Nations youth with disabilities is poorer than their counterparts' without disabilities and they are more likely to be overweight or obese.

First Nations youth with disabilities are as likely to have had an alcoholic drink, to use marijuana or hashish and to have sexual intercourse, although those activities were still reported by about one-fifth to one-third of the group.

Youth with disabilities generally have a lower sense of self-esteem and a lower level of certain aspects of personal control and mastery than other youth. They are also more likely to experience loneliness, stress and depression and to have contemplated suicide.

Recommendations

It would be helpful if there were greater symmetry between the disability indicators for youth in the RHS and on Statistics Canada's population surveys. This would better enable comparisons of prevalence of disability and of other issues concerning First Nations and other youth.

Overall, it would seem that First Nations adolescents valuation of and participation in physical activities, community/cultural activities and schooling is on par with that of youth without disabilities. So are their educational aspirations. This suggests that community cultures of inclusion are emerging or are already place for many of these young people. Community elders and other leaders, families and educators should be acknowledged and supported to continue fostering inclusion and support for youth with disabilities.

Troubling are the low levels of treatment/intervention for high prevalence conditions such as allergies and chronic ear infections, for lower prevalence but challenging conditions such as learning disability and ADHD, and for potentially

risky if low prevalence conditions such as chronic bronchitis. While levels of treatment for asthma are above 50%, no doubt more young people could benefit from treatment. Parents/guardians need to be alerted to the risks of conditions such as asthma and bronchitis, and about how to help young people manage the risks. They may need information on how to help youth manage allergies and may need information about, or better access to, interventions to address conditions such as learning disability and ADHD. Community audits may be useful to determine why the treatment/intervention levels are quite low for various conditions and what can be done to address those issues.

The significantly poorer health of youth with disabilities, particularly females, needs attention through research and gender-specific health promotion efforts that target not only individual health behaviours but broader social and economic health determinants as well. The RHS youth survey was self-administered and household income information was not collected. If that gap were addressed in a future iteration of the survey, the RHS could perhaps shed some light on the broader determinants of the relatively poor health of youth with disabilities. Also useful would be information about the difficulties young people might be encountering in their efforts to secure the health and other services they need to optimize their health.

Youth with disabilities are more likely to experience difficulties with core subjects such as reading, writing and math. Meanwhile, relatively few with learning disabilities or ADD/ADHD are receiving treatment/interventions to address the difficulties they face. This suggests that effective educational strategies and support systems for pupils with disabilities, their teachers and families need to be made more widely available. It would make sense if these strategies and systems were to reflect the culture of inclusiveness that seems to be evident in community life more generally.

Research into various combinations of long-term health conditions and into combinations of those conditions that result in activity limitations would be useful in shedding light on health complications and other difficulties First Nations youth experience. Analysis of the causes of those conditions (e.g., congenital, environmental factors, injury or accidents) would also be helpful.

Parents, educators and others responsible for sexuality programs and social service providers who have contact with youth with disabilities should be cognizant of the fact that, while these youth may not be as sexually active as their counterparts without disabilities, a significant proportion is sexually active. Particular attention may be needed to safeguard the sexual health of young women with disabilities, who are more sexually active than their male counterparts. Further analysis is also needed of the numbers of sexual partners, birth control and protection methods, and measures to avoid contracting sexually transmitted diseases.

Such analysis is possible based on the RHS data but was beyond the scope of the present chapter.

Family members, educators and other adults could bolster the generally lower self-esteem of First Nations youth with disabilities through encouragement and positive messaging. As well, these youth' lower sense of personal mastery and control could be addressed by ensuring that they have opportunities and the supports needed to exercise their self-determination and to develop their personal sense of empowerment and self-agency.^{xvi} 6 7 8

Also needing attention is the more widespread loneliness, stress, depression and proneness to contemplate suicide among youth with disabilities. While these difficulties are not epidemic, they are fairly common and can be very challenging for young people and their families to contend with. Families may need information on how to help young people manage these difficulties and educators and social/health service providers may need to be sensitized. Youth may need information about, and better access to, supportive counselling and other mental health services. Youth with disabilities no doubt have a role to play as self-advocates in telling others how they are feeling and why. Analysis of the availability of companionship, assistance, guidance and other kinds of support to First Nations youth with and without disabilities would also be useful and is feasible based on the RHS but was beyond the scope of the research for the present chapter.

Notes to Chapter 19

1. Social Development Canada, *Advancing the Inclusion of Persons with Disabilities*, 2004 (Ottawa, Ont.: Social Development Canada, 2004), p. 9 and Endnote 14.
2. Statistics Canada, *2001 Participation and Activity Limitation Survey: A Profile of Disability in Canada, 2001—Tables* (Ottawa, Ont.: Minister of Industry, 2002), Tables 3.1 and 10.1.
3. Statistics Canada, *2001 Participation and Activity Limitation Survey A Profile of Disability in Canada, 2001—Tables*, Table 10.1.
4. MedicineNet.com, *Tuberculosis (TB)* [online]. Cited 11 October 2005. Available from World Wide Web: <<http://www.medicinenet.com/tuberculosis/article.htm>>.
5. SDTAC, *Self-Determination Technical Assistance Centers* [online]. Cited 14 October 2005. Available from World Wide Web: <http://www.sdtac.uncc.edu/project_description.asp>.
6. M. L. Wehmeyer, *Research Highlights, Topic: Self-determination* [online]. [Lawrence, Kan.]: Beach Centre on Disability, University of Kansas, 2001. Cited 14 October 2005. Available from World Wide Web: <<http://www.beachcenter.org/Research%5CQuickDownloads%5CQckSD14Turnbull2001.pdf>>.
7. J. W. Conroy et al., *Outcomes of the Robert Wood Johnson Foundation's National Initiative on Self-Determination for Persons with Developmental Disabilities—Final Report on 3 Years of Research and Analysis* (Narberth, Pa.: Center for Outcome Analysis, 2002).

^{xvi} There is a large and growing literature on self-determination and disability. The Self-Determination Technical Assistance Centers project at the University of North Carolina at Charlotte provides research and other resources, as does the Beach Centre on Disability at the University of Kansas, the Robert Wood Johnson Foundation, the Center for Outcomes Analysis in Narberth, Pennsylvania and a range of other organizations and Internet portals.

Chapter 20

Injuries

Abstract

Injury rates are higher in youth than in any other age group, and the Regional Health Survey (RHS) results show that First Nations youth are at much greater risk than others in Canada. The most common causes of injury in First Nations youth were falls, sports, motor vehicle crashes, and bicycle accidents that frequently resulted in cuts or scrapes, sprains or strains or fractures were frequent results. The findings also indicate certain groups that should be the target of prevention efforts. Risk was higher in males, and in youth who frequently participated in sports or other extracurricular activities. Injury also appeared to be associated with a series of “personal problems” indicators personal problems: depression, low self-esteem, problems learning at school, recently loss due to suicide of someone close, and drinking.

Introduction

Injury rates are higher during adolescence than at any other time. Figures for both First Nations and other youth in Canada show that injuries are more common in teenagers than in other age groups, and are by far the leading cause of death at this age.^{1, 2, 3} Injuries can be *unintentional* (falls, sports or car crashes) or *intentional* (suicide, self-injury, assault or homicide).

Injuries typically involve a complex interaction of factors. These factors may operate at the societal level (e.g., cultural norms that support violence); at the community-level (e.g., unsafe recreational areas, easy access to firearms, low rates of seatbelt use); at family level (e.g., insufficient supervision); or at individual level (e.g. risk-taking behaviour, alcohol abuse).⁴

Although injuries are a problem for youth throughout Canada, evidence suggests that First Nations youth are at higher risk than others. Figures from the mid-1990s show that at that time, the injury death rate for First Nations teenagers (15-19) was triple that of other youth (176 versus 48 per 100,000).⁵ Available data from the RHS suggests that the picture has improved but not changed substantially since that time.

Although injury *death* rates have long been collected for First Nations, there has been no information on the lesser day-to-day injuries that do not result in death or hospitalisation. The RHS fills this gap. The survey asked about any injury in the preceding year that was serious enough to require care from a health professional. This chapter presents the resulting information on the types of injuries youth that are experiencing and what caused those injuries. It also presents information on which youth are at greatest risk, considered under three headings: characteristics of the teenager, characteristics of the family, and characteristics of the community.

Interpretation methods

The RHS asked three sets of questions on injury. The first set focused on the *nature* of injury: youth were asked if, in the year prior to the survey, they had experienced any of a list of injuries such as major cuts, sprains, broken bones, or concussion. Each of these questions was answered with “yes” or “no,” so the resulting numbers reflect *how many youth experienced* a given type of injury, rather than how many injuries happened in total. The different types of injury are not mutually exclusive and some respondents might have been injured more than once during the year.

The second set of questions asked about the *causes* of injury, such as falls or car crashes, etc. Again, these were yes/no questions. For each “yes” answer, a follow-up question asked if the incident was alcohol-related. Because of the way the questions were structured, some assumptions had to be made

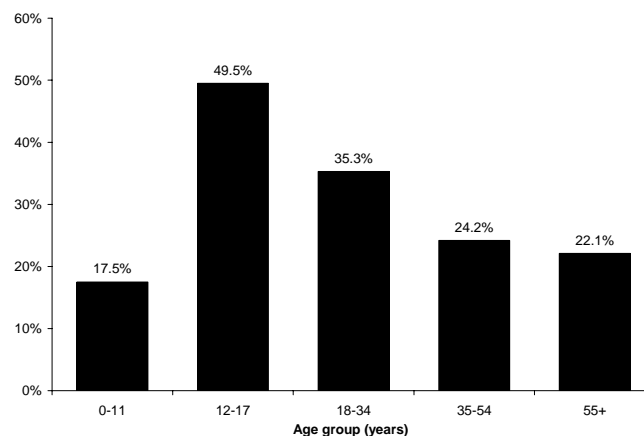
when analysing the alcohol responses. Many people refused the alcohol questions (under-reporting is likely because of the stigma associated with alcohol use). In short, the numbers on alcohol involvement should be treated as estimates only.

Results

Nature and causes of youth injuries

Injuries are extremely common in First Nations youth: half (49.5%)ⁱ indicated that they had been injured in the previous year. This was a much higher proportion than in any other age group (Figure 1). It was also almost double the rate for other youth in Canada and for First Nations youth living off-reserve. Figures from the Canadian Community Health Survey (CCHS) show that across Canada, 23.5% of adolescents (age 12-19) were injured in 2003.⁶ The figure for First Nations youth living off-reserve was similar, at 26.3%.ⁱⁱ⁷ This comparison, though should be interpreted cautiously as the survey questions differed: the RHS asked about injuries serious enough to require medical attention, while the Canada-wide figures are for injuries “serious enough to limit normal activities.” A follow-up question on the Canada-wide survey did ask if the person had or had not seen a doctor about their activity-limiting injury. Most of the available, published analyses do not present this breakdown. In the one case in which it is available, the figures show that only about half of Canadians who sustained an activity-limiting injury consulted a doctor about it. This suggests that if the comparison to First Nations were based solely on people who had seen a doctor about their injury, the gap between the First Nations and Canadian figures would be even wider (Figure 2).

Figure 1. Injury rates by age group: First Nations, 2002-03

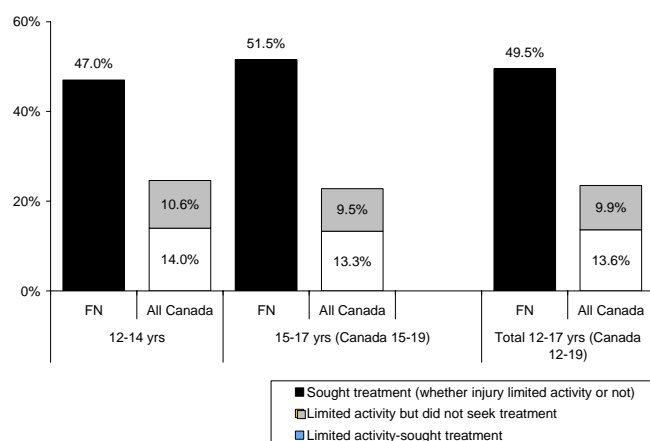


* All differences are statistically significant except between the two oldest groups.

ⁱ To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

ⁱⁱ This figure is for Aboriginal youth living off-reserve in the provinces (only) in 2001 and 2003 combined.

Figure 2. Proportion of youth injured in the past year: First Nations (2002-2003) compared to Canada as a whole (2003), by age group



* Note that the RHS figures are for injuries serious enough to require medical attention, while the Canada-wide figures are for injuries that limit normal activities, with a further distinction according to whether or not the person sought medical attention.

Source: Canada-wide figures from the Canadian Community Health Survey.⁸

The most common injuries reported to the RHS were cuts, scrapes or bruises, followed by sprains/strains, and then by fractures. These injuries were typically caused by falls and/or by sports. Motor vehicle and bicycle accidents were also common.

Table 1. Proportion of youth reporting various types of injuries (n=4983)

Nature of injury	% of youth
Cut, scrape or bruises	34.8
Sprain or strain	21.6
Broken bone, fracture	15.8
Burn or scald	12.6
Hypothermia, frostbite	6.6
Dental injury	4.3
Dislocation	4.0
Concussion	3.7
Accidental poisoning	0.8
Injury to internal organ	0.8
Any type(s) of injury *	49.5

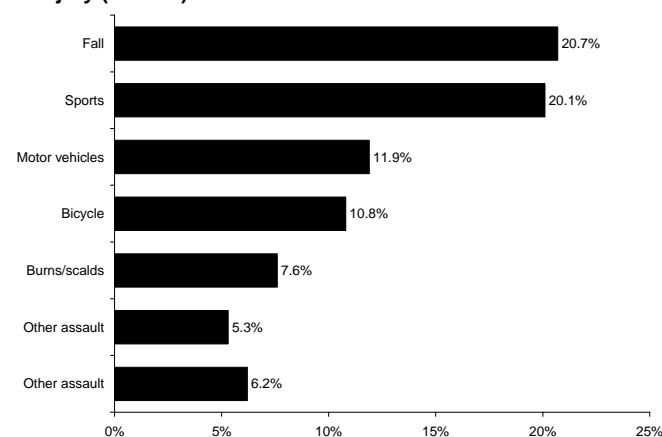
* Note: Respondents could report more than one type of injury, so the number shown for "any type of injury" is not a total of the categories above.

Gender

In adulthood, men are more likely than women to be injured. The RHS results show the same pattern in youth: injury rates were significantly higher for young men than young women, (53.1% vs. 45.5%.ⁱ), although this did not hold true for all

types of injury. Young men and women were about equally likely to experience burns or scalds, hypothermia, dental injuries, or cuts, scrapes and bruises. However, young men were significantly more likely to experience fractures, dislocations, sprains/strains, and concussions. This pattern may be at least partly attributable to males being more likely to engage in sports. Much of the difference between the male and female injury rates is due to just two causes: males' higher rates of sports injuries, and of bicycle injuries in males. The sexes do not differ significantly in their propensity to be injured by other causes such as falls, motor vehicle crashes, or burns/scalds.

Figure 3. Proportion of youth who experienced various causes of injury (n=4983)



* "Motor vehicle" includes cars, trucks, ATVs, snowmobiles, and collisions between motor vehicles and bicycles.

Age

The RHS results suggest that older teenagers are at greater risk of injury than younger ones—which is consistent with patterns observed among Canadian youth in general.⁹ The overall injury rate in 15-17 years olds is somewhat higher than in children 12-14, although the difference is not large enough to be statistically significant. For certain causes of injury, however, the difference *is* significant: older youth are at greater risk of motor vehicle crashes in which the youth is the driver, of assault, and of burns/scalds. The motor vehicle crash rates no doubt reflect the early years of driving experience, and higher assault rates at this age may reflect factors like drinking behaviour.

Balance and mental health

Mental health can be expected to affect risk-taking behaviour, so it is interesting to examine whether various indicators of good mental health are related to injury rates. Some feelings that one would expect to be associated with injury (a perception of being "in balance" in life, and the belief that one's life is under one's control) were not

ⁱ Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered

significantly different if their confidence intervals do not overlap (95% confidence level).

significantly related to injury rates. On the other hand, injury rates correlated strongly with depression (having felt depressed, sad or blue for two weeks or longer in the previous year) and with the youth's level of self-esteem.

Table 2. Proportion of youth injured, by occurrence of depression and by level of self-esteem (n=4983)

		% of youth injured
Felt depressed, sad or blue for two weeks or longer in the past year	Depressed	62.3
	Not depressed	45.0
Self-esteem	Poor	70.1
	Good	48.6

Activities

The type and number of activities that a youth engages in could be expected to affect injury rates in several ways. First, sports and injuries tend to be related.¹⁰ Second, involvement in groups and activities, and a feeling of belonging, tend to be associated with good mental health.¹¹ This can have an affect on injuries related to mental health (for instance, in some areas, church attendance has been found to be inversely related to suicide attempts).¹² The RHS results suggest that despite their desirable effects, sports and participation in extracurricular activities both raise the risk of being injured. Youth who frequently participate in sports are more likely to be injured than those who are less sports-oriented, and youth who engage in extracurricular activities (which can include sports) are more likely to be injured than those who do not.

Table 3. Proportion of youth injured, by frequency of physical activity and extracurricular activities (n=4766)

		% of youth injured
Physical activity	Three times a week or less	44.4
	Four or more times a week	53.3
Extracurricular activities (sports, dance, music, jobs)	Low participation*	41.4
	High participation*	50.6

* "High participation" is defined as engaging at least once a week in *one or more* sports teams or lessons; art or music groups or lessons; traditional singing, dancing, drumming groups or lessons; jobs such as babysitting, working at a store, or tutoring. "Low participation" defined as doing these things less than once a week.

School experience

Interestingly, injury rates were not associated with whether the youth was attending school, or whether he or she liked school.¹ However, youth who said they were having problems learning at school were significantly more likely than others

to report an injury (55.3% versus 44.7%). One possible explanation is that problems in the home environment are showing up both in difficulties at school and in other behaviours that affect a youth's risk for injury.

Use of alcohol and drugs

Alcohol clearly raises the risk for several different types of injury, including falls, car crashes, and violence. Over all, alcohol was said to have played a role in 6.4% of all the injuries that youth reported, but it was involved in fully 27.1% of the assaults.

Half of all youth reported having had a drink of alcohol in the past year, and those individuals were more likely than others to report having been injured (56.0% vs. 44.6%) — although part of this may be because both alcohol use and injuries tend to be more common in older youth. Unexpectedly, injury rates did not differ significantly between youth who "binged" frequently (had five or more drinks at a sitting, once a month or more) and those who never binged, or did so less than once a month. Drug use was less common than alcohol: a third (33.4%) of youth had used an illegal substance at least once in the past year. Injury rates were considered the same in youth who used drugs as in those who did not, because the difference did not quite reach statistical significance at the thresholds established for this report. It seems likely that a larger sample may show a statistically significant difference.

Injury risk and family characteristics

Family characteristics and living situation seem likely to affect a youth's risk of injury. This analysis looked at three aspects of the family situation:

- whether or not the youth's mother had attended a residential school;
- living situation (whether the youth was living with at least one biological parent; with other family; or in some other arrangement such as with step-parents, foster parents, a boyfriend/girlfriend, or in a boarding home); and
- emotional support (whether the youth who had someone to talk to, confide in, or count on in case of need "all the time" or not).

None of these factors was significantly related to injury rates.

Injury risk and community characteristics

None of the community characteristics appeared to be associated with youth injury rates. That is, neither community size nor its degree of isolation nor transfer status seemed to affect injuries.

Suicide can be an indication that a community is having problems, and it is possible that high rates would go along with other risky characteristics such as elevated levels of

¹ Note that in any case there was little variation on these dimensions: 90% of all youth said they were attending school, and 82.3% liked school either "somewhat" or "very much."

alcohol abuse or violence in the community. Alternatively, having someone close commit suicide might increase a youth's likelihood of indulging in unsafe behaviours, or might lead to depression and other risk factors. Whatever the reason, youth who report that a family member or close friend committed suicide in the past 12 months are significantly more likely than others to report having been injured themselves.

Table 4. Proportion of youth who were injured, by suicide of friend/family

		% of youth injured
In the past 12 months, has a close friend or family member committed suicide?	Yes	64.5
	No	45.4

Discussion

Two points stand out clearly in the RHS results. The first is the extremely high injury rates in youth as compared to other age group. The second is how much higher the rates are for First Nations youth living on-reserve than for Canadian youth in general, or for First Nations youth living off-reserve. The size of the gap highlights the magnitude of the impact that preventive measures could have.

Preventing the most common injuries

Until now, most of the existing information on injuries has been drawn from records of hospitalization and death. The RHS results provide the first opportunity to look at the day-to-day injuries that happen to youth and they show quite a different picture. Mortality statistics point clearly at motor vehicle crashes and suicide as the main causes for youth. Nonetheless, the RHS results show that attention also needs to be paid to causes such as falls, sports, and bicycle crashes.

Some of these injuries might be prevented by modifications to the environment. For instance, injuries from falls can happen when youth fall from bleachers or fences, trip over objects, or step into holes.¹³ Some of these falls can be prevented by attention to the surface of playing fields and playgrounds,¹⁴ and by modifications such as installing guardrails in arenas. Many sports injuries can be prevented, or made less serious by using protective equipment and enforcing rules on fair play. Helmets are demonstrably effective in reducing the risk of head injury in a variety of sports, including rollerblading, skateboarding, cycling, skiing, snowboarding, tobogganing, and riding ATVs or snowmobiles.¹⁵ A comprehensive review of the evidence on injuries incurred in football, rugby, and hockey suggests that using mouth guards, and enforcing the rules on “fair play” and on illegal types of blocks and tackles can decrease injury rates considerably.¹⁶

There has been considerable research on how to prevent motor vehicle crashes in new drivers, with the common theme being the need to reduce speeding and driving under

the influence of alcohol. The research has identified certain measures that do—and do not—work. Specifically, the results suggest that, as the Insurance Institute for Highway Safety succinctly puts it, “Education alone almost never changes driver behaviour.”¹⁷ Media campaigns to encourage safe driving apparently have little or no impact,¹⁸ and surprisingly providing driver education produces no reduction in the likelihood of young drivers’ being involved in a crash or having traffic violations.^{19, 20} However, education seems to be useful if it is part of a larger package of mutually reinforcing strategies to change driving behaviour,²¹ such as enforcing the laws on legal drinking age or taking action on speeding. Other interventions that are known to work are graduated licensing and random checkpoints. Seven provinces and one territory currently have graduated-licensing schemes that have appreciably reduced the number of collisions in novice drivers.²² In Europe, checkpoints (random checks of drivers’ blood-alcohol levels) have been shown to decrease traffic fatalities by 16-29%.²³

There is less research on how best to prevent bicycling injuries. Many of the existing studies focus on how to increase the use of bicycle helmets, which are estimated to be 85% effective in protecting cyclists against head injuries.²⁴ The evidence suggests, once again, that multifaceted interventions—such as a combination of bicycle rodeos, media campaigns and helmet discounts—work better than any one initiative taken alone.²⁵ Changes to regulations, such as requiring helmets for bicycle races, or on school grounds, may also help.²⁶ Much less attention has been devoted to aspects other than helmet use. Some jurisdictions have introduced bicycle paths, or widened the shoulders on roadways, but there is no information on whether this has helped to reduce injuries.²⁷ Other logical measures include making sure that bicycles are well maintained and the appropriate size for the rider, and using reflectors, reflective clothing, and lights at night.²⁸

Recognizing the connection between injury and the youth's situation in their life

Besides identifying the most common causes of injury in youth, the RHS results also show that certain groups of youth are at greater risk than others. Although most of the family and community characteristics examined in this analysis were not clearly related to youth's risk for injury, some of the youth's characteristics seemed to be strongly correlated with injury risk. As is typical in injury statistics, males were at greater risk than females. Older youth were at greater risk than younger ones for particular types of injury, especially motor vehicle crashes and assault. And despite their benefits, frequent participation in sports and extracurricular activities clearly raised a youth's likelihood of being injured.

Beyond the predictable differences by sex, age, and activity level, the RHS results point to a more troubling conclusion.

Youth who are struggling with personal problems are far more likely than others to be injured—whether the injury is an intentional one (such as an assault), or an unintentional one (such as a bicycle accident or a fall). Injury rates were significantly higher for youth who were depressed, had low self-esteem, or had a close friend or family member commit suicide in the past year. They were also higher in youth who reported having problems learning at school. Finally, rates were higher for those youth who reported drinking alcohol. All of these things suggest that injury risk in youth is tied to a broader constellation of personal and social problems.

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Chapter 21

Dental Care and Treatment Needs

Abstract

This chapter reports results of the 2002-03 First Nations Regional Longitudinal Health Survey (RHS) in the areas of dental care and treatment needs of the First Nations youth population in Canada (aged 12-17 years). Nearly 79 percent of the respondents received dental care within the past year – a rate very similar to that of the Canadian population for this age cohort. The need for cavity fillings or other restorative work was reported by 36.6% of the participants and the need for maintenance was reported by 42%. Overall, 19.1% of Aboriginal youth experienced some dental pain in the past month. The prevalence of dental injuries was 3.7% for among 12-14 year-olds and 4.8% among 15-17 year-olds. Community isolation and health transfer status are factors in the reported high levels of restorative dental treatment needs that were reported. However, significant associations were found between the prevalence of dental pain in First Nations youth (12-14 years old) and a number of other factors including: their parents' attendance at residential schools, the participant's self-ratings of general health and emotional well being, performance at school, levels of self-worth and self-determination, and depression. Taken together, these findings confirm the serious effects of societal stress on the dental care needs of the current generation of First Nations youth.

NOTE: Due to spacing issues, the tables associated with this chapter can be found at the end of the chapter.

Introduction

Current data documenting the oral health of First Nations youth are very limited. The data that are available for Canadian Aboriginal youth and Native American youth generally present a picture of oral health that is poorer than that of non-Aboriginals in North America. Data on the oral health of American Indians and Alaska Natives are available through periodic surveys conducted by the Indian Health Service (IHS). These surveys cover the population residing on reservations where services, including dental services, have been provided by the IHS or contracted to tribes or urban American Indian/Alaska Native organizations. The HIS findings revealed substantial unmet dental needs and quality of life issues related to the experience of dental pain among schoolchildren and adults.¹⁻⁸ For some groups of American Indians, diabetes and high rates of tobacco and alcohol use are prevalent and continue to contribute to poor oral health.⁸⁻¹⁰

Oral diseases are also common in First Nations and Inuit and Métis youth living in Canada. Large amounts of dental needs go unmet each year. It is estimated that 95-100 percent of Aboriginal youth will have had a cavity by the age of 17 years, while the severity of oral diseases, as expressed by the mean number of decayed, extracted and filled permanent teeth (DMFT) index, ranges from 4.1 to 8.5 in 12 to 15-year-old First Nations children,¹¹⁻¹⁵ and was 7.8 in Northern Labrador Inuit aged 15–22 years.¹⁶ It should also be noted that regional oral health surveys of Aboriginal children and youth in Canada conducted before 1988 showed variable but overall higher rates of dental caries than studies conducted after 1988.¹⁷⁻²⁶ The decline has by no means been striking, but at the same time, rates of oral diseases, especially dental caries, remain disproportionately higher in Aboriginals than in non-Aboriginals. These high rates remain despite the Non-Insured Health Benefits (NIHB) program from the First Nations and Inuit Health Branch (FNIHB) of Health Canada which provides payment for a comprehensive list of preventive and dental treatment services, including orthodontics. Dental benefits ranked third among NIHB expenditures in 2003/04, at \$134.5 million, following NIHB expenditures on transportation and pharmacy benefits.²⁷ Statistics on the use of dental benefits show that only 35% of the 750,000 registered First Nations and Inuit population received at least one dental procedure paid through the NIHB program in 2003/04. Approximately one-quarter of all dental claimants were between 10 and 19 years of age. Expenditures on restorative services (fillings, crowns, etc.) were the highest of all dental sub-benefit categories at \$42.8 million in 2003/04.²⁷

While the NIHB program has removed some of the financial barriers to dental treatment, the reasons for the under-utilization of dental benefits by Canadian First Nations and Inuit are complex and are in part the result of social factors that impede access to dental care. This chapter compares the characteristics of First Nations youth who reported that they had received dental care in the preceding year to the characteristics of and those who did not using data from the First Nations Regional Longitudinal Health Survey (RHS) conducted in 2002/03. While data on access to dental care is important, it is also essential to document the level of unmet dental care needs. Therefore, this chapter also examines RHS results regarding types of dental treatments or procedures that First Nations youth perceive that they require and the prevalence of dental pain and dental injuries in this cohort. Dental pain or toothache is consistently associated with untreated cavities among lower socioeconomic groups owing primarily to reduced access to care among this sector of the population.²⁸ However, the underlying reasons for the high prevalence of physical injuries, including dental injuries, in First Nations and Inuit youth have been more difficult to determine.²⁹

Interpretation Methods

Data for 4,983 youth aged 12 to 17 years were used from the second Canadian National First Nations and Inuit Regional Health Survey (RHS) collected in 2002/03. The previous First Nations and Inuit Regional Health Survey (FNIRHS) was conducted in 1996/97 and included questions on health services and dental care. While some data pertaining to children and youth were collected in the FNIRHS, the dental care questions which are of particular interest in this chapter were asked only of adults, (i.e., persons 18 years of age and older).³⁰ This chapter compares RHS data with content related to age-specific dental consultations/visits and content in the 2003 Canadian Community Health Survey (CCHS; $n = 3,316,567$)³¹ and the National Population Health Survey of 1996/97 (NPHS; $n = 2,284$).³²

The dental care questions asked the youth about the last time they obtained dental care, what type of treatment they currently perceived themselves to need and if they had experienced any dental pain or problems with their teeth in the previous month. A dental injury that had occurred in the past 12 months and required the attention of a health care professional was also one of the dependent variables selected for analysis. Other independent variables included some of the determinants of health, such as individual characteristics (e.g. gender and education), lifestyle factors (e.g. smoking and drinking), and ecological determinants (e.g. geographic isolation and health transfer status of the community where the respondent resides). Other questions were selected as independent measures, including the respondent's last instance of consulting a traditional healer, self-ratings on general health status, emotional and social well being,

instances of suicidal ideation and attempts and the attendance at residential schools by their parents and/or grandparents.

The analysis and process used to interpret the data were based on the RHS Cultural Framework, in which the meaning of First Nations health and well-being is understood in its broadest sense as “the total health of the total person within the total environment.”³³ In view of this holistic definition of health, the dental care and treatment needs of First Nations youth are presented in relationship to a First Nations vision of their broader health. This vision aspires to keep individuals free of disease while considering the broader community context, including the provision of a variety of health services to all community members. In this view, oral health is included as an integral component of overall health and well being.

Results

Dental care utilization

“Time since last dental visit” or “time elapsed from when an individual last received any dental care” are standard measures used to document patterns of access to dental care. In the 2002/03 RHS, the response options to this question were:

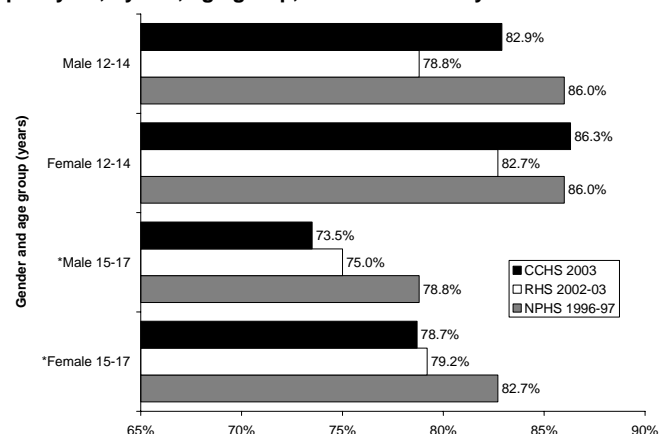
- Less than 6 months ago
- Between 6 months and 1 year ago
- Between 1 and 2 years ago
- Between 2 and 5 years ago
- More than 5 years ago
- Never

The corresponding population-weighted responses were: 48.9%,ⁱ 29.7%, 12.4%, 5.8%, 1.3%, and 1.8%. These results indicate that nearly 79% of First Nations youth received some form of dental care within the past year. When results from the RHS 2002/03 are compared to findings from the CCHS 2003, it is evident that the numbers of First Nations youth receiving dental care in the preceding year were on par with those for the general Canadian population aged 12–17 years (Figure 1). The NPHS 1996/97 reported a higher percentage of males aged 15–17 making a dental visit in the preceding year than the RHS 2002/03ⁱⁱ and the CCHS 2003.

The receipt of dental care by age group and selected characteristics of the respondents is presented in Table 1. 15–17 year-olds, youth with one or more parents that had attended residential school were more likely to have received dental care in the previous year compared to youth whose parents had not attended residential school. Youth aged 15–17 who had consulted a traditional healer within the last 12 months were more likely to have received dental care in the previous year compared to those who never consulted a

healer. Moreover, older youth who reported themselves to be in very good or excellent health are more likely than those reporting good health to have received dental care in the previous year.

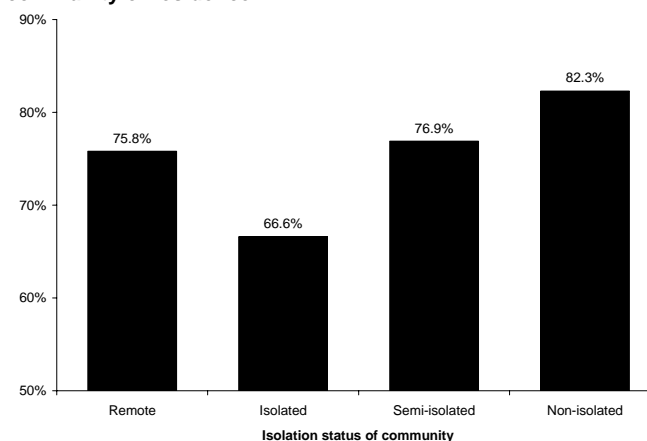
Figure 1. Proportion of youth who received dental care in the past year, by sex, age group, and health survey



(*12-19 years in the Canadian Community Health Survey, 2003)

Dental care also varied by the isolation status of the community where the youth resided. Youth living in isolated First Nations communities were significantly less likely to report the receipt of dental care in the year before the survey than those living in non-isolated communities (Figure 2). The isolation status (remoteness factor) of the respondent's community of residence was based on 2002 data provided by FNIHB (Health Canada), and on that agency's classification of community isolation (remote isolated = no scheduled flights; isolated = flights, good telephone service, no road access; semi-isolated = road access greater than 90 km to physician services; non-isolated = road access and less than 90 km from physician services).

Figure 2. Proportion of First Nations youth aged 12 to 17 years who received dental care in the past year by isolation status of community of residence



ⁱ To simplify the text, confidence limits are not reported for overall youth estimates unless the coefficient of variation is greater than 33.3%.

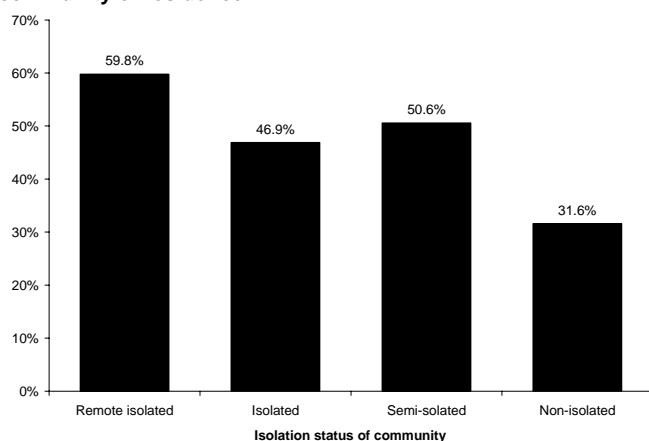
ⁱⁱ Comparisons between groups reported in this chapter are statistically significant except where “NS” —not significant— is noted. For this chapter, differences are judged to be significant if the Bonferroni-adjusted 95% confidence intervals do not overlap.

Dental treatment needs

“Time since dental care was last received” is a useful indicator of inequity in access to care. Nevertheless, it is of limited value unless accompanied by information on the types of treatments or dental procedures people actually receive when they see a dental care provider. First Nations youth who needed dental treatment were also asked to specify the kind of dental care they required. The results shown in Table 2 reveal that the most common treatments required were maintenance work (check-ups or teeth cleaning) and dental fillings or other restorative work such as crowns and bridges. These were followed by fluoride treatment and tooth extractions. Relatively few youth mentioned periodontal (gum) work.

Because oral diseases are prevalent among Aboriginal populations and are not necessarily resolved over time in the absence of intervention, the “need for fillings and other restorative work” was used as an indicator of unmet dental treatment needs. As anticipated, those living in non-isolated communities were also significantly more likely to have had their cavities treated by dental health professionals than those living in isolated communities (Figure 3).

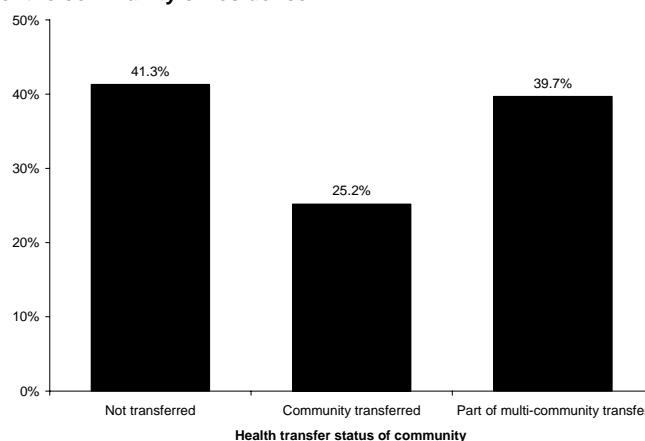
Figure 3. Need for dental fillings or other restorative work in First Nations youth aged 12 to 17 years by isolation status of community of residence



A significant relationship was also found between the transfer status of the community and the rates of cavity fillings. Youth living in communities that have engaged in the health transfer process are less likely to have had their cavities filled than those in communities that have not been part of a transfer agreement or those who are part of a multi-community agreement (Figure 4). The “Health Transfer” process began in 1989 as part of Aboriginal self-determination and social development³⁴ when First Nations and Inuit health programs and services from Medical Services of Health and Welfare Canada (now Health Canada) were transferred to First Nations and Inuit control. Information on the Health Transfer Status of the community in which the respondent resides, was based on August 2002 data from FNIHB (Health Canada). According to the

FNIHB’s classification, a community designated as “not-transferred” is a community that is not part of a health transfer agreement; a ‘transferred’ community is one that has responsibility, through a “Health Transfer” for primary and/or secondary and/or tertiary services; a ‘multi-community transfer’ is a community that is part of a multi-community health services transfer agreement for primary and/or secondary and/or tertiary services.

Figure 4. Need for dental fillings or other restorative work in First Nations youth aged 12 to 17 years by health transfer status of the community of residence



Dental pain

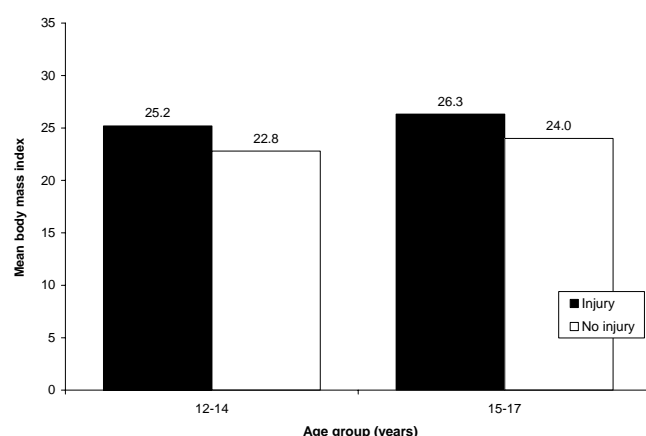
Respondents were asked whether they experienced any dental problems or pain in the past month. Dental pain or *toothache* is largely a result of untreated deep cavities that progress to the dental pulp and can lead to acute pain symptoms. Acute dental pain can be disabling, affecting eating, sleeping and other aspects of everyday life. Studies have shown that dental pain is greatest in populations with reduced access to care, such as children in lower socioeconomic groups or those living in poverty.^{28,35} In the RHS, a relatively sizeable percentage of the total sample of youth had a recent episode of dental pain (19.1%). Table 3 shows the characteristics of First Nations youth who experienced dental problems or pain in the month previous to the survey. The prevalence of dental pain was somewhat higher in females. Among 12–14 year olds, parental attendance at residential schools was associated with higher rates of dental pain than for those whose parents did not attend residential school. Among 15–17 year-olds, youth reporting excellent (15.5%) or very good (19.4%) health status are less likely than those in poor health (58.8%) to report dental pain or problems with their teeth. In addition, significant associations were found with smoking, poor performance at school, and the participant’s levels of self-worth, self-determination, their emotional well being and depression.

Dental injuries

There are probable linkages between dental injuries body mass and diet. To explore these links and to find out the prevalence of dental injuries in the First Nations population, the question on dental injuries from the RHS was analyzed according to age group and cause of injury. The prevalence of dental injuries was 3.7% for 12–14 year-olds and 4.8% for 15–17 year-olds. These findings are comparable to the prevalence of the more severe types of traumatic dental injuries reported in Grade 8 children in Ontario.³⁶

High rates of Type 2 diabetes and obesity in Aboriginal children and youth have also increased as a result of a non-traditional diets and lack of physical activity. It has been suggested that schoolchildren who frequently play sports and lively games are less obese and also more agile and, for this reason, less prone to trauma if they fall while engaged in these activities.^{37, 38} The relationship between obesity and traumatic dental injuries was evaluated by comparing the mean Body Mass Index (BMI) scores of youth with dental injuries to those of youths without dental injuries (Figure 5). The results confirm the hypothesis that the mean BMI is higher among youth also reporting recent dental trauma. This is only evident among youth between the ages of 12 and 14.

Figure 5: Mean body mass index (BMI) scores for First Nations youth by age group and dental injury experienced in the past 12 months



Conclusions

Survey data indicated that the receipt of dental care was high among First Nations youth and was comparable to the national rate for Canadian youth. Nonetheless, the findings also point to a pattern of dental care that remains episodic and symptomatic, with care usually being undertaken for emergency rather than preventive reasons. Evidence in support of this statement comes from the RHS findings related to the dental treatment needs of youth. The questions on the need for cavities filled, maintenance work and extractions provide valuable insights into the differences in the patterns of treatment received. Among respondents who needed dental treatment, the majority reported needing

restorations and/or maintenance with a minority reporting the need for tooth extractions. Dental pain, an indicator of the need for urgent care and a good predictor of tooth loss, was reported by 19.1% of the respondents. These findings reflect other research suggesting that partial or complete tooth loss remains a substantial problem in adult Aboriginal dental patients in both Canada and the U.S.³⁹⁻⁴³ While periodontal disease becomes the major indicator for tooth extraction among the older cohort, acting more quickly on symptoms like dental pain in youth can result in less frequent complication as youth reach adulthood.

The introduction of Health Canada's NIHB program in the late 1980s has led to changes in treatment patterns. There was an immediate increase in fillings and denture treatments soon after the program was instituted.^{44, 45} Since that time, the rate of surgical procedures has remained high, with preventive procedures making up a smaller proportion of the total care provided under the program. This may, in part, be due to the program's primary mandate which had focused on restorative treatment. In addition, manpower shortages in Canada's north have led dental therapists to perform extractions, restorations and preventative procedures in remote and under-served areas serviced by the Medical Services Branch of the Canadian Federal Government.⁴⁶⁻⁴⁸ Recent data from the NIHB program database on fee-for-service dental expenditures by type of service indicate that treatment patterns are beginning to move away from extraction in favor of more restorative care, but that preventive oral health care continues to constitute a smaller fraction of the total care provided to the Aboriginal population.²⁷

It should be noted that the delivery of dental services to isolated communities remains a difficult undertaking.^{49, 50} Many variables impact on the effectiveness of dental care programs in Northern Aboriginal communities including: the ongoing problem of finding adequate numbers of dentists and dental hygienists to work in remote areas; the logistics of organizing travel and accommodations for health care workers and, problems associated with getting patients to the dentist when the workers are in the area. The RHS results showed that 'isolation' is related to "lack of receipt of dental care in the preceding year," and to the need for fillings in youth. Even for non-First Nations children, remoteness/isolation can be related to lack of access to care. For example, the oral health and treatment needs of children in Thunder Bay, a northern community in Ontario, were significantly worse than those of communities located in the southern part of the province.⁵¹ These differences by geographic location persisted after controlling for the age of the children in the areas studied.

The degree of isolation of an Aboriginal community can also affect food consumption patterns, particularly among youth who often make poor dietary choices. The cost of purchasing marketed food in northern communities remains high

because of high transportation costs (food is often transported by air). This also means that the variety and availability of nutritional foods can often be limited, leaving youth even more likely to eat an unhealthy amount of snack foods and soft drinks. In fact, soft drink consumption remains one of the major risk factors for tooth decay in children residing in First Nations communities and their dietary choices as children are very likely to influence their choices as youth⁵².

The degree of isolation and remoteness, which affects accessibility to health care services, and the availability and cost of food, is only *one* of the many risk factors for systemic and oral diseases in this population.

Interesting associations also were found between dental pain and youth personal wellness and mental health, and between dental injuries and BMI (among 12–14 year olds only). A thorough discussion of these associations is not offered here but suffice it to say that these findings are not surprising given the evidence that health in general, and oral health in particular, are products of multiple levels of influence that can include (but are not limited to) genetics, individual behaviors and social environment. Any combination of these factors can often result in poor systemic and oral health, which in turn impact negatively on an individual's quality of life. Unfortunately, the problems of youth violence, suicide and alcohol, solvent and drug abuse persist and continue to present First Nations communities with health challenges for the future. While these problems tend to dominate the headlines, declining levels of physical activity and increasing levels of obesity are also affecting the health of Aboriginal young people.

On a more positive note there have been a few new preventative oral health programs put into place in an effort to alleviate the high levels of oral disease in Aboriginal children and youth in Canada and the U.S.⁵³⁻⁵⁶ While these programs apparently have yet to reduce levels of dental caries to more manageable levels, inroads have been made towards reducing oral health inequities using population-based approaches to disease prevention such as water fluoridation. In some areas of the country, clinical dental personnel have been reoriented to devote an increased proportion of available patient care time to primary preventive services. Until holistic views affecting health and welfare (some of which have been noted above) are further articulated, it may take time before oral health is recognized as a *primary* health care priority for young First Nations people.

Notes to Chapter 21

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Table 1. Proportion of First Nations youth who had dental care in the previous year by age group and selected respondent's characteristics

Characteristic	12-14 years			15-17 years		
	Total <i>n</i>	Dental care <i>n</i>	Weighted %	Total <i>n</i>	Dental care <i>n</i>	Weighted %
Overall	2,087	1,706	80.7	2,490	1,910	77.0
Gender						
Male	1,006	800	78.8	1,229	911	75.0
Female	1,081	906	82.7 (NS)	1,261	999	79.2 (NS)
Mother and/or father was a student of a residential school						
Yes	545	446	79.5	778	615	83.2
No	1,268	1,048	81.5 (NS)	1,352	1,017	75.2
Last instance of consulting a traditional healer						
Within the last 12 months	180	155	88.4 (NS)	287	243	87.9
1-2 years ago	94	81	83.6 (NS)	139	114	86.2 (NS)
Over 2 years ago	74	53	69.2 (NS)	118	88	81.2 (NS)
I don't remember	188	156	82.9 (NS)	248	195	67.6
Never	1,385	1,117	79.3 (NS)	1,515	1,134	75.1
Reported general health status						
Excellent	587	491	86.0	466	383	82.6
Very good	728	600	80.3 (NS)	857	661	83.2 (NS)
Good	591	464	77.6 (NS)	859	637	70.2
Fair	130	107	73.3 (NS)	234	175	75.5 (NS)
Poor	14	12	82.7 (NS)	39	24	62.6 (NS)
Highest level of education the participant would like to attain						
High school diploma	476	362	71.3	617	435	68.9
College/CEGEP (in Québec) diploma	210	117	82.8 (NS)	288	235	84.5
Trade/technical/vocational school	91	77	85.5 (NS)	149	104	69.3 (NS)
University degree	697	586	83.0 (NS)	751	605	79.5 (NS)
Master's degree	242	202	88.8	285	235	81.7 (NS)
Doctorate degree	123	107	92.3	129	113	92.3

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 2. Reported types of dental treatment needs of First Nations youth by age group and gender

Current Dental Treatment Needs	Total	Male 12-14	Male 15-17	Female 12-14	Female 15-17
	(n=4,515)	(n=981)	(n=1,201)	(n=1,089)	(n=1,244)
Cavities filled or other restorative work	36.6%	31.7%	32.5% (NS)	38.6%	43.7% (NS)
Maintenance	42.0%	37.0%	42.0% (NS)	41.7%	46.6% (NS)
Extractions	6.1%	3.9%	8.2% (NS)	4.5%	7.2% (NS)
Fluoride treatment	12.9%	12.6%	9.2% (NS)	17.7%	13.5% (NS)
Periodontal work	1.4%	0.3%	2.2% (NS)	0.9%	1.7% (NS)

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 3. Proportion of First Nations youth who experienced problems with their teeth or dental pain in the past month by age group and selected respondent's characteristics

Characteristic	12-14 years			15-17 years		
	Total <i>n</i>	Dental pain <i>n</i>	Weighted %	Total <i>n</i>	Dental pain <i>n</i>	Weighted %
Overall	2,210	395	19.0	2,588	486	19.2
Gender						
Male	1,060	156	17.1	1,284	205	15.8
Female	1,150	239	21.1 (NS)	1,304	281	22.8 (NS)
Attendance of residential school by participant's mother and/or father						
Yes	565	130	26.6	779	161	19.4
No	1,340	200	15.4	1,410	255	20.7 (NS)
Attendance of residential school by participant's grandparent(s)						
Yes	880	190	21.3	1,112	227	21.9
No	692	91	15.4 (NS)	642	108	17.2 (NS)
Reported general health status						
Excellent	617	104	19.6	480	76	15.5
Very good	767	121	17.6 (NS)	912	148	19.4(NS)
Good	630	113	18.9 (NS)	882	175	17.4(NS)
Fair	138	37	21.9 (NS)	240	63	21.9(NS)
Poor	14	4	-	40	16	-
Current smoking status						
Not at all	1,694	250	17.0	1,166	179	17.2
Occasionally	197	53	32.8 (NS)	378	70	16.7 (NS)
Daily	270	81		995	230	23.7 (NS)
Repeated a grade in school						
Yes	674	156	27.3	1,206	287	25.4
No	1,510	233	14.9	1,324	193	12.8
Problems learning at school						
Yes	882	202	20.1	947	225	26.1
No	1,307	191	18.2	1,607	255	14.5

Characteristic	12-14 years			15-17 years		
	Total <i>n</i>	Dental pain <i>n</i>	Weighted %	Total <i>n</i>	Dental pain <i>n</i>	Weighted %
Level of agreement with self-worth statements (e.g. “In general, I like the way I am.”)						
Strongly agree	864	140	17.2	986	160	13.1
Agree	992	169	19.3 (NS)	1,124	213	20.1
Neither agree nor disagree	162	30	18.9 (NS)	262	52	16.4 (NS)
Disagree	73	18	-	97	30	46.4
Strongly disagree	22	7	-	29	7	-
Level of agreement with self-determination statements (e.g. “I often feel helpless in dealing with the problems of life.”)						
Strongly agree	103	22	-	164	43	43
Agree	524	116	22.4 (NS)	576	133	18.9
Neither agree nor disagree	430	75	13.7	537	105	18.4
Disagree	801	114	15.1	920	147	15.9
Strongly disagree	133	21	-	188	28	-
Ratings on emotional well being questions (e.g. “How stressed do you feel?”)						
Not at all	907	120	14.6	875	107	10.5
A little	721	131	16.0 (NS)	913	180	17.7
Moderately	155	39	33.1	262	60	22.9
Quite a bit	148	37	34.5	225	64	33.8
A lot	97	28	-	164	49	31.2
Ever felt depressed for 2 wks in a row						
Yes	472	142	32.2	704	199	28.9
No	1,565	210	14.2 (NS)	1,668	250	14.9 (NS)
Any attempts to commit suicide during participant’s life						
Yes, when I was under 12 years	36	11	-	34	17	-
Yes, when I was an Youth	44	13	-	182	60	36.8 (NS)
Yes, during the past year	36	9	-	70	19	-
Never	1,997	339	18.3 (NS)	2,176	361	16.4

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 4. Leading causes of dental injury in First Nations youth, by age group and relationship with alcohol and drug use.

Cause of Injury*	Age Group (12-14 yrs; <i>n</i> =2,253) (15-17 yrs; <i>n</i> =2,627)	Number of Participants Reporting Accident	Weighted % With Dental Injury (12-14 yrs, <i>n</i> =81; 15-17 yrs, <i>n</i> =119)	Number of Alcohol or Drug-Related Accidents	Alcohol or Drug-Related Accident Resulting in Dental Injury (Weighted %)**
Suicide attempt or self-inflicted injury	12 to 14	-	-	-	-
	15 to 17	31	-	-	-
Motor vehicle accident	12 to 14	37	-	-	-
	15 to 17	75	-	-	-
Physical assault (including domestic violence)	12 to 14	58	-	-	-
	15 to 17	127	-	47	-
Hunting accident	12 to 14	-	-	-	-
	15 to 17	-	-	-	-
All terrain vehicle (ATV) accident	12 to 14	43	-	-	-
	15 to 17	69	-	-	-
Sport	12 to 14	364	11.1	-	-
	15 to 17	520	10.8	-	-
Snowmobile accident	12 to 14	57	-	-	-
	15 to 17	89	-	-	-
Motor vehicle accident involving a pedestrian	12 to 14	-	-	-	-
	15 to 17	33	-	-	-
Fall or trip	12 to 14	434	11.5	-	-
	15 to 17	497	8.6	52	-
Motor vehicle accident (MVA) while riding a bicycle	12 to 14	107	-	-	-
	15 to 17	122	-	-	-
Bicycle accident not related to MVA	12 to 14	222	-	-	-
	15 to 17	217	-	-	-

*Multiple injuries accepted.

**Statistics have not been computed due to low cell frequencies.

- Data suppressed due to small cell size.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Chapter 22

Non-Traditional Use of Tobacco (Smoking), Alcohol, and Drug Use

Abstract

Among the youth respondents of the 2002/03 First Nations Regional Longitudinal Health Survey (RHS), 37.8% were current smokers. Smoking rates increased with age and females smoked more within certain age groups. Smoking initiation peaked at age 13 and then decreased. A full 70% of the sample reported trying to quit smoking at least once. Wanting a healthier lifestyle was the most frequent reason for quitting. Alcohol drinking also increased with age; it was reported among 42.2% of the youth. The illicit drug used most frequently was cannabis, at a rate of 32.7%. While cannabis use increased with age, distribution by sex was similar across users. In order to decrease the prevalence of these drugs, the authors recommend health promotion programs and interventions that are designed towards households and families, as opposed to individuals. This approach may increase awareness across all age groups, may prevent uptake among younger household members and may increase the number of smoke-free households.

Introduction

This chapter will present findings related to youth tobacco smoking, alcohol use and illicit substance use. Descriptive information, as well as some exploratory bivariate associations between the survey variables and youth smoking, alcohol and substance uses are illustrated to assess any modifiable risk factors and to highlight protective factors.

The First Nations Regional Longitudinal Health Survey (RHS) 2002/03 is the first national survey to examine First Nations youth living on-reserve. The previous 1997 First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS) did not contain a self-administered youth component. Instead, parents and/or guardians proxied on behalf of their children and youth. Having this separate survey for youth is a tremendous resource. In order to improve the health of First Nations youth, appropriate baseline data are necessary to monitor usage rates and behaviours. The RHS 2002/03 will now provide the data to achieve this through its longitudinal design.

Literature Review

Non-traditional tobacco use

Among the literature reviewed, rates of tobacco smoking among First Nations youth varied considerably. According to the Aboriginal Peoples Survey, the prevalence of tobacco smoking among Aboriginal youth was 54% among the 15–19 year olds and 65% among the 20–24 year olds. Inuit youth are more likely to smoke (73% in the 15–24 age group) compared to the Métis or First Nations youth (56% and 59% respectively in the 15–24 age group).¹ Data from the 2002 Youth Smoking Survey show that the prevalence of tobacco smoking among Canadian youth between Grades 5 and 9 was 23%, increasing from 7% in Grade 5 to 42% in Grade 9.² A sample of the survey's youth identified themselves as Aboriginal. Among them, 50.9% were never smokers and had never seriously thought of smoking (compared to 70.2% among the non-Aboriginal survey participants), 10.1% were never smokers, but had seriously thought of smoking (compared to 8.0%), 15.7% were considered puffers (compared to 10.0%), 17.6% smoked beyond puffing, but were not daily smokers (compared to 10.1%) and approximately 5.7% were daily smokers (compared to 1.6% among the non-Aboriginal survey participants). More recent data demonstrates in a slightly older sample of Canadian youth a tobacco-smoking prevalence of 20% among 15–19 year olds and 27% among 20–24 year olds.³ Overall, Aboriginal youth have an alarmingly higher smoking prevalence compared to other youth in Canada.

Alcohol and substance use

Literature on alcohol and substance use and behaviours among Canadian Aboriginal youth is limited. A matched

comparison of Aboriginal to non-Aboriginal students (n=128) between the ages of 10 and 20 years old in predominantly urban areas investigated alcohol and drug use.⁴ After matching on age, sex, grade level, geographical location and socio-economic status, there were no significant differences in the proportion of drug or alcohol users between the two groups of students within the previous 12-month period. Tobacco, alcohol and cannabis were the drugs most often used. There were no significant differences in the proportion of youth feeling drunk between both groups, however among the monthly-drinkers, more Aboriginal students had at least one episode of heavy drinking (having five or more drinks on one occasion). More recent data demonstrate that Aboriginal youth are at two to six times higher risk for alcohol-related problems compared to other Canadian youth.⁵ The 2002 Youth Smoking Survey included questions on alcohol and drug use. Aboriginal-specific data were not prepared. The data show that among the youth in Grades 7–9, 55% had consumed alcohol in their lifetime.⁶ Alcohol use increased from 38% in Grade 7 to 69% in Grade 9. The most commonly used illicit drug was cannabis (18%). Cannabis use also increased from Grade 7 to Grade 9, from 8% to 30%. Six percent of the sample responded to using an illicit drug other than cannabis. Overall, these data revealed a strong association between tobacco-smoking and alcohol and drug use.

Interpretation Methods

The authors took an exploratory approach towards the analysis of this chapter. All survey items that might influence the tobacco, alcohol and drug use of First Nations youth were examined. When interesting trends or patterns would emerge, whether or not an association was statistically significant, the data were reviewed in further detail and reported on. The philosophy was to maximize the amount of information that could be presented in order to provide a range of data for future research. Wherever possible, First Nations input was included throughout the interpretation and write-up phases of the analyses.

Approximately 12.2% of First Nations youth reported being an “occasional smoker.” These youth were comparable to “daily smokers” in terms of their gender and age. Therefore, to simplify the comparison between these youth, a “current smoking status” variable was created combining “daily smokers” and “occasional smokers.” The intention of these findings is to explore tobacco rates and behaviours, and ultimately to describe the characteristics of non-smokers in an effort to replicate their resiliency.

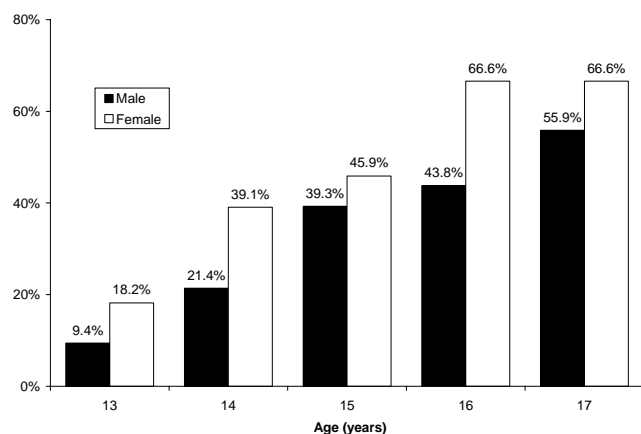
Results

Rates of use

Figure 1 illustrates the non-traditional tobacco smoking rates by age and gender among 4,860 First Nations youth. Overall,

the smoking prevalence among this sample was 37.8%.ⁱ The prevalence increased with age, ranging from 10.9% among 12 year olds to 60.7% among 17 year olds.ⁱⁱ Between ages 12 and 14, rates of smoking almost tripled, increasing up to 29.5%. Rates of use are higher among females compared to males, for certain age groups (for instance, 64.5% of 13 year old smokers were female).

Figure 1. Tobacco smoking rates by age and gender (n=2,494)



*Percentage for age 12 is suppressed due to small sample size.

When asked if during the past 12 months the youth had consumed a drink of beer, wine, liquor or any other alcoholic beverage, 42.2% reported yes. Among these respondents, approximately 52.3% were female and 78.7% were between 15 and 17 years old. The youth who had reported alcohol consumption over the previous year were asked how often they had consumed five or more drinks on one occasion. While a small proportion (12.6%) responded they had had five or more drinks on one occasion more than once per week, 64.6% of all youth reported this consumption at a rate of at least once per month. Generally speaking, more frequent drinking occurred among older youth.

The prevalence and frequency distribution of substance use is reported in Table 1. The majority of youth reported never using many of the substances inquired about. The substances reported among a larger portion of the sample were chewing tobacco (5.8%) and cannabis (32.7%). Higher proportions of the chewing tobacco users were within the 15–17 age range. Cannabis use was similar across gender: however there were significant differences between age categories. Among the 12–14 year olds, 14.9% reported cannabis use compared to 47.5% of the 15–17 year olds.

Table 1. Proportion of youth using various substances at least once in the past year (n=4,770)

Substance	Proportion using (%)
Chewing tobacco	5.8
Cannabis (marijuana, weed, grass)	32.7
PCP or angel dust	0.9
Acid, LSD, or amphetamines	1.5
Ecstasy	0.8
Inhalants (glue, gas, paint)	1.5
Sedatives or downers	0.8
Cocaine, crack, freebase	1.8
Codeine, morphine, opiates	3.5
Heroin	0.2

Tobacco smoking behaviours

Of the youth who were former tobacco smokers (meaning that the youth had been daily smokers and had quit or that they had experimented with smoking and currently do not smoke) (5.7%), the average age of initiation was 12.2 years old. The average quitting age was 14 years old. These youth quit smoking for a variety of reasons. While respondents could select more than one reason, the reason reported by the highest proportion of youth was to choose a healthier lifestyle (49.2%). The second highest response was quitting out of respect for loved ones (25.9%). The third ranked response was having greater awareness or education on the ill effects of tobacco on health (18.2%) followed by actually acquiring a health condition (13.0%).

Of the current tobacco smokers, the average age of initiation was about half a year later at 12.7 years old. Smoking initiation began at age four, and then steadily increased up to age 13. After peaking at age 13, smoking initiation decreased by age (35.9% of this sample initiated smoking after age 13). The youth smokers reported an average of 5.9 cigarettes each day. This group responded that over the past 12 months, approximately 69.5% had tried to quit smoking at least once (41.5% had tried 1–2 times, 13.5% had tried 3–4, and 14.5% had tried to quit at least 5 times).

Factors related to tobacco use

An investigation into potential associations was conducted between all of the survey items to the substances that were used by at least 10% of youth: tobacco smoking, cannabis use and alcohol consumption. An overview of the findings is presented below.

Lifestyle

Tobacco smokers reported more cannabis and alcohol use compared to non-tobacco smokers. This increased use of cannabis was also reported among alcohol drinkers compared to non-drinkers. Tobacco and alcohol users reported a higher proportion of use of each of the substances (recreational drugs/non-medical drugs) presented in Table 1. Similarly, cannabis users were also more likely to use these substances (aside from cannabis itself) than non-cannabis users. These findings should be incorporated with caution, as the sample sizes are quite small.

ⁱTo simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

ⁱⁱ Comparisons between groups or categories are statistically significant except where "NS" —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

In order to estimate environmental tobacco smoke (second-hand smoke) exposure, the respondents were asked if they had a smoke-free home. The responses of the cannabis users and alcohol consumers were similar to non-users/consumers, however tobacco smokers and non-smokers responded differently. Approximately half (52.7%) of the non-smokers reported being exposed to second-hand smoke in their home compared to 60.5% of smokers.

Household, living environment and ecological information

A variable was created to assess the remoteness of the respondents' community of residence. There was no difference in the community remoteness when comparing the alcohol drinkers to non-drinkers. However there were significant differences in the distribution of tobacco smokers compared to non-smokers across community remoteness, in that there was a higher proportion of youth who did not smoke living in non-isolated communities compared to isolated communities.

Education, language and traditional culture

A higher proportion of First Nations youth who report never smoking cannabis, not drinking over the past 12 months or being non-tobacco smokers ranked higher in liking school 'very much' as compared to youth smokers/users/drinkers.

The youth were asked to report on the importance of speaking their First Nations language as well as to rank how important traditional cultural events were in their lives. Overall, the youth responded similarly (with no significant differences) to these survey questions despite their smoking, drinking, and/or substance use behaviour(s).

General Health, personal wellness and support

In many surveys, respondents are asked to remark on their health as being excellent, very good, good, fair or poor. Results from this sample reveal that First Nations youth who smoke tobacco, drink alcohol or use cannabis rank their health status as excellent or very good less often compared to non-smokers/users/drinkers. The largest difference in the distribution of responses to having excellent or very good health was seen when comparing the tobacco smokers to the non-smokers (46.8% and 62.7% respectively). Those who ranked their health as excellent or very good were asked what things (from a scripted list of which youth could choose more than one response) make them so healthy (for example, good diet, reduced stress, and good social supports). However, there were no significant differences in the response pattern between smokers and non-smokers.

Overall, a higher proportion of cannabis users and alcohol drinkers were dissatisfied to some extent with their weight compared to non-users and non-drinkers. For youth who smoke or drink alcohol, a higher proportion of males ranked being 'very satisfied' with their weight compared to females.

Body Mass Index (BMI) values were calculated by cannabis use, tobacco smoking and alcohol consumption status. There were statistical differences for cannabis use and alcohol use. There were no differences however for tobacco users compared to non-users.

Each of the non-tobacco smokers, non-alcohol drinkers and non-cannabis users groups of youth reported eating a nutritious balanced diet more frequently compared to the smokers, drinkers and users.

Physical activity

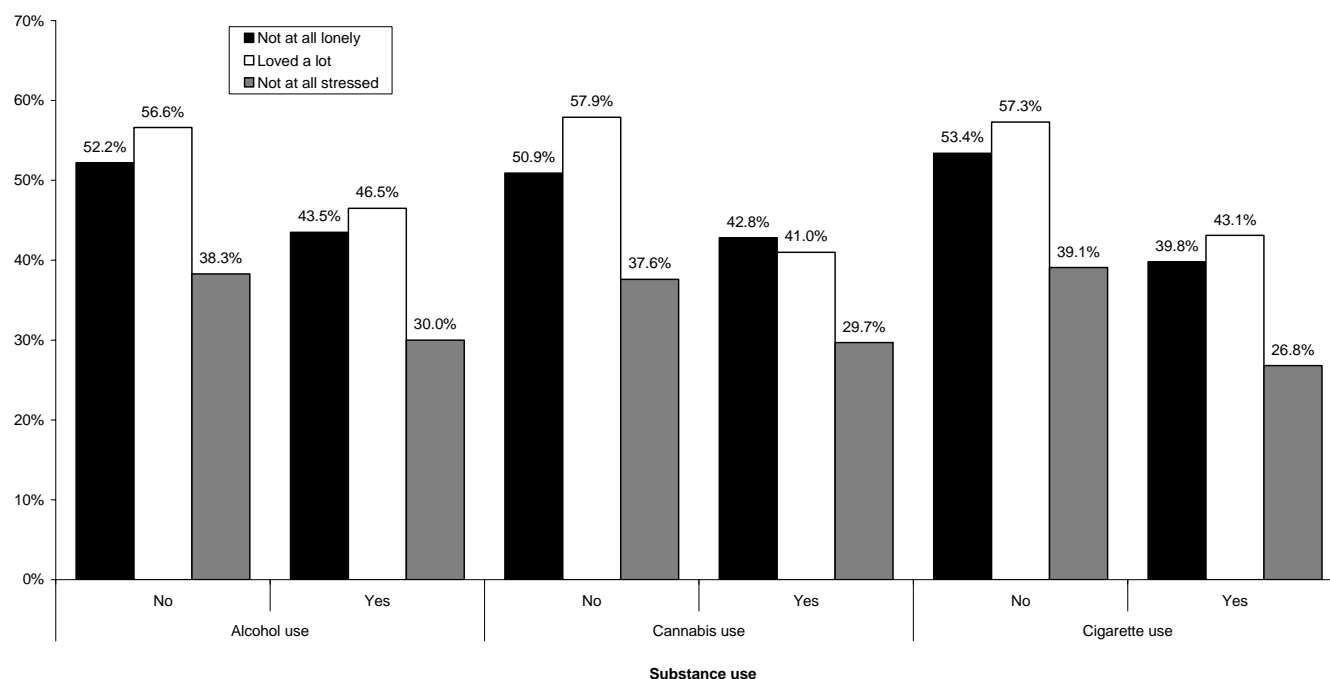
Both alcohol consumers and non-consumers participate just as often in any kind of physical activity, while tobacco and cannabis smokers/users participate less often compared to non-smokers/users. Over one-third (35.9%) of non-smokers and non-cannabis users reported being physically active everyday. This is in contrast to 27.4% of smokers and 26.8% of cannabis users.

Youth who smoke tobacco reported less time commitment towards taking part 'in sports and teams or lessons outside of school'. The opposite pattern emerged from the responses about time spent with a job outside of school as youth tobacco smokers are more likely to report working at a job four or more times a week compared to the non-smokers. A different distribution was reported related to time spent taking part in art or music groups or lessons whereas there were no differences among users of the three substances. With regards to time involvement towards traditional singing, drumming or dancing groups or lessons, all youth (despite usages) responded similarly.

The responses of the cannabis users, tobacco smokers and alcohol drinkers compared to non-smokers/users/drinkers varied for a series of self-worth and emotional wellbeing statements. Youth who were non-smokers/users/drinkers were more likely to agree to some extent that: they like the way they are, they have a lot to be proud of, and a lot of things about them are good.

Responses to a set of emotional wellbeing statements demonstrate that users and non-users feel differently about being lonely, loved and stressed (Figure 2). Indeed, alcohol and cannabis users as well as smokers are more likely to feel lonely and stressed *a lot*, and are less likely to feel loved *a lot* compared to non-users.

Emotional needs were assessed through eight questions inquiring on First Nations youth's perception of their support availability. Tobacco/cannabis smokers and alcohol drinkers were less likely than non users to state that there is someone available who shows them love and affection all of the time. Similarly, tobacco smokers and cannabis users are less likely than non-users to report that they have someone to take them to the doctor any time there is the need. Smokers were also less likely than non-smokers to report that they have

Figure 2. Proportion who are not lonely, feel loved a lot, and are not stressed by alcohol, cannabis, and cigarette use (n=4,440)

someone available to do something enjoyable with all of the time.

Non-drinkers, non-smokers, and those who did not use cannabis are more likely to report that they never had thought about suicide compared to users of these substances.

The youth were asked if either or both of their parents were ever students of a residential school. There were differences between the responses of the tobacco smokers and alcohol drinkers compared to the non-smokers/drinkers in that if a parent attended residential school, youth were more likely to report drinking or smoking. More than 42.2% of the youth smokers had at least one parent who had attended a residential school compared to less than 28.4% of the non-tobacco smokers.

Discussion

More than 20% of First Nations people were between the ages of 10 and 19 years old in 1999 according to the First Nations and Inuit Health Branch.⁷ It is paramount to recognize that most of these youth are healthy! Furthermore, it is vital to keep these youth healthy and to create opportunities for others among them to prioritize their health and well-being.

While this data demonstrates that rates of alcohol consumption and cannabis use are high, tobacco smoking is a known incredibly significant modifiable risk factor to current and future health illnesses.^{8,9} For that reason it will be discussed in more depth here.

Identifying information on age of smoking initiation will assist in creating timely prevention programs. These data reveal an early age of initiation that peaks at age 13, then declines. In Reading and Allard's analysis of the 1996 RHS, their data revealed the same pattern with retrospective data as well demonstrating that if initiation did not occur by the ages 18 or 19, individuals were unlikely to ever become smokers.¹⁰ Preventing smoking initiation may produce secondary healthy effects by blocking the gateway drug hypothesis. This theory suggests that tobacco is the primary drug used before subsequent and increasingly unhealthy drug experimentation.¹¹ RHS data supported this theory as drug use was clustered among the smokers, cannabis users and alcohol drinkers.

Although the prevalence of tobacco smoking among First Nations youth surpasses that of other Canadian youth, the number of cigarettes smoked per day is lower. Among the fifth to ninth graders in the 2002 Youth Smoking Survey, on average youth smoked on average 8.1 cigarettes per day, compared to 5.9 per day among this sample.¹² Increasing age/grade of the youth of both national surveys was associated with higher rates of smoking, however gender showed significant difference distinctly between the two. Among the First Nations youth, females had a higher proportion of smoking across certain age groups.¹³

It is important to recognize that there are similar characteristics between the youth who smoke and those who don't. For instance, both groups report placing a lot of importance on speaking the language of their First Nation and having traditional cultural events in their lives. The areas

with disturbing differences were in regards to the youth's perceived emotional support and well-being. These data reveal poorer self-esteem, social support and resources among smokers.

Expressions and experiences of First Nations non-smoking youth

It is important to describe what makes some youth resilient to addiction to tobacco smoking. Former smokers and youth who initiated smoking but did not progress to currently smoking, quit to aspire to a healthy lifestyle or out of respect for a loved one. Non-smokers are more likely to live in a smoke-free home and in a non-isolated community. These youth enjoy school very much and a high proportion of them rank their health as excellent or very good.

Recommendations and Solutions

“We need to know more about our youth to understand them. Then we can help the move in making the right choices. It is very important you guys keep doing it and find out what is important to our youth. So we can have more influence on what they do and help make more positive choices in the harsh world that we live in.”

(Comment by a youth who participated in Aboriginal Youth Lifestyle Survey at the North American Indigenous Games, 2002)

To decrease tobacco smoking, cannabis use and alcohol drinking amongst First Nations youth, it is recommended that health promotion programs and interventions be designed towards households and families, as opposed to individuals. A household oriented program for smokers and non-smokers, drinkers and non-drinkers, drug users and non-drug users

may increase awareness across all age groups and family members (grandparents, parents, siblings, cousins, etc.). As well, it may prevent uptake among younger household members and may increase the number of smoke-free households. This recommendation is supported by the data that indicate youth smokers perceived less social support and resources compared to non-smokers. A household/family program might encourage a sense of togetherness, belonging, and support.

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Chapter 23

Sexual Health Practices

Abstract

The 2002-2003 First Nations Regional Longitudinal Health Survey (RHS) indicates that 28.4% of First Nations youth (ages 12-17) report being sexually active, while 30.9% report being sexually active in the last 12 months. These rates are considerably lower than the estimated 49.9% of mainstream Canadian youth reported as sexually active. Significance is drawn from the sexual activity patterns of First Nations youth by gender and age. 65.6% of First Nations males aged 17, and 57.3% of First Nations females aged 17, report being sexually active. First Nations youth aged 13 and 14 report sexual activity at 2.6% and 18.8% respectively, or approximately 8 to 9% more than non-Aboriginal youth. In comparison to the 70 to 80% of mainstream Canadian youth who report condom use, 81.0% of First Nations youth report using a condom, with 66.6% reporting always using a condom for protection to avoid sexually transmitted infections (STIs). 10.9% of First Nations youth report using no form of birth control protection. 67.9% of First Nations females aged 17 report using condoms for birth control protection, in comparison to 91.4% of First Nations males of the same age group. 4.5% of First Nations youth report having been pregnant or getting someone pregnant. The situation of First Nations females, in particular, suggests that current rates of teen pregnancy, STIs and Human Immunodeficiency Virus (HIV) infection, coupled with reported birth control protection patterns for this group, warrant immediate attention. In addition, the historical contexts of abuse, trauma, and largely poor living conditions that contribute to an environment of socio-cultural change must be considered in order to fully understand their impact upon the sexual health of First Nations youth.

Introduction

The sexual health of First Nations youth is an area that is extremely neglected within health care and research communities. As with non-First Nations youth, an examination of the sexual health and sexual activity patterns of First Nations youth demonstrates there are reasons for concern. These include pregnancy at an early age, unplanned pregnancy, STIs, HIV, a limited awareness of the risks for disease or unwanted pregnancy, and a lack of culturally appropriate programming. Due to historical and socio-cultural change, the sexual health concerns and problems of First Nations youth are pronounced when compared to non-First Nations youth. Issues of alienation, discrimination, isolation, and marginalization are common themes that provide much of the context for these concerns.

This chapter analyzes data from the 2002-2003 First Nations Regional Longitudinal Health Survey (RHS) in relation to the sexual health and sexual activity of First Nations youth aged 12 to 17. A cultural framework guides the analysis and provides the context for human sexuality and what it means to be sexually healthy. A historical overview of the many factors contributing to an environment of ill sexual-health for First Nations youth is presented. Patterns of sexual activity and birth control protection are drawn, potential concerns and problems for First Nations youth and their sexual health are discussed and points from relevant literature are discussed, in order to acknowledge the immediate needs of First Nations youth in relation to their sexual health.

Cultural framework

A four-directions model¹ provides the foundation for the cultural framework used in this analysis, and provides a meaningful context for understanding traditional views of human sexuality. Non-traditional views of human sexuality often possess explicit characteristics that associate sex and sexuality with sin and uncontrollable passions that become a primary motivation for behaviour.² Traditional views perceive sex as a gift to humans from the Creator, and the act of sex as something that is meant to be pleasurable. This dichotomy of views represents a source of conflict for First Nations youth and supports the need to return to traditional teachings and values that emphasize the relationships between sexuality and spirituality, where having sex means to touch the life force within us² (the eastern door).

Traditional society possesses a clear definition of gender roles and their boundaries. A breakdown in understanding these roles and boundaries has led to negative effects for First Nations youth in respect to sexual health, such as a lack of knowledge of the responsibilities that each gender carries and the associated notions of balance and harmony that these roles support (the southern door).

Puberty within a traditional society signifies an awakening and dictates that certain rites or rituals take place for both

First Nations males and females. These rituals are performed in order to educate youth of the power that sexuality possesses and to teach them of the ways in which this power connects human sexuality and spirituality (the western door). Traditional and cultural teachings of sexuality include particular moral codes that guide the behaviours and activities of people. These moral codes offer directions about the relationships that exist between people, between sexuality and the individual, and between the life force within each of us and the Creator (the northern door).

Historical contexts

First Nations youth face challenges similar to those faced by non-First Nations Canadian youth in relation to their sexual health. However, the historical contexts in which First Nations youth have had to survive are in stark contrast to those of mainstream Canadian youth. These contexts include high levels of neglect³, abuse⁴, poverty⁵, and the struggle to locate and maintain a cultural identity, all factors that have been sufficiently documented.⁶ These conditions warrant the attention of governments and policy-makers when considering the culturally specific and appropriate programming needs of First Nations youth in relation to their sexual health and sexual health concerns.

Epic proportions of teen suicide,⁷ teen pregnancy,⁸ STIs and HIV,⁹ sexual abuse,¹⁰ and sexual exploitation¹¹ exist among First Nations youth in comparison to non-First Nations Canadian youth. *The Aboriginal Nurse*¹² states that “our impressions of what is desirable and undesirable in terms of sex and adolescents is very local, very specific to a moment in time, a group of people, and a place on the globe,” and considers that these impressions are also political. For instance, increased levels of trauma due to family violence and sexual abuse are shown to have a negative effect on how we view sexuality.¹³ Within these contexts, First Nations youth face issues of marginalization that persistently affect their patterns of sexual activity and their sexual health.

Sexual orientation, social class, race or ethnicity and place of residence are also considered factors affecting the marginalization of First Nations youth.¹⁴ This marginalization or non-acceptance of First Nations youth is exemplified by the differences that exist between traditional and mainstream views of sexual orientation. Many traditional societies display an acceptance of multiple sexual orientations, including gay and lesbian relationships,¹⁵ whereas European religious ideologies often forbid such relationships. Past and current integration of European religion into First Nations societies has created conflict for First Nations youth and communities regarding this issue, and has contributed to the difficult environment in which First Nations youth must navigate in relation to their sexual health.

In addition, levels of alcohol and drug abuse¹⁶ among First Nations youth are higher than those in mainstream society.

This substance abuse is often rooted in a historical context, and can be attributed to assimilation policies and other effects of colonization that have led to widespread change for Aboriginal societies, including the loss of land and culture¹⁷, high levels of poverty, reduced opportunities for employment, and the Residential School Legacy.¹⁸ In turn, substance abuse is considered to be an important contributing factor to the sexual practices of youth, and may result in incidences of unprotected sexual activity, often leading to teen pregnancy, unwanted pregnancy, STIs and HIV.¹⁹

Further, the tendency of governments and agencies to import a ‘pan-Aboriginal’ approach in developing and delivering education or programs for Aboriginal peoples has been shown to significantly affect the utility of these services.²⁰ This is particularly distressing with regard to First Nations youth, considering their high rate of participation in all or most ‘high risk’ health behaviours.²¹ A limited awareness of those factors that put youth at risk for disease or unwanted pregnancy, and a lack of available culturally specific and appropriate programming in relation to sexual health, compound the current crisis situation.

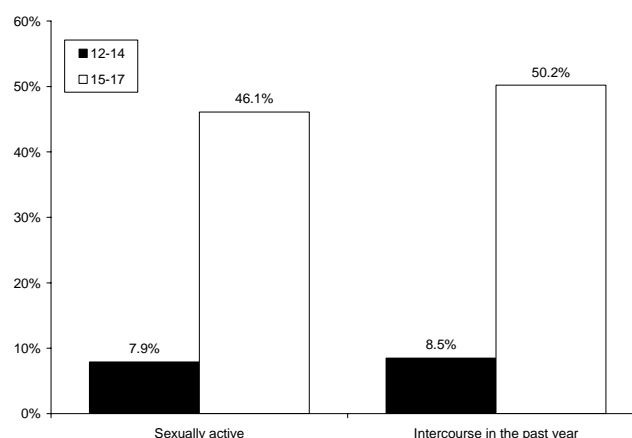
Results and Discussion

Patterns of sexual activity

28.4%ⁱ of First Nations youth report being sexually active, and a similar percentage (30.9%) report having had sexual intercourse in the 12 months prior to the survey. As seen in Figure 1, 7.9%ⁱⁱ of First Nations youth aged 12 to 14 report being sexually active, and 46.1% of First Nations youth aged 15 to 17 report being sexually active. In addition, 8.5% of First Nations youth aged 12 to 14 report having sexual intercourse in the last 12 months, and 50.2% of First Nations youth aged 15 to 17 report having sexual intercourse in the last 12 months. In comparison, a report released in 1999 estimated that 49.9% of Canadian adolescents were sexually active.²²

Not surprisingly, older youth are more likely to be sexually active than their younger counterparts. Responses regarding the age at which First Nations youth report being sexually active break down as follows: 2.6% for age 13; 18.8% for age 14; 32.5% for age 15; 45.8% for age 16; and 61.9% for age 17. Responses for having had sexual intercourse in the past twelve months by age break down as follows: 3.4% for age 13; 20.0% for age 14; 34.8% for age 15; 50.9% for age 16; and 66.5% for age 17. There are no significant differences in reported sexual activity by age between males and females.

Figure 1. Sexual activity and intercourse by age



These figures suggest that First Nations youth show similar characteristics to the mainstream population when considering younger versus older adolescents as a group. However, according to individual age, First Nations youth are more sexually active than their non-First Nations counterparts. Further significance of this data may relate to the instances of sexual activity for First Nations youth at younger ages, such as 12, 13, and 14, and the instances of sexual activity for First Nations females and males in comparison to mainstream females and males of the same ages. For instance, the 1996 National Longitudinal Survey of Children and Youth²³ paints a portrait of Canadian teens where the “median age for intercourse for both men and women is 17, and that in a group of teens who are 17 years of age we are probably looking at a group where half have experienced sexual intercourse.”²⁴ If the group is 16 years of age, about 40% have experienced sexual intercourse and if the group is 15, about 25% of females and 20% of males have experienced sexual intercourse. Below the age of 15, 10 to 13% have experienced sexual intercourse. As well, “less than 2% initiate sex before age 14” and current research on sexually active very young teens suggests that they are a distinct subset of adolescents who differ from the majority in their sexual practices.²⁴

The breakdown of numbers of sexual partners or life partners in the last 12 months is as follows: 1 to 2 partners, 67.4%; 3 to 4 partners, 18.7%; 5 to 6 partners, 6.0%; and, 7 to 10 partners, 4.0%. Data that represents the numbers of partners in the last 12 months by gender shows that First Nations males, in general, tend to report more partners than First Nations females. For example, only 58.1% of First Nations females aged 17 report 1 to 2 sexual partners in the last 12 months, whereas 75.1% of First Nations males report 1 to 2 sexual partners in the last 12 months. This data appears similar to the data regarding numbers of sexual partners for mainstream youth, where approximately “one quarter of women and between 31% and 38% of men who are in their teens seem to report two or more partners in a year.”²⁴

ⁱ To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

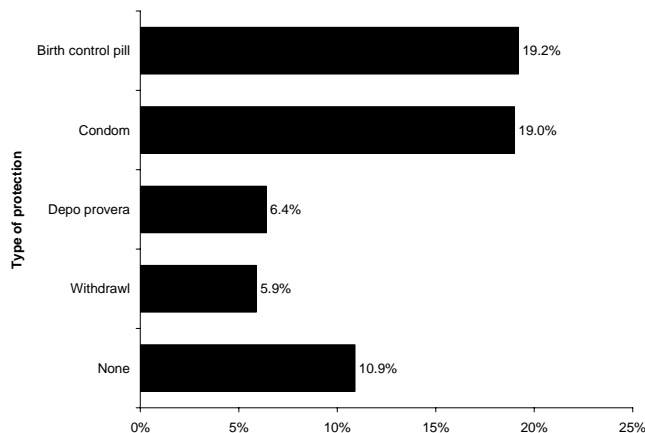
ⁱⁱ Comparisons between groups reported in this chapter that are all significant unless “NS” —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

In light of these statistics describing the sexual activity patterns of First Nations youth, it is important to note that relevant literature acknowledges a direct correlation between the age at which sexual activity begins and the increased risks to sexual health and overall health.^{25,26,27,28,29} For example, “the younger the age at first sexual intercourse, the more lifetime partners teenagers accrued,” and the less likely youth are “to use contraception, putting this group at much greater risk for pregnancy, STIs and HIV.”³⁰

Patterns of birth control protection

Birth control protection falls under the two main categories: protection to avoid pregnancy, and protection to avoid STIs. Figure 2 summarizes the most reported methods of birth control protection. Among First Nations youth who reported having sexual intercourse in the past year, 81.0% reported using condoms and 19.2% reported using birth control pills, while 10.9% reported using no form of birth control protection. Reasons cited for using birth control methods include: birth control to avoid pregnancy (20.7%); protection from STIs (21.7%); and, both birth control to avoid pregnancy and protection from STIs (57.6%).

Figure 2. Leading birth control methods used by youth



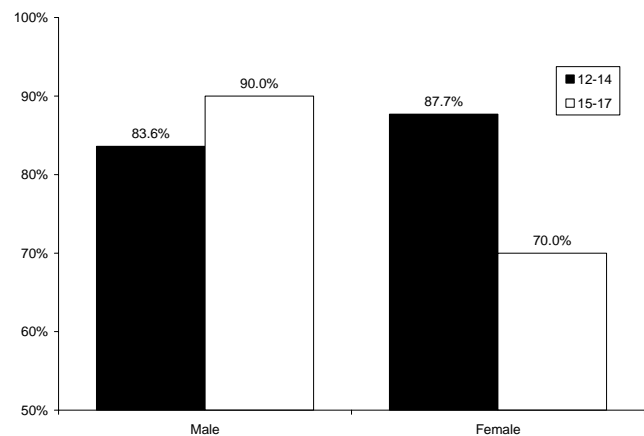
The case for birth control methods as a form of protection against pregnancy among First Nations youth is similar to that for non-First Nations youth. Although the increase in birth control use by single year of age observed in non-First Nations youth is non significant among First Nations youth (due at least in part to sample size), the same pattern exists in both populations. The proportions of youth using birth control methods generally are not significant among individual ages. The use of birth control pills as a contraceptive by age group breaks down as follows: 7.7% for those aged 12 to 14; and, 20.8% for those aged 15 to 17.

The use of condoms among First Nations youth in relation to protection from STIs breaks down as follows: 66.6% report always using a condom; 19.1% report using a condom most of the time; 6.6% report occasionally using a condom; and, 7.7% report never using a condom. First Nations youth and mainstream youth populations both appear less likely to use condoms as age increases - although, perhaps due to the

relatively small sample size, these differences are not significant.³¹ Condom use by age groups is reported as 85.2%(NS) for those aged 12 to 14, and 80.5%(NS) for those aged 15 to 17.

The 1996 National Population Health Survey³² states that 70% of teenage females and 81% of teenage males reported using a condom at last intercourse. Although First Nations males have a tendency for increased condom use (89.1%) when compared to First Nations females (71.8%), the percentage of First Nations males who report condom use is also considerably higher than mainstream males who report condom use. In addition, 67.9% of First Nations females aged 17 report using condoms for birth control protection, and 91.4% of First Nations males aged 17 report using a condom for birth control protection. There were no significant changes in condom use by males according to age; however, older females were less likely to use condoms than their younger counterparts (Figure 3).

Figure 3. Condom use by gender and age



The Final Report of the Standing Senate Committee on Aboriginal Peoples (2003), *Urban Aboriginal Youth: An Action Plan for Change*,³³ states that at least half of Aboriginal youth do not use condoms all the time or are using condoms ineffectively. The data from the RHS does not allow for analysis of the effectiveness of condom use or other forms of birth control protection. Other reports³⁴ show that trends in adolescent sexual behaviour are changing, as there is a decrease in teens who report being sexually active and an increase in the number of teens who report using contraception; however, the “greatest declines” are reported in the “lowest risk groups.”³⁵ It is therefore suggested that the changes largely affecting the sexual behaviour of adolescents from low-risk groups are of limited significance for Aboriginal youth, who are considered to be the highest-risk group of Canadian youth in terms of experiencing early pregnancy, STIs, sexual abuse, sexual exploitation, depression, and suicide.³⁶ Further, limited applicability of the factors that may affect sexual activity trends for mainstream Canadian youth supports the need for research and increased

insight into those factors that are specific to First Nations youth and their sexual activity patterns.

Patterns of pregnancy or fathering a child

The 1999 Aboriginal Roundtable on Sexual and Reproductive Health³⁷ cites statistics from Health Canada indicating that “teenage pregnancy among First Nations youth in British Columbia, the Prairie and Atlantic provinces are up to four times higher than the national average. Incredibly, for young women under 15 years of age, the rate is estimated to be as much as 18 times higher than that of the general teenage population.”

4.5% of First Nations youth report having been pregnant or getting someone pregnant. Of the First Nations youth who reported ever having been pregnant or ever having gotten someone pregnant, percentages increase by age, (e.g. 6.1% at age 16 versus 14.4% at age 17).

Although the 2002-2003 RHS does not report data that reflect the current rates of First Nations female youth who are pregnant, the birth rate for Aboriginal women is reported to be twice that of the overall Canadian female population. In 2005, Health Canada³⁸ reported that Aboriginal mothers tend to be younger: approximately 55% are under 25, versus 28% of the non-Aboriginal population. Further, 9% of Aboriginal mothers are reported to be under the age of 18, versus 1% of the non-Aboriginal population.

Early teen pregnancy is strongly correlated with high rates of early school drop-out,³⁹ unemployment, low levels of education, and an increased reliance on social assistance. As well, a tendency toward poor health of teen parents and their children is found in the 2002 Ontario Federation of Indian Friendship Centres⁴⁰ report, which states that “children of teen parents have been shown to have lower levels of cognitive and social development. They are more likely to be victims of abuse and neglect and are three times more likely to be incarcerated in their late teens and early twenties than are children of mothers who delay childbearing. Children of teen parents are more likely to have children when they become teens.” Furthermore, *The Aboriginal Nurse*⁴¹ suggests that early teen pregnancy leads to a life of poverty that perpetuates an ongoing cycle of social problems, including substance abuse, child neglect, and family violence.

In addition, the potential impact of teen pregnancy on First Nations youth and their communities necessitates the recognition that, historically, the early onset of pregnancy within First Nations communities may have been the norm. As such, the Aboriginal Roundtable on Sexual and Reproductive Health⁴² acknowledges the early onset of parenthood as common in traditional Aboriginal societies, and cites a “breakdown in traditional support structures and values” as responsible for the poor health and social problems that teenage parents and their families often experience. These important trends, coupled with the

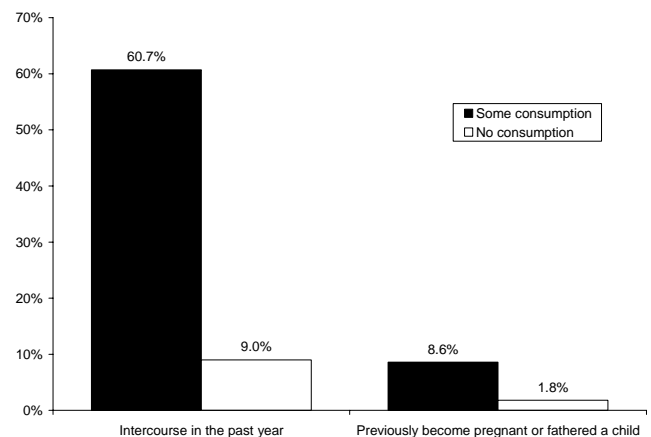
aforementioned tendency of First Nations female teens to report the lowest use of contraception, warrant further investigation and an immediate response to the special needs of this specific age group and gender.

Factors affecting sexual activity and sexual health

Gender is considered to be significant in relation to the sexual health and sexual activity of all youth. While First Nations females tend to report lower rates of condom use than First Nations males, females are at an increased risk for the complications associated with unprotected sexual activity. For example, “64% of tubal infertility and 42% of ectopic pregnancies are attributable to the sexually transmitted infection chlamydia.”⁴³ Moreover, chlamydia rates within the province of Alberta doubled in both males and females aged 15 to 19 between 1998 and 2002, with Aboriginal peoples remaining disproportionately affected by this infection.⁴⁴

Alcohol and drugs are also believed to have significant effects on the sexual activities and sexual health of youth. “Studies estimate that Aboriginal youth are at two to six times higher risk for every alcohol-related problem than their non-Aboriginal counterparts in the Canadian population.”⁴⁵ In the last 12 months, 42.8% of First Nations youth report having drunk alcohol. In relation to sexual activity (Figure 4), 60.7% of First Nations youth who report using alcohol in the last 12 months also report having sexual intercourse in the last 12 months, compared to only 9.0% who did not have a drink. Similarly, 8.6% of those who reported alcohol use in the past year also reported having been pregnant or gotten someone pregnant; this is substantially higher than the 1.8% of those who did not consume any alcohol in the past year.

Figure 4. Sexual intercourse and previous pregnancies (or having fathered a child) by alcohol consumption



Proper nutrition and adequate physical activity are two basic human needs that affect overall health and well-being. Nutrition as a factor that affects the sexual activity and sexual health of First Nations youth is suggested by the converse relationship between youths who eat a nutritious balanced diet and their reported rates of sexual activity. For

example, 17.2% of First Nations youth who always or almost always eat a nutritious balanced diet report that they are sexually active, while 38.3% of youth who never eat a nutritious balanced diet report that they are sexually active. No differences were observed by frequency of participation in physical activity.

The sporadic use of contraception by youth is an important concern in relation to the sexual health of First Nations youth, and was not addressed in the RHS. Feldmann and Middleman⁴⁶ state that “there remains a need to address questions of contraceptive efficacy, practicality, and partner concerns,” and that youth continue to face multiple barriers in obtaining contraception. The three main reasons cited by First Nations youth for not using a condom include: being with a steady partner (20.8%); not having a condom at the time (20.7%); and, being under the influence of alcohol or drugs (19.3%).

The rates of coital activity (sexual intercourse, anal intercourse) versus non-coital activity (oral sex, masturbation) are not measured in the RHS. Little is known about coital activity versus non-coital activity, and their respective effects on the sexual health and sexual activity of youth.⁴⁷ However, there are strong indications that activities such as oral sex have the potential to cause concerns and problems in relation to the sexual health of youth.

Access to counselling, psychological testing, or any other mental health service is associated with rates of reported sexual activity among First Nations youth —23.9% of First Nations youth who reported never accessing such a service say they are sexually active, compared to 42.4% of First Nations youth who did receive such services within the last 12 months.

Society’s view of sexuality has a huge impact on the sexual health and sexual activity of youth. The National Aboriginal Consultation Project⁴⁸ states that “our impressions of what is desirable and undesirable in terms of sex and adolescents is very local, very specific to a moment in time, a group of people, and a place on the globe.” This may have particular impact on First Nations youth, as European and religious ideas that go against traditional knowledge and teachings help to create an environment where “two conflicting views of sexuality exist.”⁴⁹

Marginalization and historical impacts of colonialism and the Residential School Legacy are a cause for concern. Their potential to negatively affect the sexual health and sexual activity of First Nations youth is only recently being acknowledged within society. The RHS, however, reveals no significant difference in this regard —30.7% of youth who have at least one parent who attended residential school report being sexually active, compared to 26.6% of those youth whose parents never attended residential school. Furthermore, 31.2% of youth who have at least one grandparent who attended residential school report being

sexually active, compared to 27.7% of those youth whose grandparents never attended residential school. Comparisons to the mainstream population in this regard are not possible. Nonetheless, as many as 34% of adult respondents in the 1997 RHS⁵⁰ reported experiencing sexual abuse during their childhood, and the effects of past sexual abuse on sexual health are well documented.

Who teaches youth about sexual activity and sexual health? “The family—parents, grandparents, aunts and uncles—is the most important teacher of sexuality for children. Positive ideas about sexuality and healthy sexual attitudes and behaviours are learned by example...throughout childhood. There is a the need to feel comfortable with one’s own sexuality, as well as to possess knowledge of the issues when discussing sexual and reproductive health.”⁵¹

The availability of culturally specific and appropriate programs for First Nations youth impacts the number of youth who may access these services. For example, the practice of basing Federal funding on age categories and narrow definitions of “youth” has created a lack of accessible services, particularly for teens aged 13 to 15.⁵² Culturally specific programs and services are paramount for First Nations youth. The need for such services is reflected in the findings on Aboriginal youth at risk for sexual abuse or exploitation in the National Aboriginal Consultation Project.⁵³ The findings of this project state that “the youth made it clear that cultural, historical, and economic factors are important in constructing the experiences of Aboriginal children and youth, and these factors limit the application of non-Aboriginal research, programs, and policy designed for youth-at-risk.”

Lastly, we discuss the use of First Nations languages in relation to sexual activity, and how this relationship may affect the sexual health of First Nations youth. While First Nations Elders tell us that a true understanding of cultural teachings can only be obtained through the use of our language, the percentage of First Nations youth who report an understanding of one or more First Nations languages is only 32.7%. However, the relationship of sexual activity to one’s ability to understand or not understand a First Nations language is unclear. For example, the 26.7% of respondents who have no understanding of their native language and report being sexually active is equivalent to the 32.2% who have an understanding of their native language and also report being sexually active. This suggests that more detailed information is required regarding the relationship between sexual activity/sexual health and the ability to speak a Native language, in order to evaluate any significance in that relationship.

Conclusions and Recommendations

No significant differences in patterns of sexual activity were found between younger versus older adolescents. However, significant differences were evident between First Nations

youth and youth in the general Canadian youth population - particularly when instances of sexual activity by specific age and gender are examined. Of particular significance may be the rates of sexual activity for those aged 13, 14, and 15 and the higher number of sexual partners among 17-year-old males versus females.

Birth control protection patterns of First Nations youth are similar to those of mainstream youth, with birth control practices to prevent pregnancy increasing with age, and birth control practices for the sole purpose of preventing STIs decreasing with age. The percentages of First Nations youth who use birth control protection are also similar to those of mainstream youth - except for First Nations males aged 17, who report the highest use of condoms among all categories of youth. Birth control practices of First Nations females are of concern, as the potential for problems related to sexual activity are believed to be greater for females who report rates of pregnancy and STIs that are often more than double those of non-Aboriginal females. In addition, the reported rates among First Nations youth of pregnancy or fathering a child exceed those of non-Aboriginal youth. These figures emphasize the urgent need to address the concerns of First Nations youth in relation to sexual activity and birth control protection, as these teens also face issues of marginalization, discrimination, and sexual exploitation. Further, it is important to recognize that historical norms within First Nations communities may have included the early onset of childbearing and that many of the problems that young First Nations parents experience are the result of a breakdown in traditional beliefs and practices.

Factors that affect the sexual activity and sexual health of First Nations youth are similar to many of the concerns and problems of all youth. These include: differences in sexual activity and birth control practices by gender; the affect of alcohol and drug abuse on sexual activity and birth control protection; the role of proper nutrition and adequate physical exercise in decisions regarding sexual activity and the use of birth control protection; the sporadic patterns and effective use of birth control measures; and, the coital and non-coital sexual activities of youth. Factors affecting the reporting of sexual activity and sexual health of First Nations youth that may be specific to First Nations youth include: access to counselling or other psychological services; societal views of sexuality that are in opposition to traditional views; marginalization and the historical impacts of colonialism and the Residential School Legacy; appropriate and knowledgeable teachers of sexual health and sexual health education; the availability of culturally sensitive sexual health programming; and, the fluency of First Nations languages among First Nations youth.

It has been suggested that all of these issues are not directly or specifically addressed within the RHS and that they may be significant in relation to their potential impact on the sexual activity and sexual health of First Nations youth.

Moreover, it is often those factors that may be shown to indirectly affect the sexual health and well-being of youth that create concerns and problems that are of paramount consideration in any attempts to improve their sexual health. As such, the development of sexual health education and programs for First Nations youth, aimed at the improved sexual health of this population, requires that a culturally specific and appropriate framework be utilized in any endeavours.

Within a culturally specific framework, appropriate sex education programming means programming that is specific to gender, age, community, and traditional values and practices, while being cognizant of the healing required from the effects of colonialism and the marginalization of First Nations youth. Further, sex education that does not encompass traditional teachings on sexuality, gender roles and responsibilities, motherhood as a meaningful community role and the inclusion of men in these practices and processes is deemed insufficient. Finally, the direct involvement of youth in the development of sex education programs is paramount to the success of those programs, while culturally trained educators are viewed as essential if the programs are to successfully alleviate any feelings of alienation, isolation, self-worth, and discrimination.

First Nations youth face challenges similar to non-First Nations youth in relation to their sexual health and sexual activity patterns. However, the historical contexts of abuse, trauma, and largely poor living conditions that contribute to an environment of socio-cultural change must be considered in order to fully understand their impact on the sexual health of First Nations youth. This environment, in turn, supports the manifestation of crisis situations for First Nations youth. It also demands the development and immediate availability of culturally specific and appropriate sexual health education and sexual health programming for First Nations communities.

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Chapter 24

The Impact of Parent and Grandparent Residential School Attendance

Abstract

This chapter presents findings on the well-being of First Nations youth in relation to their parents' and grandparents' residential school attendance. We report on the proportion of adolescents with parents and grandparents that attended residential school. Statistics comparing youth whose parents and/or grandparents were residential school survivors with youth who did not have parents or grandparents attend residential school highlight survey findings. Findings suggest that youth are more apt than children to have parents who attended residential schools. Many youth still believe that it is very important that they speak a First Nations or Inuit language. A higher proportion of youth having at least one parent who attended residential school were likely to have thought about suicide in their lifetime, compared to youth whose parents/grandparents were not residential school survivors. It was also found that the physical and mental health effects of the residential school legacy are not as evident among youth in comparison to adults. We conclude by stating that a more in depth study on the relationship between youth, the intergenerational effects of residential school and current social influences affecting youth today might assist in understanding the contemporary experience of First Nations youth.

Introduction

The residential schoolsⁱ that operated from the mid-19th century to the late 20th century continue to have indirect effects on First Nations youth today. The cumulative effects of residential schools on cultural identity, health and well-being (and the continuous tensions between the values of Aboriginal peoples and those of mainstream society) complicate the efforts of youth to forge their identities and find their way in the world.²

This chapter discusses the proportion of youth whose parents and grandparents attended residential schools at one point. The findings are discussed by comparing survey results from youth whose parents/grandparents are survivorsⁱ with results from youth whose parents and grandparents did not attend residential school. More specifically, this information is applied to the following areas of interest: the importance of speaking a First Nations language; the ability of youth to speak one or more First Nations and Inuit languages fluently or relatively well; the importance of traditional cultural events; the prevalence of suicide; and the potential risk for being diagnosed with a health or mental illness.

Results and Discussion

In comparison to children under the age of 12, adolescents are more likely to have had parents who have attended residential schools. About 33.2%ⁱⁱ of First Nations and Inuit youth today have one or more parents who attended residential school. Only 16.5% of First Nations and Inuit children had one or more parent(s) who at some point attended a residential school. Adolescents are equally as likely as children to report a larger proportion of grandparents who had attended residential school. For adolescents, 65.0% reported that one or more of their grandparents were residential school survivors. For children, the proportion of grandparent(s) who were in residential schools was about 60% (58.6%).

Despite the number of books written on residential school systems and experiences, Chrisjohn and Young (1994) point out that the legacy³ of residential schooling has not been investigated in a systematic manner. This is especially true when it comes to the study of indirect effects on today's First Nations youth and children whose parents or grandparents were survivors.

With several generations of children having grown up in a setting where any manifestation of Aboriginality was disparaged and devalued, it is not surprising that the cultures and languages of many communities are now under severe threat. Although youth have experienced the loss of their

language⁴, the majority still believe that it is very important that they speak a First Nations or Inuit language, regardless of exposure to the intergenerational effects of residential schools (see Table 2).ⁱⁱⁱ

Table 1. Proportion of First Nations youth whose parents and grandparents attended a residential school

Intergenerational attendees	Percent
Mother or guardian attended a residential school	22.8%
Father or guardian attended a residential school	25.1%
One or more parents attended a residential school	33.2%
Maternal grandmother attended a residential school	50.9%
Maternal grandfather attended a residential school	42.1%
Paternal grandmother attended a residential school	40.3%
Paternal grandfather attended a residential school	37.2%
One or more grandparents attended a residential school	65.0%
At least one parent(s) and one grandparent(s) attended a residential school	15.7%

Table 2. Importance of speaking a First Nations language - youth

Importance of speaking a First Nations language	Parent (one or more)	
	Survivor	Non-survivor
Very important	51.0%	42.9%
Somewhat important	37.0% (NS)	37.8% (NS)
Not very important	9.1% (NS)	12.3% (NS)
Not important	3.0%	6.9%

For example, about half (51%) of the youth interviewed who were children of survivor(s) stated that it was very important to them that they speak their own language. 42.9% of youth who did not have a parent that attended a residential school believed that it was important for them to speak a First Nations language. Only a small minority of the youth surveyed who were the children of survivors (3.0%) reported that learning a First Nations language was not important, compared to 6.9% of youth who were children of non-survivors.

The results for youth understanding and able to speak one or more First Nations languages fluently or relatively well are not significant ($p > .05$), and are not included in this report. The results for understanding or being able to speak one or more First Nations languages for youth who had grandparents (one or more) attend residential school are also not significant ($p > .05$).

ⁱ "Survivor" refers to those First Nations peoples that have lived through the effects, or are currently living through the effects, of the legacy of the residential school system in Canada.

ⁱⁱ To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

ⁱⁱⁱ Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Culture and tradition

54.2% of the youth who had one or more parents that attended a residential school believe that cultural events are very important. This was in slight contrast to youth whose parents were not exposed to residential school (46.1%).

Suicide

In Chapter 14, it was stated that one of the most telling and lasting effects of residential schools on adult survivors was the frequency of early death⁵ as a result of suicide or other factors. For First Nations youth who had at least one parent that attended residential school, 26.3% have thought about suicide, compared to only 18.0% of those youth whose parents did not attend residential schools. Although not statistically significant, it is interesting to note that more youth who were children of survivors attempted suicide at least once in their lifetime (13.1%), compared to youth who did not have a survivor parent (7.8%) (see Table 3).

Table 3. Proportion of suicide attempts and thoughts of suicide among youth with survivor and non-survivor parent(s)

Ever thought about suicide	Parent (one or more)	
	Survivor	Non-survivor
Yes	26.3%	18.0%
Never	73.7%	82.0%
Ever attempted suicide	Parent (one or more)	
	Survivor	Non-survivor
Yes	13.1% (NS)	7.8%
Never	86.9% (NS)	92.2%

In support of holistic investigative frameworks, Stout and Kipling (2003) believe that there is a probable link between the intergenerational effects of abuse and elevated risks of suicide, violence-related injuries and alcohol involvement among First Nations youth. There is a definite need to further investigate these multi-faceted approaches in order to better understand whether or not there are links between parental and/or grandparental residential school attendance and high risk factors for youth such as suicide, alcohol abuse and violence-related injuries.

The impact of intergenerational effects connected with residential school attendance (where at least one parent attended residential school) on all dimensions of health is not as extreme for adolescents in comparison with their parents. Table 5 shows that youth who had one or more survivor parents reported only slight differences in the rate of mental or health illness diagnosis from youth with parents who never attended residential school. This suggests that there are several other variables that need to be investigated (other than intergenerational attendance at residential schools) with regard to the overall health of First Nations adolescents.

By far the most notable difference between residential school survivors and their descendents is that the latter generally have not faced long-term confinement in an institutional setting. Furthermore, most of the youth today have had the opportunity to interact with siblings and extended family members. They also enjoy access to Elders and other positive role models in their communities.⁶

Table 5. Diagnosis of health and illnesses by parental residential school attendance

Diagnosis if Parent was a Survivor		Diagnosis if Parent was not a Survivor	
Cognitive or Mental Disability	–	Cognitive or Mental Disability	–
Physical Disability	–	Physical Disability	–
Diabetes	–	Diabetes	1.1%
Obese	13.9%	Obese	21.6%

– Data suppressed due to insufficient sample size.

Conclusion

The policies of forced assimilation via residential schools have affected First Nations and Inuit youth at every level of experience, from individual identity and mental health to the structure and integrity of families, communities, bands and nations.⁷ More research could be beneficial in reinforcing the validity of this statement to the Canadian mainstream. We should also recognize that the experiences of First Nations youth, some of which they have graciously provided in this survey, need to be validated. Additionally, a more in depth study on contemporary social influences and the indirect effects of residential schools on today's First Nations and Inuit youth would help us to understand the current experiences and adversities of First Nations youth.

Notes to Chapter 24

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Chapter 25

Emotional and Social Well-being

Abstract

First Nations youth, as part of the First Nations Regional Longitudinal Health Survey (RHS), were asked a variety of questions relevant to their mental health, perceived personal wellness and sources of personal support. The findings show the majority of First Nations youth self-report as doing well in terms of their mental health and personal wellness. When First Nations youth are in need of assistance in dealing with problems they face, they most often turn to their parents or guardians, friends their own age or no one at all. The proportion of youth who do note as having difficulties with their mental health is greater than those who appear to be accessing either Western-based mental health services or consulting with traditional healers. Service providers within communities are not getting an opportunity to provide help when it is most needed. It is recommended that the focus of programming needs to change to a more holistic and traditionally consistent pattern of fulfilling extended family and community roles. Additionally, communities need to develop strategies that will improve the extent to which youth access these broadly defined mental health services. Other recommendations include further research possibilities that would utilize the wealth of data from this round of the RHS as well as information from other databases and community sources, with an overall goal of ultimately contributing to improving the health status of all First Nations youth.

Introduction

First Nations youth, as do all youth, face many challenges in negotiating through this developmental phase of life while maintaining a state of wellness.¹ In this round of the RHS data collection, youth ranging in age from 12–17 years were asked a variety of questions relating to their mental health, perceived personal wellness and sources of support. Currently, there is not a great deal of available research that examines aspects of First Nations mental health in a holistic way. Little data is available regarding the epidemiology of even the more common mental disorders (eg. depression, schizophrenia, anxiety disorders etc.) among First Nations youth. This kind of information is important because depression is a well-known risk factor for suicide. The Canadian Community Health Survey of 2002 reported that 7.9% of Canadians aged 12 or older endorsed symptoms suggesting that they had experienced at least one major depressive episode in the past 12 months,² whereas the rate for the off-reserve Aboriginal population was 13.2%.³ The Canadian Institute of Child Health cited one study of Mi'kmaq youth between 12–18 years of age finding that 21% of males and 47% of females reported experiencing feelings of sadness and depression within the past year.⁴

Unfortunately, First Nations youth are most frequently portrayed in the mainstream media as a group in distress, plagued by the problem of suicide. The tragic experience within some First Nations communities of losing young people due to suicide at alarming rates has drawn international attention.⁵ Suicide rates are often cited as one indicator of a community's state of emotional health.⁶ Communities experiencing such devastating losses are left to decide whether to engage attention in a call for help or quietly address community development needs—a very difficult decision to make in times of crises.⁷ Excluding the sparse epidemiological data on mental disorders, there is an array of literature that examines and attempts to explain the high rates of suicide among First Nations youth today. Rates of suicide among First Nations youth are estimated to be 5 to 6 times higher than the national average for non-Native youth.^{8,9}

Some communities have shown disturbing trends of suicide rates that continue to increase over time. Among the Nishnawbe-Aski youth in northern Ontario, the number of completed suicides increased an incredible 400% over a ten year period from five in 1986 to twenty-five in 1995.¹⁰ The implication derived from this pattern was that suicide rates may be somehow related to the geographical remoteness of the communities. Nonetheless, Chandler and Lalonde, in their British Columbia (BC) study of First Nations youth aged 15–24 years, found the opposite. They found higher rates of suicide for youth living in urban settings (147.4 per 100,000 population) as compared to youth living in either rural (95.1 per 100,000) or remote (78.2 per 100,000) settings.¹¹ These conflicting observations illustrate the need

to investigate whether the isolation or remoteness status of communities is somehow related to youth suicide. New data from the RHS examines the frequency of thoughts and attempts of suicide among First Nations youth. This information is reported later on in this chapter.

Chandler and Lalonde's research is encouraging because it begins to describe factors that communities may gain partial or full control over and examines community circumstances that may be protective against suicide. For the BC population, clear evidence of an inverse relationship between rates of First Nations youth suicide and 'cultural continuity' was found. 'Cultural continuity' is a concept that relates to a state of overall community wellness. The study defined it as the community being involved in some aspects of: self-government, land claims, having control over their educational system, health services, police/fire services or having cultural facilities available for use by members. Communities that had more of the factors present—higher levels of cultural continuity—also showed lower rates of suicide among their youth. Rates of suicide in communities without any of these protective factors were 138 per 100,000 population versus 0 per 100,000 population for those with all six factors present.¹² New data from the RHS, while not specifically asking about cultural continuity, examines some of these cultural factors and their potential relationship to suicidal thoughts and suicide attempts among First Nations youth.

Finally, there is very little existing information regarding the types of supports and services First Nations youth seek out when they experience emotional or mental distress. New data from the RHS will describe the patterns of help-seeking behaviors for a variety of psychosocial problems. These findings will be important to communities in terms of developing optimal, accessible and comprehensive mental health services (including both Western-based and traditional) for First Nations youth.

Results

Youth feeling in physical, mental, emotional, and spiritual balance

Overall, the majority of First Nations youth surveyed reported a feeling of being in a state of physical, emotional, mental and spiritual balance all or most of the time. Physical balance was most often reported, respectively followed by mental balance, emotional balance and spiritual balance. Table 1 illustrates the reported responses.

Males are more likely than females to report that they are in balance mentally and physically all of the time. Furthermore, younger youth (age 12–14) are more likely than their older peers (15–17) to state that they are in balance physically and spiritually all of the time. There were 12.1% of youth that reported almost never feeling in emotional balance. Youth living in isolated communities are more likely than those in

non-isolated communities to report feeling in mental balance almost *none* of the time. Youth living in remote isolated communities are more likely than those living in non-isolated communities to report being emotionally and physically in balance *all* of the time. Youth who are from communities that are not part of a health transfer agreement are more likely than those who are part of a community health transfer agreement to report being in physical balance almost none of the time. Youth that are from communities that are part of a multi-community health transfer agreement are more likely than youth from communities that are not part of a health transfer agreement to report that they are in spiritual balance *all* of the time.

Table 1. Youth report on “How often do you feel that you are in balances”

Responses	Physical Balance	Mental Balance	Emotional Balance	Spiritual Balance
All of the time	33.7% ⁱ	31.2%	23.1%	25.5%
Most of the time	38.6%	34.8%	37.0%	32.9%
Some of the time	21.6%	18.2%	27.8%	26.8%
Almost none of the time	6.0%	15.7%	12.1%	14.8%

Depression

Just under three-quarters of youth (72.8%) surveyed reported that they had not ever felt sad, blue or depressed for 2 weeks in a row while 27.2% of youth reported that they had felt sad, blue or depressed for 2 weeks in a row (Figure 1). There was a significant difference between gender and reports of sad or depressed feelings, with females reporting at much higher rates than males (37.1% versus 18.1%). For females aged 15–17 years, 44.3% reported such feelings compared to 22.1% males of the same age group. For females aged 11–14 years, 28.0% reported feeling sad or depressed while only 13.3% of their male counterparts acknowledged such feelings. This data shows that females report depressive feelings at approximately double the rates that males do which is comparable to the 1997 Nova Scotia study on Mi’Kmaq Health.¹³ There was no significant association found between reporting sad, blue or depressive feelings and factors such as the remoteness/isolation status of communities or the health transfer status of the communities in which the youth live.

Suicide

The youth were asked if they had ever thought about committing suicide or attempted to commit suicide. For the entire cohort, 78.9% of youth reported that they had not ever thought about committing suicide and 90.4% reported that they had not ever made a suicide attempt. Results for both

variables were further broken down into four groups: that they had such thoughts or made an attempt when they were under 12 years of age, that they had such thoughts or made a suicide attempt during adolescence (12–17 years old), that they had such thoughts or made a suicide attempt within the past year and they had never had such thoughts or made any attempts to kill themselves. Figure 2 displays data regarding thoughts of suicide and Figure 3 displays data regarding suicide attempts.

Figure 1. Reports of sad, blue or depressed feelings for 2 weeks in a row (n=4,546)

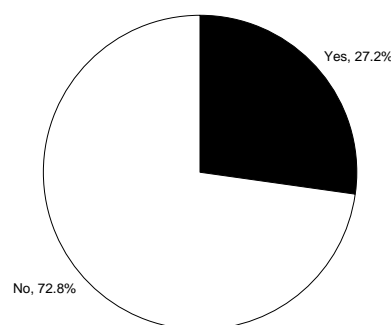
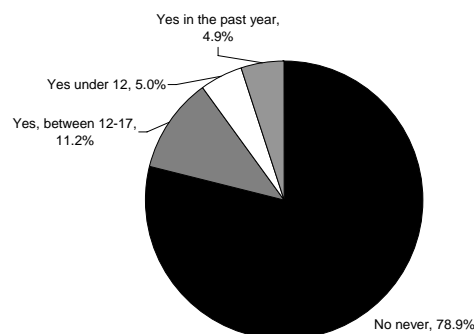


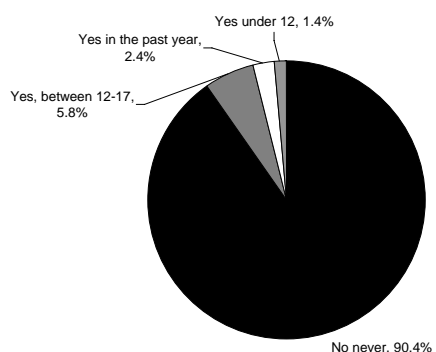
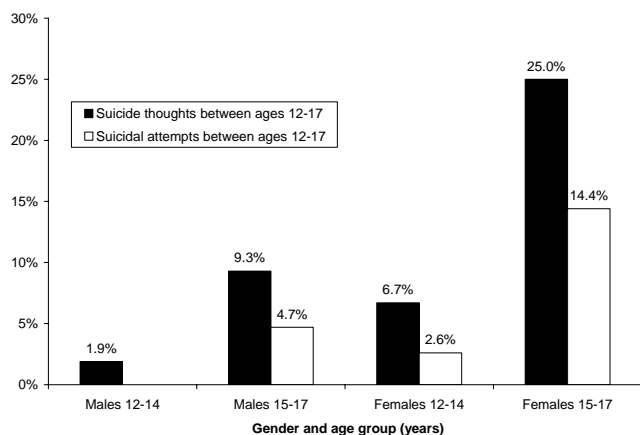
Figure 2. Percentage of youth with thoughts of suicide (n=4,694)



Possible interactions between gender and age in terms of having thoughts of suicide or making previous suicide attempts were also explored. Figure 4 illustrates these results. There was a significant relationship between age and gender, and having thoughts of attempting suicide and having made a previous suicide attempt during youth years. For the various age groups, females were more likely than males to have endorsed thoughts of suicide.

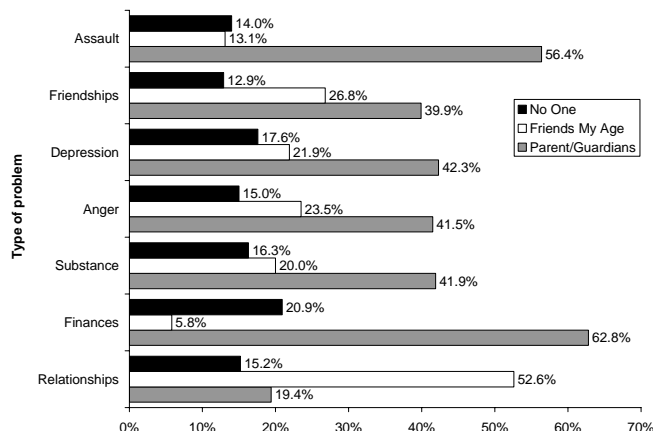
There was, however, no relationship found between youth having thoughts of committing suicide or making previous suicide attempts with the remoteness/isolation status or health transfer status of communities.

ⁱ To simplify the text, confidence limits are only reported for overall youth estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs.

Figure 3. Percentage of youth that attempted suicide (n=4,735)**Figure 4. Thought and attempt of suicide during adolescence by age and gender (n=4,694)**

Accessing help: Who do youth turn to for help?

When First Nations youth are dealing with problems, there is a small group of people that the majority consistently first turn to for assistance. Youth were asked questions regarding who they would go to first for help with; family problems, boyfriend/girlfriend relationship problems, financial problems, drugs or alcohol, anger or feeling out of control, depression, problems with friends, sexual or physical assault, sexually transmitted diseases, birth control and pregnancy. As a general finding, youth report that they will first turn to a parent or guardian for help with all problems except relationship problems with a boyfriend or girlfriend. With this issue they will first turn to friends their own age for help. The issues that youth seek assistance from parents/guardians, friends their own age and no one for are listed in Figure 6. One of the most concerning findings is the percentage of youth that will turn to no one when dealing with situations (that are risk factors for suicidal or other behaviors that harm personal wellness) that involve relationship problems, substance use and depression.

Figure 6: The first people youth go to for help with various problems (n=4,414+)

There are some youth issues which show variations with regard to the people first accessed for help. In getting help with family problems: 41.0% will go to a parent or guardian first, 27.3% will go to friends their own age first and 15.5% will go to other family members. If there is an issue with STDs: 45.1% will go to a parent or guardian first, 25.4% will go to a doctor/nurse/health aide first and 13.0% will go to no one. To get help with birth control: 42.9% will go to parents/guardians, 20.6% will go to a doctor/nurse/health care aide and 16.6% will go to no one. If there are issues regarding pregnancy: 47.6% will go to parents/guardians first, 15.5% will go to no one and 12.3% will go to a doctor/nurse/health care aide. With more physical or medically-related problems such as STDs, birth control and pregnancy, it appears from the data that (compared to the other psychosocial problems surveyed) youth are more willing to first consult health care professionals (if they are available) in their communities.

Accessing help: Use of Western-based mental health services and traditional healing

Traditional healers, counselors, psychological testing or any other mental health service provided are generally not consulted by the youth interviewed for this survey. This is consistent with the findings described in the section above relating to who youth normally consult first when faced with a variety of psychosocial problems (e.g.: parent or guardian). For example, only 1% of youth would go to a traditional healer first if they had a problem with depression and only 1.8% of youth would consult a doctor or allied health professional. There is no background information indicating whether or not the youth were in need of these sources but chose not to access them or whether lack of opportunity to consult these sources was a factor. Table 2 illustrates how few youth have used such services.

Table 2. “When did you last consult a traditional healer, counseling, psychological testing or any other mental health service”

Responses	Traditional Healer (n = 4,548)	Counseling, Psych. Testing, Other M.H. Service (n = 4,490)
Within the last 12 months	12.8%	10.5%
1-2 years ago	4.7%	4.9%
Over 2 years ago	4.4%	4.3%
I don't remember	13.1%	8.5%
Never	65.0%	71.8%

There was a significant relationship between gender and accessing mental health services, (with females more likely to have done so). 13.5% of females surveyed had accessed mental health services within the last 12 months versus 7.8% of males and 75.4% of male youth surveyed reported having never used any mental health services compared to 67.8% of female youth.

Summary of key findings

- The majority of youth respondents feel that they are in balance in terms of their physical, emotional, mental and spiritual aspects all or most of the time.
- 72.8% of youth reported that they have not ever felt sad, blue or depressed for 2 weeks in a row.
- Females report feeling depressed at rates approximately double that of males regardless of age.
- Feeling sad or depressed was not significantly associated with either the remoteness/isolation status of communities or health transfer status of communities.
- 78.9% of youth reported that they have not ever thought about committing suicide and 90.4% of youth reported that they have not ever made a suicide attempt.
- Females reported thinking about committing suicide and making a suicide attempt during their youth years (age 12-17) at significantly higher rates than males.
- Thinking about committing suicide and making an attempt at suicide was not significantly related to the remoteness/isolation status of communities.
- For a variety of psychosocial and medical problems, youth generally reported that they would first go to a parent or guardian for help; it was also important to note that youth reported (12.3%–20.9% of the time) they would not consult with anyone.
- Females accessed mental health services at significantly higher rates than males.
- 65% of youth report never consulting a traditional healer while 12.8% of youth had seen a traditional healer within the last 12 months.

Discussion

As shown in the data, the majority of First Nations youth report feeling in a state of balance in terms of their physical, mental, emotional and spiritual health. It may be more helpful in future studies to ask youth if they feel in balance in the holistic sense of their physical, emotional, mental and spiritual health. (Meaning assessment of all these aspects of health combined rather than separately).

The data also illustrates that female youth endorse depressive feelings in significantly higher numbers, (about double the rates of self-reporting male youth). This finding is consistent with previous studies, specifically the one noted earlier with Mi'Kmaq youth.¹⁴ This raises the issue of whether or not female youth actually experience depressive feelings in greater numbers or whether male youth are reluctant to self-disclose such feelings in a survey situation. The same gender pattern arose from the data on suicidality. There were significantly higher numbers of female youth who reported having suicidal thoughts and making previous suicidal attempts during their youth years. In the literature, it has been shown that females in general report greater suicidal thoughts and attempts while males complete suicide at higher rates than females.¹⁵ Again, it is not clear as to whether this represents an actual finding; (ie.: females do experience more suicidal thoughts and make more attempts, though less lethal, or whether males choose not to disclose their suicidal thoughts or previous attempts). There also remains the possibility of a gender difference related to suicide attempts in terms of male youth making impulsive suicide attempts with a higher potential for lethality. Future studies could ask both male and female youth about factors such as concurrent substance use (eg. alcohol) at the time of experiencing suicidal thoughts or making suicide attempts. Malchy and Enns found that blood alcohol levels were significantly higher in First Nations individuals who completed suicide in Manitoba and a greater proportion of the completed suicides were male (70%).¹⁶ Clarifying gender differences in suicidal behaviors may be helpful in terms of developing more effective suicide prevention programs for both male and female youth in communities.

For a variety of psychosocial problems, it was found that youth in general first go to a parent or guardian for help. Parents and guardians need to be prepared for this reality and have proper knowledge in order to help their youth with the issues they may be experiencing. This may involve a continuum of support ranging from developing parenting skills to ensuring parents are aware of the various health and social service agencies in the community and how to access them. The second group that youth are most likely to turn to for assistance is friends their own age. Friends may or may not have the necessary skills to help their peers through difficult situations. Service providers in First Nation's communities should consider developing programming

focused in areas of effective peer support. Developing community-based programs to support best practices in parenting and family wellness as well as promoting the roles and responsibilities of youth as peer counselors, natural healers and role models for one another was recommended by the Suicide Prevention Advisory Group.¹⁷

In terms of youth accessing mental health services, the data shows that the majority of youth have never accessed either Western-based services or consulted with a traditional healer. Consulting a traditional healer was not significantly related to the remoteness/isolation status of communities whereas accessing Western-based mental health services was. This makes sense in that many remote communities have limited access to physician services and little access to more specialized care such as psychological testing.¹⁸ Youth may be accessing service providers off-reserve that may not be accounted for in the data. They also may have had previous negative experiences with mental health services due to factors such as racism and a lack of cultural sensitivity in treatment approaches. There was a significant gender difference in accessing services, with female youth reporting usage of these services at higher rates than male youth. It is unclear whether this difference is related to female youth in distress being more readily identified (and subsequently referred for services) or whether male youth are reluctant to or unaware of how to access mental health services. Communities need to develop strategies for identifying youth at-risk or in distress and ensure that they are connected with appropriate assistance. It may be helpful to ask both male and female youth what they see as barriers to accessing mental health services as varying strategies may be identified for increasing the numbers of all youth who come forward to seek help. There are some innovative best practice models in communities. Eskasoni¹⁹ and Six Nations of the Grand River²⁰ offer comprehensive, holistic mental health services and are respectful of traditional ways so all community members, including youth, may achieve greater personal and mental wellness.

Finally, the RHS data examined did not reveal many significant relationships between factors including emotional wellness and suicidality similar to the findings of Chandler and Lalonde.²¹ It may be that the methodology used was unable to pinpoint such relationships or it may be that additional databases and sources of community information need to be incorporated to examine cultural continuity. For example, Chandler and Lalonde have found two new variables in their model: children in protective care and women in government.²² The current chapter also did not include in its analysis factors such as community control over education, police/fire services and the community having at least one designated facility for cultural activities. Future studies with the RHS data could also examine other possible protective factors against suicidal behavior such as nutritional status, exercise/activity levels, and participation in traditional and cultural activities.

Conclusions

The majority of First Nations youth surveyed felt in balance (physically, emotionally, mentally and spiritually). Many youth also report the absence of significant signs of emotional distress including: persistent feelings of depression, suicidal thoughts or having made previous suicide attempts. It can be concluded that many First Nations youth, despite the challenges of adolescence, self-report that they are doing well in terms of their mental and personal wellness. There is a smaller portion, however, who disclosed significant emotional distress, including feelings of sadness and depression lasting 2 weeks, having suicidal thoughts and making previous suicidal attempts.

It will be important for such youth to feel comfortable accessing mental health services in their communities, either through family and peer support, social and mental health service agencies or traditional healers. In developing more optimal suicide prevention programs for youth, it will also be critical to elicit factors that are protective against suicidal behaviours. The majority of First Nations youth, when faced with a variety of psychosocial problems, choose to first go to a parent or guardian for help. They also often choose to elicit help from friends their own age. Communities will need to consider developing parenting/family wellness and peer support programming so that these first-choice support systems are also able to assist youth in crisis. Low usage rates were reported by First Nations youth for both mental health services and traditional healers. As well, there exists a proportion of youth who report that they would consult no one if faced with a significant psychosocial problem. Communities could consider clarifying with their youth as to what their perceived barriers to access are. The optimal objectives would be to develop programming and improve access to mental health services that are holistic and comprehensive in their approach.

Recommendations/Solutions

- Future studies may want to ask youth more contextual questions concerning suicidal behavioural thoughts and attempts (For example, whether or not substance use was involved). This information may be helpful in customizing suicide prevention programs for both male and female youth.
- Communities could consider broadening the spectrum of services by developing family wellness and peer support programs that provide holistic health services for youth to assist them in times of distress.
- It may be helpful for communities to consult with youth to understand their perceived barriers in accessing mental health services and traditional healers.
- Communities need to develop strategies to identify youth at-risk and ensure that mechanisms are in place to connect youth with appropriate services.

- Future studies utilizing the data from this round of the RHS may wish to explore other possible protective factors against mental breakdown (particularly suicide) at the individual and family levels. For example, promoting and implementing the benefits of good nutritional status, healthy exercise/activity levels, educational attainment and participation in traditional and cultural activities are proven protective factors.
- Future studies may want to take a different approach to examining the concept of cultural continuity and its relationship to youth suicide. This is important because Chandler and Lalonde's work outlines community-level factors that can be protective and can translate into reduced youth suicide rates, with the ultimate benefit for the entire community.^{23, 24}

Notes to Chapter 25

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4. "The Health of the Nova Scotia Mi'kmaq Population (1997)," *The Health of Canada's Children: A CICH Profile*, 3rd Edition (Ottawa, Ont.: Canadian Institute of Child Health, 2000), p. 164.
5. Suicide Prevention Advisory Group, *Acting on What We Know: Preventing Youth Suicide in First Nations* (Ottawa, Ont.: Health Canada, 2002), p. 17.
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8. *Ibid.*, p.23.
9. Health Canada, *A Statistical Profile on the Health of First Nations in Canada* (Ottawa, Ont.: First Nations and Inuit Health Branch, Health Canada, 2003), pp. 34-35.
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13. "The Health of the Nova Scotia Mi'kmaq Population (1997)," *The Health of Canada's Children: A CICH Profile*.
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23. Chandler and Lalonde, Cultural continuity as a hedge against suicide in Canada's First Nations, *Transcultural Psychiatry*.
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The Health of First Nations Children



Chapter 26

Household Structure, Income, and Parental Education

Abstract

Based on the 2002/03 First Nations Regional Longitudinal Health Survey (RHS) study of children (under age 12) in First Nations communities, observations were made about children's families, households, and childcare arrangements, and about the parents' physical assets and educational resources. The resulting descriptions of children's situations in First Nations communities were not unexpected. Surrounded by family even when in childcare, most children were well rooted in their family and community. Some children were given the experience of formal childcare situations that had the potential to meet the child's developmental needs as well as their parents' need for childcare while in school or at work. The physical and educational resources of parents and other household members continue to lag seriously behind the Canadian population. Fewer children in large First Nations communities were in childcare situations and more lived in crowded homes compared to mid-size communities. More children in non-isolated communities had family and housing resources than those in communities that were isolated.

Introduction

This chapter lays the foundation for interpreting the health of children living in First Nations communities through a description of their family, household and childcare situations. Some of these situations have been shown to be influential determinants of health, especially for children. The enquiry is intended to describe the extent to which these children are potentially connected to and involved in their families. Following this, there will be an examination of some of the resources available to the families that might affect their physical and cultural well-being, as well as the health of their children.

This chapter is written primarily from a perspective that utilizes a First Nations cultural framework. The main starting points include consideration of the “total health” of the total person in the “total environment”. This chapter is mainly focused on family and community environments of children in First Nations communities.

While children are individuals, this chapter focuses on the physical and social environments in which they live. The children are seen in the context of their families and households (considered to be primary influences for the health and balance of body, mind, heart and spirit).

Descriptions of the families and households include information about household size, living with parents or others, living in households with extended family members, living with other children and youth, and childcare arrangements.

In addition to the makeup of the families and households, there is also concern for the physical surroundings of the children. Housing conditions are part of the very personal physical environment of the children. Crowding especially has implications for potential connections to family and other household members. Characteristics of a child’s community can also be indicators of Euro-centric influence.

Regarding resources available to First Nations children, the survey includes information about housing size, extent of crowding, household income, and parental education.

Community characteristics that might affect resources or extent of exposure to Western culture are community size and extent of the community’s geographic isolation.

For the most part, only those differences that were both socially and statistically significant were reported.ⁱ

ⁱ There were two criteria for whether differences were significant – social and statistical. Socially significant differences, although they may be based on quantitative data, are usually focused on whether the observable differences really matter in the real world. In this chapter, differences of about 10% from one group to another were usually considered socially significant, although this was not a rigid criterion. Readers may have different criteria than the authors. Statistically significant differences are mathematically derived and have to do with the accuracy of the estimates. Estimates of percentages and means that are based on samples are not exactly transferable to the populations that the samples represent. Each estimate comes with a range of values around it (a confidence interval) that describes all the possible values that the percentage or mean can take in the population. Hence, in this chapter, statistically significant differences are concluded when the 95% confidence intervals did not overlap.

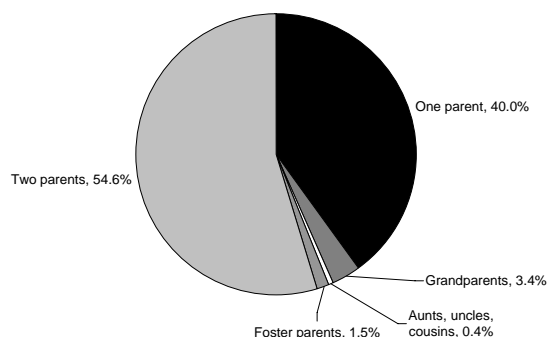
Results and Discussion

Family and household structure

Two-thirds (66.3%)ⁱⁱ of the children living in First Nations communities lived in households with five or more people, mostly family. The majority (83.2%) lived with two adults or more; one-third (38.0%) lived with three children/youth or more (children and youth other than themselves). The number of household members ranged from two to twenty-two with a mean of 5.5. Adults living in the household ranged from one to eleven, with a mean of 2.3. The number of children and youth ranged from age one to seventeen (including children in the survey) with a mean of 3.1.

Almost all children living in First Nations communities (94.6%) lived with one or more parents (biological, adoptive and/or step).

Figure 1. Parents or other relatives as caretakers in families of First Nations children (n=6615)



Statistics Canada states that 65% of Aboriginal children living on reserve (under age 15, compared to RHS children reported here under age 12) resided with two parents, and 33% resided with a lone parent.¹ Aboriginal children living in census metropolitan areas lived in equal numbers in two-parent and lone-parent households.² In comparison, 75% of Canadian families with children under age 15 in 2002 lived with two parents.³

In children’s households with one or more parents present, 37.9% had other adults living in the household.ⁱⁱⁱ This was true for a larger proportion of households with one parent present than households with two parents (61.4% vs. 24.6%). About half of the households with parents and other adults included grandparents (16.5% of all households), and about half included aunts, uncles or cousins (15.5%).

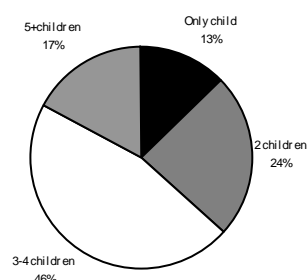
ⁱⁱ To simplify the text, confidence limits are only reported for overall children estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

ⁱⁱⁱ Comparisons between groups reported in this chapter are all significant unless “NS” —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

In comparison, only 2% of Canadian families were multi-generational in 2001.⁴

Most of the children lived in households with other children and/or youth (87.3%).

Figure 2. Numbers of Children and/or Youth in Families of First Nations Children (n=6637)



In the 1997 National Health Survey of First Nation and Labrador Inuit communities, the predecessor to this study, the mean number of children and youth below age 17 was 2.6 (compared to the current 3.2).⁵ Statistics Canada states that in 2001, of families with children at home in Canada, 43% had one child, 39% had two, and 18% had three or more.⁶

Childcare arrangements

When parents made childcare arrangements for their children, the children were most often cared for by relatives (thereby remaining with family when the parents were away). Some children traveled outside their home for childcare, but a substantial portion did not leave their own homes.

About one-third of the children had childcare arrangements made for them when parents were away for work or school (34.7%). Of the children in childcare settings, over half were cared for by relatives in home settings (59.2%). Of all the children with childcare arrangements, more than twice as many were cared for in homes (64.7%) as were cared for in more formal settings (31.3%). For those in homes, they were equally divided between their own homes and the homes of others, most of them cared for by relatives.

Statistics Canada reports that over half of children from six months to five years of age (including children from some participating reserves) were in some form of childcare in 2000/01.⁷ The RHS statistics for children living in First Nations communities were lower for ages one to five, at 44.3%. The forms of childcare also differed. Canadian children aged one to five were much more likely to be cared for in a home than a day care centre (75.0% in homes vs. 25.0% in centres, compared to 54.8% in homes vs. 42.8% in centres for children aged one to five in First Nations communities). Another major difference is that Canadian children cared for in homes were more likely to be cared for

by non-relatives than relatives (43.4% vs. 31.5% of those in care). On the other hand, children in First Nations communities had very few non-relative caretakers compared to those who were relatives (4.6% vs. 50.2% for ages one to five).

Table 1. Percentage of children in child care with setting and caretaker variations in Child Care arrangements (n=2171)

Caretaker	Location			
	In homes		In formal settings	
	64.7%		31.3%	
	Child's own home	Others' homes	Nursery or pre-school, day care centers or private home day care	Before and after school programs
	32.7%	32.0%	27.9%	3.4%
Siblings	9.1%			
Another relative	21.0%	28.9%		
Non-relative	2.6%	2.4%		

Income and housing resources

Although the children in this RHS study were apparently surrounded by family, they were not as exposed to material affluence. With an average (mean) household size of 5.5 adults and children, the households with children had a median household income of \$19,716, and the median number of rooms was 6. In the RHS adult survey, for households with no children, the income is higher (median = \$27,970) and the median number of rooms is lower (5).

In households with both parents present, the median income was \$27,385, compared to households with one parent present, where the median income was \$17,737. Statistics Canada reported much higher median household incomes for Canadian families, at \$64,704 for two parent families and \$31,200 for lone parent families.⁸

The number of rooms ranged from 1 to 13 or more. One of the most widespread mainstream indicators of crowding used by Western nations defines households as crowded if there is more than one person per room.⁹ Using this standard, 32.1% of First Nations households with children were crowded. Given that only 1% of households in the RHS adult survey with no children or youth in residence have crowding, it can be concluded that almost all of the households defined as crowded include children.

The Treasury Board reported that, in 2001, 17% of off-reserve Aboriginal people lived in crowded conditions (down

5% from 5 years earlier) and that about 7% of all Canadians lived in crowded conditions.¹⁰ Given that the First Nations population is increasing, the need for additional appropriate housing may grow even as solutions are implemented. In March 2003, there was “an existing shortage of 20,000 housing units and a requirement of 4,500 new units per year”¹¹ in First Nations communities.

As one would expect, the percentage of children in crowded living situations was greater for households with more household members. In households with four or fewer members, crowding occurs 6% of the time. For households of five, the rate is 14%, but for larger households the rate increases dramatically, with 46% for households of six and 92% for households of nine or more. The pattern is similar when the number of children in the household is taken into consideration (although crowded conditions occur for over 95% of households with seven or more children).

Table 2. Percentage of children living in homes with more than one person per room by household size and number of children/youth (n=6600)

	Estimate of % hh with crowding	
	Based on number of household members	Based on number of children and youth in households
All hh with children	32.4%	32.3%
Hh of 1 child	n.a	3.9%
Hh of 2 persons/children	-	14.8
3	-	17.8
4	8.5	47.2
5	14.2	68.9
6	45.6	85.3
7	60.6	96.7
8	71.3	90.6
9+	92.2	100.0

- Data suppressed due to insufficient cell size.

Parental education

The following educational patterns for the parents of children should not be assumed to represent the highest potential for educational attainment in a lifetime. Not only are many First Nation parents still high-school age, it has been shown that many First Nations adults return to school for post-secondary education after a break of some years.

About half of the mothers and fathers of the children in the survey had graduated from high school (see Table 3). About half of those who had graduated from high school had gone on to obtain a diploma from a university, college, technical

or vocational school, while a small minority had obtained a bachelor's or master's degree or doctorate.

Table 3. Children's parents' education

Highest level of formal schooling	Mother's education (n=6401)	Father's education (n=5566)
Less than high school	46.0	56.6
High school graduate	24.4	20.3
Post-secondary diploma	24.5	20.4
Bachelors	5.0	2.6
Masters or doctorate	-	-

- Data suppressed due to insufficient cell size.

Parental education varies with a number of variables (See Table 5). For parents with more education:

- the median income of the household in which the child lived was greater
- more children had childcare arrangements made for them
- a higher percentage of homes had both parents present.

Table 5. Children's household income, childcare arrangements and household structure by parents' education.

	< HS	HS grad	Diploma, etc.	Bachelors, plus
Mother				
n=	3019	1451	1533	257
Median Income	\$15,611	\$23,170	\$30,458	\$56,843
Child care	29.5%	33.4% (NS)	45.1%	41.2% (NS)
Two parent hh	51.0	58.6 (NS)	56.4 (NS)	70.1
Father				
n=	3090	1072	1194	160
Median Income	\$17,037	\$24,592	\$36,056	\$65,158
Child care (ns)	33.9	37.7 (NS)	36.6 (NS)	40.7 (NS)
Two parent hh	59.5	57.4 (NS)	69.8	73.0 (NS)

Community characteristics

Communities of different sizes differed on two characteristics: their households and childcare situations. Large communities were different from mid-size

communities, while non-isolated communities were most different from remote, isolated and semi-isolated communities.

There were no socially or statistically significant differences in numbers of household members for communities of different sizes with regard to their relationships to children and parents' education; however, there were differences in childcare arrangements and the extent of crowding. In a comparison of situations with children in large and mid-size communities, more children in large communities lived in crowded homes while fewer children were in childcare situations. Small communities (<300 persons) were not statistically significantly different than mid-size or large communities. This may sometimes be due in part to the small sample size from small communities.

Table 6. Childcare and crowding variations by community size (n=6,627)

	Community size		
	Small	Mid-size	Larger
Childcare % in cc (n=6554)	33.3	37.6 (NS)	30.5*

*Significantly different from mid-sized communities only.

More children in non-isolated communities:

- Came from two-parent households than children in semi-isolated communities;
- Were in formal childcare situations compared to children in remote and isolated communities;
- Had more rooms in their houses and less crowding; and,
- Had mothers who were high school graduates or had post-secondary education.

Remote isolated, isolated and semi-isolated communities tended to be similar with regard to:

- Children coming from two-parent households;
- The percentage of children in formal childcare situations (not including semi-isolated);
- The number of rooms and crowding rates; and,
- The mother's education.

The pattern for children in remote isolated communities was unique in that households with children had a much higher median income.

Table 7. Household and childcare variations by degree of isolation of community (n=4600)

	Isolation status			
	Remote isolated	Isolated	Semi-isolated	Non-isolated
Two parent households				
%	49.2 =	51.3 =	45.6	56.5 =
Childcare				
% in formal cc	-	12.2	40.0	34.8
Housing				
Median # rooms	5	5	5	6
% HH w crowding	47.7	45.6	46.4	25.8
Parents education: % HS Grad and above				
Mother	37.8	41.2	42.9	59.6
HH income median	\$36,553	\$18,035	\$18,185	\$21,026

*The dark bar between two adjacent cells indicates a statistically significant difference based on non-overlap of confidence intervals. A light bar indicates overlap.

= in two non-adjacent cells indicates no statistically significant difference.

- Data suppressed due to insufficient cell size.

Conclusions and Recommendations

Conclusions

Children living in First Nations communities who were surveyed for the RHS were surrounded by family (both nuclear and extended) in households with many members. Almost all of these children lived with their parents and most lived with siblings or other related children. Of the one in three children with childcare arrangements, over half were cared for by relatives in home settings.

There is considerable evidence that children who have been exposed to formal childcare situations have fewer problems in school. Canadian children in the National Longitudinal Survey of Children and Youth who attended day care and pre-school prior to Kindergarten had an advantage with regard to reading, writing, math and communication skills in Grade 1 (compared to children who attended only Kindergarten or stayed at home until entering Grade 1).¹² Children in First Nations communities were in formal childcare situations more often than all Canadian children, but how this translates into formal educational advantages is yet to be determined. This may be because certain developmental needs related to education are met in day care that are not met by in-home childcare provided by relatives.

Although the children were apparently surrounded by family resources, they were not as exposed to material affluence. Median incomes for households with children were considerably below the Canadian population. Crowding (defined as more than one person per room) was a problem for almost one in three children and was serious for over two-

thirds of all children living in households with five or more children.

While the standards to measure crowding employed in this report might be labeled as “Western”, the problem of crowding is still real. For many First Nations families, the preference is for living with extended kin. Nevertheless, where there is a housing shortage, this may be a necessity. In other instances, the typical houses are too small and the resources for enlarging the houses do not exist.

Recommendations

Given that children have multiple needs that may be met by different situations, a combination of quality childcare arrangements that include time spent at home with family and time spent in more formal child care situations could be ideal for First Nations children. Where possible, this opportunity should be provided for stay-at-home parents as well. Given that this situation already exists through many early childhood programs, the question on the future questionnaires might be amended to capture this dual arrangement situation.

Recommendations about crowding are apparent. Appropriate housing is urgently needed to accommodate the preferences of some First Nations families for living with extended family and the need for adequate space in these large households. At the same time, where the large households are the result of an inadequate supply of houses, more houses are needed.

Notes to Chapter 26

1. Statistics Canada, “The People: The Population: Aboriginal Peoples,” *Canada e-book* [online]. 2003. Available from World Wide Web: <<http://www.statcan.ca>> Canada e-book > the People > The Population > Aboriginal Peoples.
2. Ibid.
3. Statistics Canada, “The People: Household and Family Life: Family Arrangements,” *Canada e-book* [online]. 2003. Available from World Wide Web: <<http://www.statcan.ca>> Canada e-book > the People > Household and Family Life > Family Arrangements.
4. Ibid.
5. Harriet MacMillan et al., “Children’s Health,” *First Nations and Inuit Regional Health Survey, National Report, 1999* (Ottawa, Ont.: First Nations and Inuit Regional Health Survey National Steering Committee, 1999).
6. Statistics Canada, “The People: Household and Family Life: Children,” *Canada e-book* [online]. 2003. Available from World Wide Web: <<http://www.statcan.ca>> Canada e-book > the People > Household and Family Life > Children.
7. Statistics Canada, “Child Care,” *The Daily*, February 7, 2005 [online]. Available from World Wide Web: <<http://www.statcan.ca/Daily/English/050207/d050207b.htm>>.
8. Statistics Canada, “The People: Household and Family Life: The Family Budget,” *Canada e-book* [online]. 2003. Available from World Wide Web: <<http://www.statcan.ca>> Canada e-book > the People > Household and Family Life > The Family Budget.
9. Andrew Jackson and Paul Roberts, *Physical Housing Conditions and the Well-Being of Children* (Ottawa, Ont.: Canada Council on Social Development, 2001).
10. Treasury Board of Canada, “Aboriginal Peoples,” *Canada’s Performance 2004* (Ottawa, Ont.: Treasury Board of Canada Secretariat, 2004).
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Chapter 27

Language, Culture, Headstart and School

Abstract

Children living in First Nations communities typically live in a bi-cultural world. Parents and grandparents highly value their children's knowledge of First Nations languages and their experiences of traditional cultural events. At the same time, they assessed the academic performance of their own children in Eurocentric school systems as average or above average. Through family, community members and some schoolteachers, the potential exists for most children to remain connected to the traditional cultures of their First Nations, and, to a lesser extent, to their First Nations languages. Aboriginal Head Start, a variation of the original Head Start program in the U.S., was designed to bridge the gap between home and school environments. The data in this study indicated that Aboriginal Head Start attendance lowered the chance of children repeating grades in elementary school.

Introduction

This chapter focuses on the relationship that Aboriginal children have with their traditional culture and language. It also takes note of the people from whom they learned their First Nations language and from whom they learned about their traditional culture. School experiences were examined briefly, as these are often environments where both traditional and Western cultures are transmitted.

This chapter is written primarily from a First Nations perspective, considering the total health of the total person in the total environment, and reflecting a belief that body, mind, heart, and spirit are necessary aspects of a total person. The data are mainly focused on spirituality and connectedness, as well as school experiences related to the mind and learning, for children living in First Nations communities.

Traditional culture

We are particularly concerned with children's involvement in their respective traditional First Nations cultures. This chapter focuses on the documentation of the types of people who help children understand their traditional cultures.

With regard to the child's connectedness to traditional culture, information was gathered from the point of view of the parent, grandparent or guardian who answered the questionnaire on the child's behalf about:

- The importance for the child of having knowledge of a First Nation/Inuit language;
- Experiences of traditional cultural events;
- First Nation/Inuit languages understood and spoken by each child; and,
- Family and community sources of help with a child's cultural understanding, including Aboriginal Head Start and schoolteachers who help children understand their traditional cultures.

School experiences

School experiences are a necessary component of every child's life. They may partly complement traditional cultural socialization, but definitely emphasize Western learning styles, models of education, and dominant cultural expectations with regard to the greater importance assigned to some kinds of intelligences over others. The disconnect between Western approaches to education and the needs of Indigenous communities is obvious; one only need consider the high percentage of First Nations children who repeated grades in a school system that was imported to their communities. Aboriginal Head Start is an attempt to bridge the gap between traditional and home cultures and the bi-cultural school environment.

With regard to school experiences, the information gathered includes:

- Assessments of the children's academic performance by parents, grandparents or guardians who answered the questionnaire;
- Whether the children have skipped or repeated grades; and,
- Whether the children have been in the Aboriginal Head Start program.

Community

For community characteristics, information was gathered about:

- Community size (with its potential effect on resources); and,
- Relative isolation of the communities in which the children lived (with its potential for limiting or increasing exposure to Western cultures).

From a First Nations perspective, there are some exceptions to the First Nations orientation of this chapter. These exceptions include: a comparison of children's achievements to those of other children; and, the assumption that math and English or French language capabilities are the most important capabilities for judging the academic abilities of a child (related to the pattern of repeating grades).

For the most part, only those differences that were both socially and statistically significantⁱ were reported in this chapter.

Results and Discussion

Language and Culture

Learning a First Nations/Inuit languageⁱⁱ and having traditional cultural events in a child's life were considered important by a majority of the people who answered the questionnaires about the children (92.9% and 83.2% respectively – see Table 1).^{iii iv} Parents of First Nations children not living in First Nations communities were asked the same question about the importance of their children speaking and understanding an Aboriginal language. More parents and grandparents of children in First Nations

ⁱ There were two criteria for whether differences were significant – social and statistical. Socially significant differences, although they may be based on quantitative data, are usually focused on whether the observable differences matter in the "real world". In this chapter, differences of about 10% from one group to another were usually considered socially significant, although this was not a rigid criterion. Readers may have different criteria than the authors. Statistically significant differences are mathematically derived and have to do with the accuracy of the estimates. Estimates of percentages and means that are based on samples are not exactly transferable to the populations that the samples represent.

ⁱⁱ Although the general questions referred to First Nation/Inuit languages, only 8 Inuit children (ages 3 to 11, unweighted) were said to understand or speak Inuktitut. An additional 8 of them had only a few words in their vocabulary. Based on this statistical insignificance, the references to Inuit languages will be dropped from the report on the findings.

ⁱⁱⁱ For clarification purposes, since 96% of the people who answered the questionnaires for the children were parents and grandparents, they are referred to as such.

^{iv} To simplify the text, confidence limits are only reported for overall children estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

communities felt that learning an Aboriginal language was very or somewhat important (93% vs. 67%).¹

Table 1. Importance of traditional culture in children's lives* (n=6565)

Importance	Importance of child learning First Nations languages	Importance of traditional cultural events in child's life
Very important	64.3	44.5
Somewhat important	28.6 ^v	38.7
Not very important	4.8	9.6
Not important	2.3	7.1

* As assessed by parents, grandparents or guardians.

Children's actual knowledge of First Nations languages lags behind their parents'/grandparents' sense of the importance of such knowledge. Parents and grandparents who spoke a variety of First Nations languages were queried about the level of each child's understanding of and speaking skills in the language. The questions asked about the extent to which each language could be understood and spoken (fluently, relatively well, a few words, or not at all). Generally, more children understood than spoke their First Nations languages. 25.2% of children aged 3–11 were able to understand a First Nation language fluently or relatively well, and 19.3% were able to speak the language fluently or relatively well. Broken down by age category, the ability to understand and speak fluently or relatively well improved with age, possibly reflecting developmental stages in language acquisition:

- For children aged 3–5, the findings were 18.6% for understanding and 13.3% for speaking.
- For children aged 6–8, the findings were 25.5% for understanding and 19.2% for speaking
- For Children aged 9–11, the findings were 31.2% for understanding and 25.1% for speaking.

Table 2. Percentage of children who understand and/or speak a First Nation language fluently or relatively well

Age (years)	Understanding one or more First Nation languages fluently or relatively well (n=5929)	Speaking one or more First Nation languages fluently or relatively well (n=6147)
3-11	25.2	19.3
9-11	31.2	25.1
6-8	25.5	19.2 (NS)
3-5	18.6	13.3 (NS)

According to the 2001 Aboriginal People's Survey, 25% of First Nations children (aged 3–14) living off-reserve could speak or understand an Aboriginal language, which is consistent with RHS findings.²

^v Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

There were 26 First Nations/Inuit languages that children had the ability to understand or speak fluently or relatively well. Of these languages, more children had understanding of Cree (6.5% of all children surveyed), Oji-Cree (2.6%), Ojibway (2.2%, C.I. 1.0%–4.7%) and Montagnais (2.0%) than other First Nations languages. Languages understood fluently or relatively well by 1% or more of the children were Mi'kmaq (1.6%) and Attikamekw (1.3%).

Parents and grandparents frequently expressed satisfaction with a child's knowledge of their First Nation language. The level of satisfaction for parents and grandparents of all children was 58.9% (19.1% very satisfied and 39.8% satisfied). For parents and grandparents of children ages 3 to 11, the level of satisfaction was 57.9% (satisfied or very satisfied). A similar question about children's knowledge of 'Native culture' in the previous RHS (1997) showed that 69% of respondents were satisfied or very satisfied. However, it should be noted that the earlier question was about culture and the later one was about knowledge of language.³

Satisfaction with a child's knowledge of the language of their First Nation was somewhat related to both the extent of the child's knowledge and the importance placed on it by the person, usually a parent or grandparent.

As reflected in Table 3, satisfaction levels break down as follows for parents or grandparents who felt that knowledge of a First Nation language for their children (aged 3–11) was very important or somewhat important:

- Satisfaction levels were higher for parents/grandparents of children who had knowledge of a First Nation language (over 83.6% satisfied or very satisfied).
- Satisfaction levels were lower, but not insubstantial, for parents/grandparents of children who had little or no knowledge of a First Nation language (48.2%).

Table 3. Satisfaction levels* (satisfied and very satisfied) with knowledge of First Nations language of Children aged 3–11, compared to levels of understanding and speaking (n=2957)

	Understanding one or more First Nation languages	Speaking one or more First Nation languages
Fluently or relatively well	83.6	89.5
Few words or none	48.2	49.5

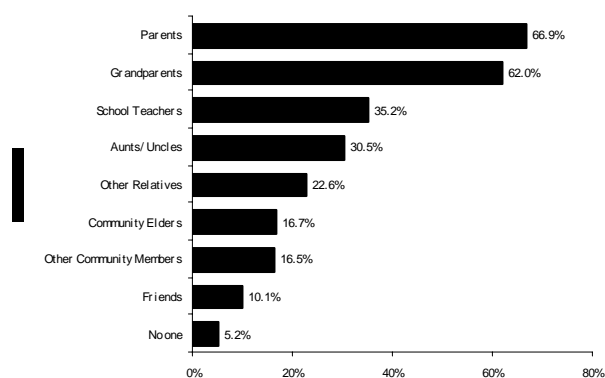
* Of parents/grandparents who consider such knowledge as very important or somewhat important.

Similarly, data from the 1997 RHS survey indicates that the satisfaction with a child's knowledge of Native culture was based on whether the child understood and spoke an Aboriginal language or not.⁴ The majority (81.0%) of children aged 6–11 speak English fluently, and 3.1% speak French fluently.

Family and community sources of help with understanding culture

An inquiry into the types of people who have helped the child understand his or her culture showed that parents and grandparents were the most mentioned (over 60% each). School teachers were mentioned as often as aunts and uncles (approximately 30 to 35% each), but less often than parents and grandparents. Other people who were cited as being influential in the children's understanding of their culture were: other relatives, community Elders, other community members, and friends (ranging from 23% to 10%).

Figure 1. Relatives and community members involved in helping children understand their culture (n = 6422)



A similar question about family and community members who helped off-reserve First Nations children to learn a First Nation language was asked in the 2001 Aboriginal People's Survey (APS). Although the APS analysis was limited to children who had any capacity in speaking or understanding an Aboriginal language, the results were almost exactly the same as the RHS responses for the question about those helping children with cultural understanding. The one difference between the two surveys was that, for off-reserve First Nations children in the APS, grandparents were cited less often (55% compared to 62.0% in the RHS).⁵

A small minority (5.2%) said that there was no one helping the child with cultural understanding, and this was mostly attributable to results regarding very young children (16.6% for those under 1 year of age and 9.7% for those aged 1 to 2 - significantly lower than the results for those aged 6–11). The 2001 Aboriginal Peoples Survey showed a relationship between the number of sources of help in learning a language and the ability to do so. "The more a child can rely on multiple sources for learning an Aboriginal language, the more likely they are to speak and understand well an Aboriginal language".⁶ For Inuit, First Nations and Métis children not living in First Nations communities, the rates of those who can speak and understand an Aboriginal language was 15% for those with one source of help, 38% for those with three sources of help, 54% for those with five, and 80%

for those with seven or more. The difference between the questions posed in the APS and RHS should be noted. The 2001 Aboriginal People's Survey asked about sources of help in *learning the language* while this RHS study asked about sources of help for *cultural understanding*. The number of types of sources of help in *cultural understanding* for children from First Nations communities ranged from 0 to 8 in the RHS. The number of types of cultural sources in the RHS was related to a child's reported *understanding or speaking a First Nation language*. (See Table 4) However, the relationship in the RHS was not as strong as it was for First Nations children not living in First Nations communities surveyed in the APS.

Table 4. Number, types and sources of help for children to understand culture (n = 6657)

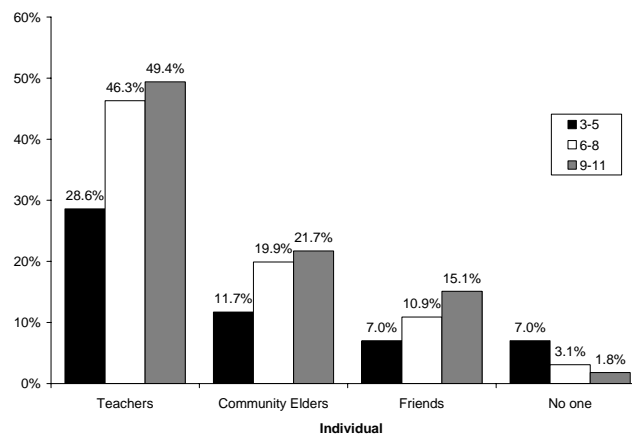
# sources	% of all children (n=6659)	% Understanding a FN language* (n=5398)	% Speaking a FN language* (n=5400)
0	4.1	-	-
1	31.3	17.2 (NS)**	13.5 (NS)
2	22.2	27.6	22.9
3	17.1	24.2 (NS)	17.9 (NS)
4	11.4	39.2	24.7
5	6.5	26.3 (NS)	21.2 (NS)
6	3.3	30.0	23.6
7	2.0	33.5	30.4
8	1.9	35.4	32.5

* children 3 – 11 years.

** not significantly different from 0 sources.

The network of people helping children to understand their culture expanded for older children. Relatives were as likely to be involved with children of all ages. Teachers, community Elders, community members (only for 9-11 year olds compared to 3-5 year olds) and friends (only for 9-11 year olds compared to 3-5 year olds) were more involved as the children got older. At the same time, 3 to 5 year olds are reportedly more likely to have no one involved in helping them understand their culture, compared to 9 to 11 year olds (7.0%, compared to 1.8%).

Figure 2. Community members involvement in helping children understand their culture by age of children (n = 6422)



In addition to expected age differences, there were other variations in children's language and cultural experiences

and comprehension that could be associated with variations in parents' education as well as size and relative isolation of communities.

Parents' education levels apparently influenced First Nation language abilities and whether or not the parents helped with the traditional cultural socialization of children aged 3 to 11 (See Tables 5 and 6).

- Mothers and fathers who had not completed high school were more likely to have children who understood a First Nation language.
- More parents were cited as involved in their children's understanding of their culture when the mothers had completed some post-secondary education.

Table 5. Education of parents and child's ability to understand/speak first nations languages (n= 5204)

Parents' education level	Child's ability to understand 1+ FN languages	Child's ability to speak 1+ FN languages
Mother		
Not completed HS	29.9	21.1
HS grad +	21.2	17.5 (NS)
Father		
Not completed HS	29.0	20.7
HS grad +	20.6	17.5 (NS)

Table 6. Education of parents and parental involvement in helping children (ages 3-11) understand culture (n=3477)

Parents education level	% of children whose parents helped them understand culture
Mother	
Less than HS, HS Grad	65.8%
Post-secondary	72.4%
Father	
Less than Bachelors	67.4%
Bachelors +	74.2%

First Nations children not living in First Nations communities also had different rates of understanding and speaking a First Nation language that depended on the educational levels of parents. Thirty-three percent of the off-reserve children whose parents who had not gone beyond elementary school were rated as having language ability, compared with 21% for those whose parent had completed some type of post-secondary education.⁷ Children living in First Nation communities had a language capability rating of 29.9% for those with mothers who did not graduate from high school and 21.2% for those whose mothers had post-secondary diplomas and degrees.

Pre-school, Head Start and schooling

The formal school system in Canada reflects a design applicable mainly to those who, like the designers of the system, are inclined to what is sometimes called an auditory-sequential learning style⁸. Although schools are changing as a result of audio-visual modes of instruction and computers, the system is still dominated by curricula appealing to audio-sequential learning styles. These styles work particularly well for learning in the areas of mathematics and language. The result is a system that falls short of meeting the needs of many children who have different learning styles than those valued by the most influential educators. Silverman estimates that about one-third of students in U.S. schools are visual-spatial learners and that, while they are gifted, they are often labeled as 'underachievers'- or even outright "failures", many of whom drop out.

There is some consensus concerning the impact that cultural bias in texts and other learning tools have on children from the non-dominant cultures. This observation was a driving force behind the development of the Aboriginal Head Start program in Canada. Although the primary purpose of the program is to improve math and language capabilities, Head Start has been redesigned for Aboriginal children in Canada, to ease the transition from home to school. The curriculum deliberately includes, and is to some extent based upon, many aspects of the traditional cultures of the children attending.^{vi} Many teachers that are part of the regular school system in First Nations communities have also included traditional cultural knowledge in the classroom (this is statistically supported in that school teachers were named as helpers in understanding traditional culture for 49.4% of 9 - 11 year olds in this study).

Parents and grandparents assessed their children's scholastic aptitude relative to other children in the same grade based on report cards and schoolwork. Almost half (47.2%) of the children attending school were assessed as average. Of the remaining children, more were considered above average or slightly above average (40.2%) than were considered below average or slightly below average (12.6%).

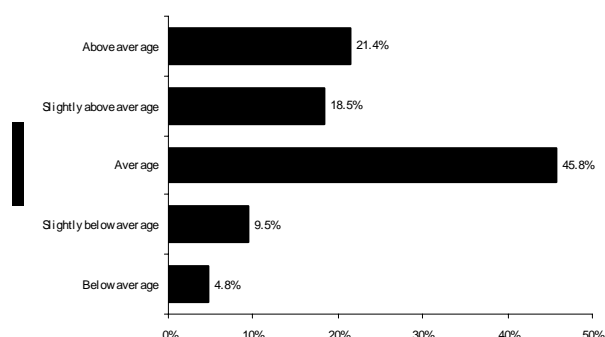
In contrast to the beliefs of parents and grandparents, 3.7% of 6 - 11 year olds had skipped a grade, while over 4 times as many (18.0%) had repeated a grade (See Table 7). Among 9 - 11 year olds, 3 of 10 boys and 2 out of 10 girls had repeated a grade. Children were more likely to have repeated a grade if they came from households with incomes less than \$30,000 (21.7%, vs. 8.7% for those from households with incomes over \$30,000).

Similar patterns were seen for Aboriginal children aged 6 to 14 not living in First Nations communities. The income comparison used was household income below or above the low-income cut-off (with 16% repeating a school year for

^{vi} This typically includes First Nations languages, songs, stories, and other activities as well as posters and other visual representations

those from households below the cut-off compared to 10% for those from households above).⁹ Children of parents with less education were also more likely to repeat a grade in the APS survey.¹⁰ For children in First Nations communities surveyed in the RHS, repeating grades did not vary by parents' education enough to be statistically significant.

Figure 3. Parents' and grandparents' assessments of children's academic performance (n = 3000)*



* Ages 6 to 11.

Table 7. Percentage of children repeating grades (n=2662)

	Percentage of children
Ages 6-11	18.0
Ages 9-11	
Boys	30.2
Girls	19.0
Ages 6-11	
HH income <\$30,000	21.7
HH income \$30,000 +	8.7

Attending Head Start did appear to have an affect on whether children (ages 6–11) had ever repeated a grade. Those who had attended Aboriginal Head Start had a repeat rate of 11.6%, while those who did not attend Aboriginal Head Start had a higher repeat rate of 18.7%. An interesting finding from the National Longitudinal Study of Children and Youth, which cannot be replicated with RHS data, was that reading to a child daily during their second and third years leads to greater improvements in a particular vocabulary test than learning these skills from an early education program.¹¹ Reading several times a day gave the same statistical advantage that either income over \$40,000 or mothers having post-secondary education gave.

Community characteristics

While community size and relative isolation seemed to be related to First Nation language learning and cultural influences, these characteristics appeared to have little impact on the school experiences measured by this survey. More children in large communities had knowledge of First Nation languages, while more children in small communities were more likely to be helped in understanding their language and traditional culture by aunts and uncles.

Table 8. First Nations languages and traditional culture by community size (n = 5929)

	Community size		
	Small	Mid-size	Large
Understanding First Nations languages	9.1	21.1	32.1
Speaking First Nations languages	4.9	14.3	25.4
Who influences culture of child?			
Aunts/uncles	41.8	30.0	28.7

Although having children who spoke a First Nation language was valued as important by over 90% of the children's parents/grandparents, the actual ability to speak one or more of 26 First Nations languages was reported for only 19.3% of children aged 3–11. At the same time, 84.1% speak English or French fluently and another 16% speak one of them relatively well.

Parents/grandparents in remote and isolated communities favour having children learn a First Nation language and support the learning of traditional culture from traditional sources as might be expected of those with least exposure to Western influence. Non-isolated communities showed patterns of less support for First Nations language and culture which may be considered consistent with their levels of personal exposure to Western culture.

Table 9. First Nations languages and traditional culture by degree of isolation of community

	Isolation status			
	Remote-isolated	Isolated	Semi-isolated	Non-isolated
Importance of cultural events (n=5943)				
Very important	68.7%	36.4%	49.9% (NS)	45.0%
Knowledge of First Nation languages (n=5539, 5742)				
Understanding	35.8	43.0 (NS)	32.4 (NS)	16.5
Speaking	20.6	32.8 (NS)	27.1 (NS)	11.1
Who influences culture of child? (n=5999)				
Elders	31.0	13.8 (NS)	18.8 (NS)	16.8
Grandparents	77.4	60.2 (NS)	65.1 (NS)	60.9 (NS)

NS - not significantly different from remote isolated communities

With only one exception, there were no significant differences in academic performance, grade repetition or Aboriginal Head Start attendance for communities of different sizes and degrees of isolation. In the remote communities the children were assessed more often as above average (37.3%) than slightly above average (6.3%), in contrast to the other types of communities, which had almost equal ratings in both of these categories.

Table 10. Scholastic aptitude by degree of isolation of community* (n=3669)

	Isolation status			
	Remote-isolated	Isolated	Semi-isolated	Non-isolated
Parents' or grandparents' assessment of scholastic aptitude of child				
Above average	37.3%	23.5%	22.5%	20.8%
Slightly above average	<10%	29.4%	19.7%	17.3%

*Children ages 3 through 11.

Conclusions, Recommendations and Solutions

Conclusions

Children living in First Nations communities had connections to their families and other aspects of their community. This was indicative of a strong potential for connections to their traditional culture. They were supported by parents and grandparents who valued the children's ability to speak a First Nations language and, to a lesser extent, valued the children's involvement in traditional cultural events.

Children's ability to speak First Nation languages fluently or relatively well lagged behind the adults' attitudes. Such a lack of fluency indicates a potentially strong connectivity to Western cultures for almost all of the First Nations children on reserve. Ability to understand and speak a First Nation language was more common among children in larger communities and least common in non-isolated communities (compared to remote, isolated and semi-isolated communities).

Families of First Nations children were among the most-mentioned sources of cultural knowledge. Other community members were also involved in cultural transmission (more so for older children). More sources of help in this particular area meant that the child was more likely to speak a First Nations language. Grandparents and Elders were more likely to be involved in remote, isolated communities.

Despite parental/grandparental assessments of their children's scholastic abilities, which tended to rate these abilities as average or above average, a substantial percentage of children (11.5%) repeated grades. Considering the high rate of grade repetition, the appropriateness of the predominating school curriculum for Aboriginal children clearly needs to be reviewed, especially in light of the differences noted earlier in this chapter between visual/spatial and other learning methodologies and styles.

Continuing with this thought, there is evidence that Aboriginal Head Start experiences were important in reducing the proportion of children repeating grades. This evidence is among the strongest available for the effectiveness of Aboriginal Head Start in Canada.

Recommendations and Solutions

While indications are clear that First Nations children have potential for staying involved in their culture, it is likely that they will continue to be involved in a balanced way in both Western and traditional cultures as long as they remain in their First Nations communities. Only a small minority of children does not or will not speak English or French. Given the pervasiveness and pressures of Western society and the diversity among First Nations, organized and concerted efforts will need to be made continuously in order to ensure socialization into both cultures. This effort will be essential for maintaining the spiritual ties to family, community and nation for generations to come.

Schools need to encourage and reinforce a bi-cultural approach to children's learning and evaluation in First Nations schools.

The evidence that Aboriginal Head Start made significant differences for a substantial proportion of children living in First Nations communities indicates that the program needs to be expanded and developed so that it can be made available for all children in those communities. As there are variations in the manner in which the program is delivered, additional information should be obtained from further data analysis to determine if the positive effects were similar in most communities or more concentrated in specific types of community. The need for such information warrants further in-depth investigation of the strengths of the more effective programs (this type of study is beyond the reach of the current RHS).

As well, since it has been demonstrated that reading daily to a toddler affects their vocabulary development, a research project on the effects of reading daily to First Nations children might include a culturally appropriate variation, featuring stories told orally.

Notes to Chapter 18

1. Statistics Canada, "Aboriginal children and Aboriginal languages," *A Portrait of Aboriginal Children living in Non-reserve Areas: Results from the 2001 Aboriginal Peoples Survey* (Ottawa, Ont.: Statistics Canada, 2004).
2. Ibid.
3. Harriet MacMillan et al., "Children's Health," *First Nations and Inuit Regional Health Survey, National Report, 1999* (Ottawa, Ont.: First Nations and Inuit Regional Health Survey National Steering Committee, 1999).
4. Ibid.
5. Statistics Canada, "Aboriginal children and Aboriginal languages," *A Portrait of Aboriginal Children living in Non-reserve Areas: Results from the 2001 Aboriginal Peoples Survey*.
6. Ibid.
7. Ibid.
8. Linda Kreger Silverman, *Upside-Down Brilliance: The Visual-Spatial Learner* (Denver, Colo.: DeLeon Publishing, 2002).
9. Statistics Canada, "Education and learning among Aboriginal children," *A Portrait of Aboriginal Children living in Non-reserve Areas: Results from the 2001 Aboriginal Peoples Survey*.
10. Ibid.
11. Garth Lipps and Jackie Yiptong-Avila, *From Home to School—How Canadian Children Cope* (Ottawa, Ont.: Statistics Canada, 1999).

Chapter 28

Early Measures of Childhood Health: Birth Weight, Maternal Smoking and Pregnancy

Abstract

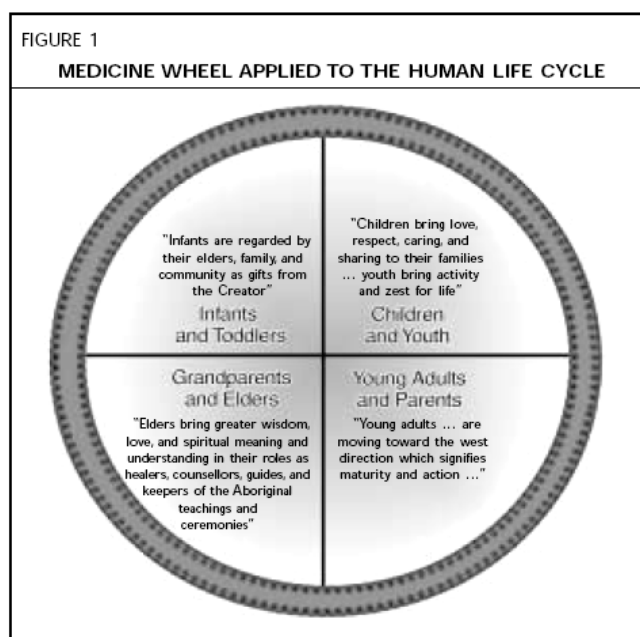
From an Indigenous perspective, each new life might be considered as an opportunity from the creator for hope and healing, for individuals, families, communities, and nations. On the medicine wheel (Figure 1 in this chapter), infants sit beside elders. Like elders, they may be considered teachers. Elders and infants are both close to the spirit world; the infants arriving from it, and the elders traveling to it. This closeness to the spirit world may bring a spiritual strength, but it may also bring a physical vulnerability and sensitivity to environmental disturbance. The medicine wheel life cycle connects the experiences and wellness of infants to the experiences and wellness of children, youth, young adults, parents, grandparents and elders, again from an individual, family, community, and First Nations perspective.

“If you want to understand the babies, then you will have to talk to the grandparents”

-Jan “Kehehti:io: Longboat

Introduction and Literature Review

From an Indigenous perspective, each new life might be considered as an opportunity from the creator for hope and healing, for individuals, families, communities, and nations. On the medicine wheel (Figure 1), infants sit beside elders. Like elders, they may be considered teachers. Elders and infants are both close to the spirit world; the infants arriving from it, and the elders traveling to it. This closeness to the spirit world may bring a spiritual strength, but it may also bring a physical vulnerability and sensitivity to environmental disturbance. The medicine wheel life cycle connects the experiences and wellness of infants to the experiences and wellness of children, youth, young adults, parents, grandparents and elders.



From a population health perspective, infant health measures are very much considered to be a core reflection of the health of a community.¹ Measures such as infant mortality and the incidence of low birth weight have been firmly linked to underlying determinants of health such as adequate food supply, adequate housing, employment, education level, and environmental exposures.² Infants are considered to be vulnerable to adverse underlying social, economic, and environmental conditions. It is this vulnerability that makes infant health measures sensitive “sentinels” to underlying population health determinants. Interestingly, over the past decade, the “life cycle approach” to disease has begun to link adult health conditions such as high blood pressure, heart

disease and diabetes to fetal, infant, and childhood experiences and exposures.³

Data on important risk factors of infant health, such as smoking and socio-economic characteristics are unavailable in Canadian perinatal databases in any province. The rich data on these exposures in the children’s component of the 2002–03 First Nations Regional Longitudinal Health Survey (RHS) offer us an unique opportunity to fill this gap by assessing the inter-relationships between maternal smoking (active or passive), birth weight, breastfeeding and long-term child health outcomes. This chapter is focused on an important measure of infant health, birth weight, and two important health behaviours, smoking during pregnancy and breastfeeding.

Birth weight and infant health

Birth weight is recognized among non-Indigenous populations as one of the most important measures of infant health. Birth weight can be a sign of the conditions that the baby was exposed to in the womb during the pregnancy, and is also linked to health later in childhood and in adulthood (for example, to the risk of coronary heart disease and Type 2 diabetes).^{4,6} In the document *Healthy Canadians: A Federal Report on Comparable Health Indicators, 2002*, Health Canada identifies infant mortality and the incidence of low birth weight as the two primary maternal child health indicators for Canadians.⁷ This is because babies that have a low birth weight are more likely to get infections and other illnesses. They are also at an increased risk for death. Birth weight seems however a problematic health indicator for the First Nations population: overall rates of infant mortality in the First Nations population are substantially elevated, yet the proportion of low birth weight babies (<2.5 kg) among First Nations peoples has been shown to be very similar or lower to that of the general Canadian population.⁸⁻¹⁰ This means that in First Nations populations, the rate of low birth weight babies may not be as adequate a measure of infant health as for non-First Nations populations, because even when it is not elevated, First Nations babies may still be experiencing higher rates of illness and death.

The proportion of high birth weight babies (≥ 4.0 kg) born to First Nations mothers has been shown to be markedly higher than non-Indigenous populations.¹¹⁻¹⁶ Health researchers associate high birth weight in non-Indigenous populations with maternal glucose disorders such as diabetes and increased rates of birth injury.¹⁷ The significance of high birth weight among the First Nations population with respect to infant well-being is unclear. High birth weight among First Nations peoples may be caused by diet, lifestyle, and genetic factors.^{18, 19} There is evidence to suggest that the fetal and metabolic changes that occur in the setting of maternal diabetes may persist and contribute to the development of insulin resistance in adulthood.²⁰⁻²²

Smoking and infant health

Smoking during pregnancy exposes the unborn baby to numerous toxic chemicals found in tobacco smoke, a complex contaminant with 4,000 chemical compounds. Tobacco smoke has been associated with a higher risk of many chronic diseases in adults such as chronic lung disorders and cancers, and has been consistently associated with over two times elevated risk of poor fetal growth.^{23, 24} Carbon monoxide, a gas from tobacco smoke, interferes with oxygen intake. This lack of oxygen can cause the baby to grow more slowly and gain less weight during the pregnancy, and may impair the neurological development of the unborn baby. Nicotine, which is another toxic substance contained in cigarettes, can also harm the baby, because it restricts blood flow to the placenta, meaning that the baby gets even fewer nutrients and less oxygen, and it also makes the baby's heart beat and breathing rate faster.

Mothers who smoke during pregnancy have a greater risk of miscarriages and birth complications.²⁵ Mothers who smoked or were exposed to second-hand tobacco smoke during pregnancy usually have smaller babies than non-smoking mothers.^{26, 27} As described earlier, these low birth weight babies are at a greater risk of illness and death.²⁸ The effect of smoking on the growth of babies is at its worst during the third trimester of pregnancy.²⁹ Infants of mothers who were exposed to second-hand tobacco smoke during pregnancy are also at increased risk for sudden infant death syndrome.³⁰ In the long term, children of mothers who smoked tend to be shorter than other children, and have more difficulty with reading and mathematics.³¹

Breastfeeding and infant health

Breastfeeding provides optimal nutrition for infants and is beneficial for both mother and child. A number of different health organizations, including Health Canada, the Canadian Paediatric Society, and World Health Organization, recommend that infants be exclusively breastfed for at least four months. Rates of breastfeeding for Aboriginal mothers have been consistently lower than the rate for the general Canadian population. There is some evidence to suggest that Aboriginal mothers who do breastfeed, do so for a longer period of time.³² Other researchers have found that initiation and duration of breastfeeding among First Nations mothers has declined over the last three decades.³³

Infants benefit enormously from breastfeeding as it protects against gastrointestinal and respiratory infections.³⁴⁻³⁷ Breastfeeding has been associated with a stronger maternal bond and a better quality mother-infant relationship.³⁸ In the long term, breastfeeding has been associated with enhanced cognitive development.³⁹⁻⁴¹ Researchers in the field of First Nations health have consistently found that breastfeeding reduces the risk for ear infections (otitis media) and upper respiratory tract infections.⁴² Breastfeeding also contributes to the health and well-being of mothers, as it helps to space

children, facilitates an earlier return to pre-pregnancy weight, and reduces the risk of ovarian cancer.^{43, 44} The benefits of breastfeeding are maximized if the infant is breastfed for six months or more.⁴⁵

Interpretation Methods

We used data for all children (n=6657) recorded in the 2002–2003 RHS. Hypotheses regarding possible relationships between birth weight, smoking during pregnancy, and breastfeeding were generated based on a review of the available results, scientific literature, and the cultural framework. Consensus regarding hypotheses was reached among members of our interdisciplinary team and data requests were generated and submitted to the RHS team. Data analysis was further refined in a series of follow-up analysis requests. We used both descriptive and comparative approaches. Primary comparative results were tabulated in a series of two-way tables. Statistical differences were assessed using different methods than other chapters of this report. Chi-square analyses were used to identify statistically significant differences in rates of outcomes among group based on unweighted data. Percentages reported in tables and graphs, though are based on weighted data, consistent with other chapters. Significance of results was set at $p < 0.05$ and trends were discussed for results at $p < 0.10$. In general, all reported results and associations are significant unless they are identified as a trend.

The available numbers varied for individual variables as not all survey items were completed by every study participant. For analyses involving family and community characteristics, only those surveys completed by the biological mother were used. Analyses examining the long-term consequences of birth weight, breastfeeding, and maternal smoking were not restricted to biological mothers alone. Of the 6,657 surveys, 5,260 or 79.0% were completed by the child's biological mother. Family and community characteristics were examined, including maternal age, maternal education, family income, family history of residential schooling, household crowding, community size, isolation or remoteness status, and transfer of health care status. Long term consequences were examined including BMI, school performance, general health, bronchitis or ear infection, allergy or asthma, and psychological problems.

An exploratory analysis was conducted to examine changes over time in birth weight, breastfeeding status, and maternal smoking. To do so, we first examined the distributions according to child's current age, using one-year age groups. The distribution of the surveys by age of the child is fairly even, except for children less than one year old, for whom there are significantly fewer completed surveys. As a result, we have less information on pregnancy, birth, and the first year of life for children in the 2002–2003 period. To adjust for this, our final age analysis used three-year age categories. We excluded the 0–2 year age group for breastfeeding

duration, as the breastfeeding duration categories were not meaningful for children under six months of age.

When examining birth weight, comparisons to the general Canadian population were made using data from Statistics Canada for 1999. This set of vital statistics from Statistics Canada includes First Nations infants born on-reserve who completed birth registration. When examining breastfeeding and maternal smoking during pregnancy, comparisons to the general Canadian population were made using the National Longitudinal Survey of Children and Youth in 1998–1999 (NLSCY 1998–1999).⁴⁶ The NLSCY survey excludes First Nations children living on-reserve.

We used the 1997 First Nations and Inuit Regional Longitudinal Health Survey Children's Health Chapter (FNIRLHS 1997) for a descriptive comparison of previous survey information specifically for First Nations on reserves that was collected in 1997. It should be noted, however, that the FNIRLHS included a sample of Inuit children while the RHS 2002/2003 did not.

Results and Discussion

Birth weight

The average or mean birth weight for First Nations children was found to be 3.55 kg. Mean birth weight was higher for males at 3.60 kg compared to females at 3.49 kg. This is similar to non-Indigenous populations, where male infants tend to weigh slightly more than female infants at birth.

For this study, we defined *low birth weight* as less than 2.5 kg, *normal birth weight* as between 2.5 kg and 4.0 kg, and *high birth weight* as greater than 4.0 kg. The proportion of low birth weight infants was 5.5%. This rate is comparable to the previous rate for First Nations and Inuit (FNIRLHS 1997), which was 5.4%. It is also comparable to the rate among the general Canadian population (NLSCY 1998–1999), which was 5.6%.

The proportion of female and male infants with low birth weight was not significantly different. The proportion of high birth weight infants was 21.0%. This rate is higher than the previous rate for First Nations and Inuit (FNIRLHS 1997), which was 17.8%. The current rate is markedly higher than the proportion of high birth weight infants for the general Canadian population (NLSCY 1998–1999), which was 13.1%. The proportion of male infants with high birth weights was higher (24.6%) than for female infants (17.4%).

There was no association between birth weight and the age of child (see Table 1). This means that the proportion of low birth weight, average birth weight, and high birth weight babies is relatively stable across the different age groups.

Figure 2. Birth weight categories: First Nations compared with the general Canadian population

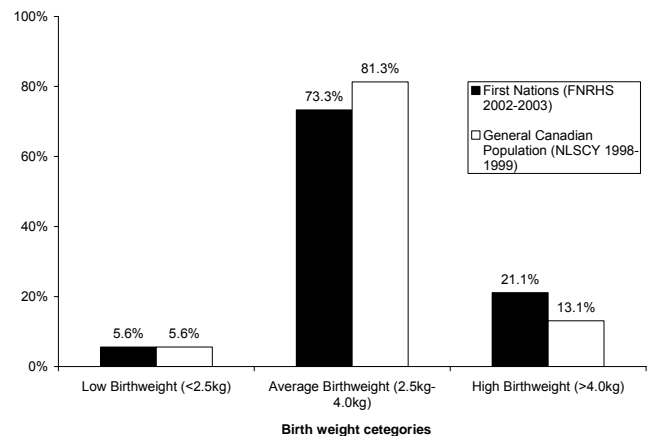


Table 1. Frequency of birth weight categories by child's current age (n=4836)

	Low birth weight <2.5 kg	Average birth weight 2.5-4.0 kg	High birth weight >4.0 kg
Child Age			
< 1 year to 2 years	5.5%	73.0%	21.5%
3 to 5 years	4.9%	73.3%	21.8%
6 to 8 years	5.2%	75.2%	19.6%
9 to 11 years	5.4%	75.3%	19.3%

Analyses to examine associations between birth weight and maternal, family, and community characteristic were conducted for only those children whose biological mothers completed the survey (see Table 2). There were no significant associations with the other family and community characteristics that were examined.

We also tested for an association between birth weight and maternal smoking (see Tables 3 and 4). Low birth weight infants were more likely to be born to mothers who smoked during their pregnancy. This link between maternal smoking and low birth weight was marked when mothers smoked ≥ 20 cigarettes per day.

Table 2. Frequency of birth weight categories by maternal, family, and community characteristics

	Low birth weight <2.5 kg	Average birth weight 2.5-4.0 kg	High birth weight >4.0 kg
Maternal Age at birth (n= 4797)			
<20 years	2.9%	75.0%	22.0%
20-34 years	6.1%	72.8%	21.1%
>35 years	7.7%	69.9%	22.4%
Maternal education (n= 4759)			
Less than high school	6.5%	74.1%	19.5%
High school	4.4%	75.8%	19.8%
College, technical, vocational	5.6%	73.0%	21.4%
University	3.2%	63.5%	33.3%
Current household income (n= 3480)			
≤ \$10,000/year or income loss	5.9%	78.9%	15.2%
\$10,000-\$14,999/year	3.4%	79.0%	17.6%
\$15,000-\$19,999/year	3.4%	68.8%	27.8%
\$20,000-\$29,999/year	4.8%	72.5%	22.7%
\$30,000-\$49,999/year	6.0%	75.0%	19.0%
\$50,000-\$79,999/year	16.3%	64.8%	18.8%
>\$80,000/year	1.3%	65.7%	33.0%
Residential schooling¹ (n= 4836)			
No	6.1%	74.7%	19.2%
Yes	5.1%	72.7%	23.3%
Crowding (n= 4821)			
Not crowded	4.7%	72.2%	23.2%
Crowded ²	7.4%	76.4%	16.2%
Community size (n= 4803)			
<300 persons	7.3%	73.2%	19.4%
300-1499 persons	4.2%	75.5%	20.3%
1500+ persons	7.1%	70.4%	22.4%
Remoteness (Isolation status) (n= 4490)			
Remote isolated	5.2%	81.3%	13.5%
Isolated	7.9%	70.6%	21.5%
Semi-isolated	2.2%	72.0%	25.8%
Non-isolated	5.3%	73.9%	20.9%
Health transfer status (n= 4828)			
Not transferred	5.0%	75.5%	19.6%
Community transferred	6.9%	69.0%	24.1%
Multi-community	4.8%	75.0%	20.1%

Note. Sample includes only those children whose biological mothers completed the survey.

¹Residential Schooling: Having at least one parent or grandparent who attended residential schooling.

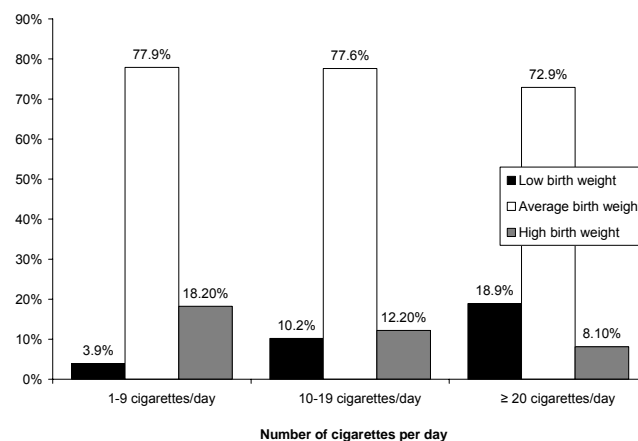
²Crowded: >1 person/room

Table 3. Frequency of birth weight categories by maternal smoking categories (n=3922)

	Low birth weight <2.5 kg	Average birth weight 2.5-4.0 kg	High birth weight >4.0 kg
Maternal Smoking			
No	3.8%	73.1%	23.1%
Yes	7.6%	77.3%	15.0%

Table 4. Frequency of birth weight categories by maternal smoking duration categories (n=1298)

	Low birth weight <2.5 kg	Average birth weight 2.5-4.0 kg	High birth weight >4.0 kg
Frequency of Maternal Smoking			
1-9 cigarettes/day	3.9%	77.9%	18.2%
10-19 cigarettes/day	10.2%	77.6%	12.2%
≥ 20 cigarettes/day	18.9%	72.9%	8.1%

Figure 3. Birth weight categories and frequency of maternal smoking (n=1,298)


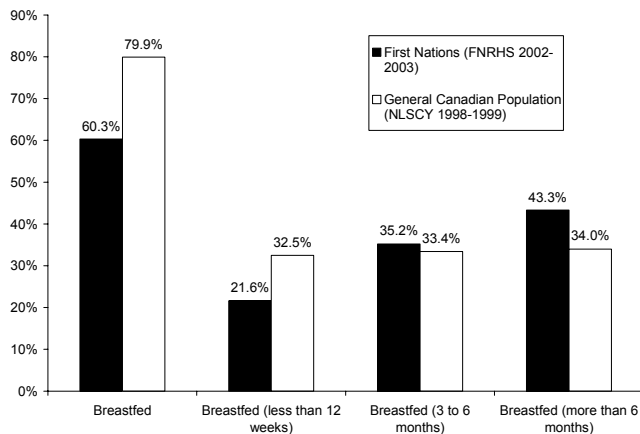
In summary, the rates of low birth weight among First Nations living on-reserve are similar to those of the general Canadian population. The rates of high birth weight among First Nations living on-reserve are close to twice those of the general Canadian population. Low birth weight is linked in this study to maternal smoking. This association is marked for heavy prenatal maternal smoking.

Breastfeeding

The average proportion of children who were breastfed was 62.5%. This rate is higher than the previous rate (50%) reported for First Nations and Inuit (FNIRLHS 1997). It is lower than the rate (79.9%) that was reported for the general Canadian population (NLSCY 1998–1999). Of the children who were breastfed, 21.6% were breastfed for 12 weeks or less, and 35.2% were breastfed for three to six months and 43.3% were breastfed for more than six months. This rate of sustained breastfeeding for more than six months appears to be higher than the previous rate for First Nations and Inuit (FNIRLHS 1997), which found that 22.5% of participant children were breastfed for more than seven months. In

contrast, of infants from the general Canadian population (NLSCY 1998–1999), 32.5% had been breastfed for 12 weeks or less, 33.4% had been breastfed for three to six months, and 34.0% had been breastfed for more than six months.

Figure 4. Breastfeeding rate: Comparing First Nation with the general Canadian population



We examined the association between breastfeeding (incidence and duration) and the age of the child (see Tables 5 and 6). There was no significant association between breastfeeding incidence or duration, and age of child. This means that the incidence of breast feeding and proportion of children who were breastfed for less than three months, three to six months, and longer than six months, is relatively stable across the different age groups.

Table 5. Frequency of breastfeeding by child's current age (n=5227)

Child Age	Breastfed	
	No	Yes
< 1 year to 2 years	61.2%	38.8%
3 to 5 years	62.9%	37.1%
6 to 8 years	57.1%	42.9%
9 to 11 years	54.0%	46.0%

Table 6. Frequency of breastfeeding duration categories by child's current age (n=2287)

Child Age	Duration of Breastfeeding		
	<3 months	3-6 months	>6 months
3 to 5 years	20.4%	36.4%	43.2%
6 to 8 years	21.6%	36.5%	42.0%
9 to 11 years	19.1%	35.8%	45.1%

Note – The category 0-2 years has been excluded in this analysis as the duration categories are not meaningful for children less than six months of age.

Analyses were conducted to examine associations between breastfeeding (incidence and duration) and maternal, family, and community characteristics (see Tables 7 and 8). Rates of breastfeeding were higher for mothers with university education, with a family income >\$50,000/year, with a family history of residential schooling, who lived in remote

(no scheduled flights) or non-isolated communities, and who lived in a community that was part of a multi-community health services transfer arrangement. Breastfeeding rates were lower for mothers with a household income <\$15,000 per year. Infants were more likely to be breastfed for longer than seven months if their mothers were older, had a family history of residential school attendance and/or lived in a community that was part of a multi-community health services transfer agreement. There were no significant associations with other characteristics.

Table 7. Frequency of breastfeeding by maternal, family, and community characteristics

	Breastfed	
	No	Yes
Maternal Age at birth (n=5181)		
<20 years	40.1%	59.9%
20-34 years	37.5%	62.5%
>35 years	37.4%	62.6%
Maternal education (n=5121)		
Less than high school	42.2%	57.8%
High school	40.0%	60.0%
College/technical/vocational	30.3%	69.7%
University	16.5%	83.5%
Current household income (n=3675)		
≤ \$10,000/year or income loss	49.3 %	50.7%
\$10,000-\$14,999/year	46.5%	53.5%
\$15,000-\$19,999/year	32.1%	67.9%
\$20,000-\$29,999/year	33.0%	67.0%
\$30,000-\$49,999/year	34.6%	65.4%
\$50,000-\$79,999/year	26.2%	73.8%
>\$80,000/year	15.7%	84.3%
Residential schooling¹ (n=5227)		
No	42.4%	57.6%
Yes	34.0%	66.0%
Crowding (n=5210)		
Not crowded	36.6%	63.4%
Crowded ²	39.0%	61.0%
Community size (n=5227)		
<300 persons	37.6%	62.4%
300-1499 persons	37.2%	62.8%
1500+ persons	38.0%	62.0%
Remoteness (Isolation status) (n=4864)		
Remote isolated	42.0%	58.0%
Isolated	46.9%	53.1%
Semi-isolated	49.2%	50.8%
Non-isolated	35.0%	65.0%
Health transfer status (n=5219)		
Not transferred	37.6%	62.4%
Community transferred	39.0%	61.0%
Multi-community	34.2%	65.8%

Note. Sample includes only those children whose biological mothers completed the survey.

¹Residential Schooling: Having at least one parent or grandparent who attended residential schooling.

²Crowded: >1 person/room

Table 8. Frequency of breastfeeding duration categories of by maternal, family, and community characteristics

	Duration of Breastfeeding		
	<3 months	3-6 months	>6 months
Maternal Age at birth (n=2761)			
<20 years	26.7%	34.5%	38.8%
20-34 years	20.6%	34.5%	44.9%
>35 years	18.8%	29.6%	51.7%
Maternal education (n=2743)			
Less than high school	25.4%	31.1%	43.5%
High school	17.1%	34.8%	48.1%
College/technical/vocational	19.1%	40.7%	40.2%
University	24.7%	37.3%	37.9%
Current household income (n=2213)			
≤ \$10,000/year or income loss	25.3%	38.0%	36.7%
\$10,000-\$14,999/year	15.0%	32.1%	52.9%
\$15,000-\$19,999/year	23.6%	31.3%	45.0%
\$20,000-\$29,999/year	23.2%	38.6%	38.2%
\$30,000-\$49,999/year	19.2%	30.7%	50.1%
\$50,000-\$79,999/year	16.1%	34.7%	49.2%
>\$80,000/year	15.6%	42.3%	42.1%
Residential schooling ¹ (n=2788)			
No	25.7%	33.2%	41.1%
Yes	19.0%	36.4%	44.6%
Crowding (n=2783)			
Not crowded	23.3%	33.1%	43.6%
Crowded ²	17.5%	40.0%	42.5%
Community size (n=2788)			
<300 persons	18.7%	38.0%	43.3%
300-1499 persons	21.4%	39.0%	39.7%
1500+ persons	22.5%	28.8%	48.7%
Remoteness (Isolation status) (n=2528)			
Remote isolated	11.8%	32.3%	55.9%
Isolated	15.0%	20.3%	64.7%
Semi-isolated	21.3%	44.4%	34.3%
Non-isolated	23.6%	37.7%	38.7%
Health transfer status (n=2784)			
Not transferred	22.2%	33.9%	43.9%
Community transferred	23.6%	36.1%	40.3%
Multi-community	15.5%	37.7%	46.8%

Note. Sample includes only those children whose biological mothers completed the survey.

¹Residential Schooling: Having at least one parent or grandparent who attended residential schooling.

²Crowded: >1 person/room

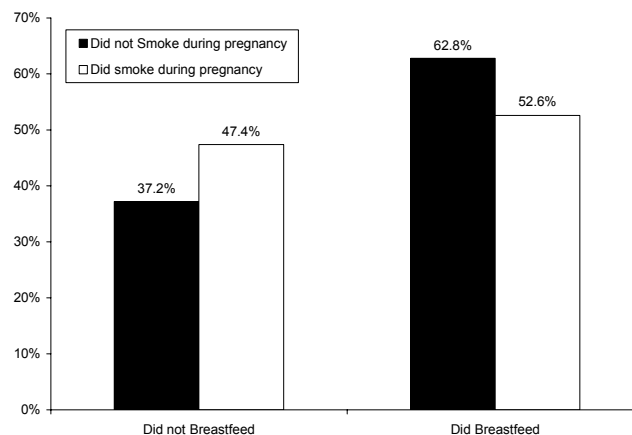
We also checked to see if birth weight or smoking during pregnancy were linked to breastfeeding rates (see Tables 9 and 10). Infants born with a low birth weight were less likely to be breastfed, and those born with a high birth weight were more likely to be breastfed. Infants were more likely to be breastfed if their mothers did not smoke during pregnancy.

Table 9 Frequency of breastfeeding categories by birth weight categories (n=4822)

Birth weight Categories	Breastfeeding Category	
	No	Yes
Low birth weight (<2.5 kg)	53.0%	47.0%
Average birth weight (2.5-4.0 kg)	40.8%	59.2%
High birth weight (>4.0 kg)	36.3%	63.7%

Table 10 Frequency of breastfeeding categories by maternal smoking categories (n=4169)

Maternal Smoking Categories	Breastfeeding Category	
	No	Yes
No	37.2%	62.8%
Yes	47.4%	52.6%

Figure 5. Incidence of maternal smoking and incidence of breastfeeding (n=4169)

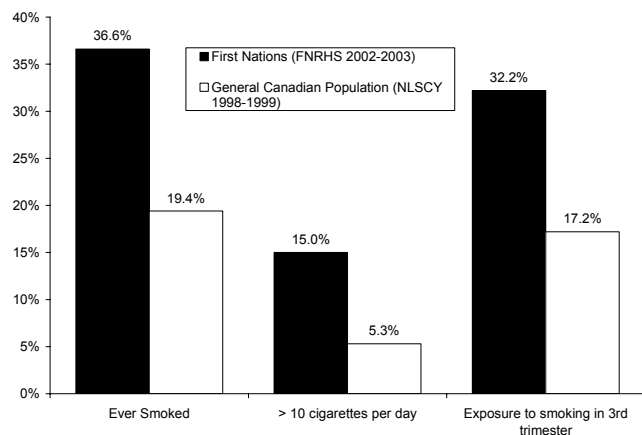
In summary, the rate of breastfeeding among First Nations on-reserve appears to be modestly lower than among other Canadians. However, First Nations infants on-reserve who are breastfed appear to be breastfed longer than breastfed infants in the general Canadian population. Rates of breastfeeding among First Nations on-reserve appear to be higher since FNIRLHS 1997. Higher rates of breastfeeding in this study are linked to higher rates of maternal education, maternal affluence, maternal family history of residential school attendance, communities that are remote, and communities that are part of a multi-community transfer arrangement. Longer duration of breastfeeding was linked to communities that are part of a multi-community transfer arrangement. Lower rates of breastfeeding were linked to maternal smoking and low birth weight. Higher rates of breastfeeding were linked to high birth weight. The association of breastfeeding to maternal smoking is consistent with what is known about predictors of breastfeeding in other populations.^{47, 48} More research is required to better understand the links between breastfeeding and residential school attendance, as well as community size, community isolation status, and community health services arrangements. Differing health services and programs in

remote and urban centres is one possible explanation for higher breastfeeding rates at both extremes of the community isolation categories.

Smoking during pregnancy

Rates of smoking during pregnancy were calculated for children whose biological mothers completed the survey. The average rate of smoking during pregnancy was 36.6%. This rate is significantly higher compared to the general Canadian population (NLSCY 1998–1999) which was 19.4%. The rates of daily maternal smoking of cigarettes were: 20.2% for 1 to 9 cigarettes per day; 14.3% for 10 to 19 cigarettes per day; and 2.1% for 20 or more cigarettes per day. It is not possible to make comparisons with the previous rates for First Nations (FNIRLHS 1997) as these questions were not asked. The rate of daily maternal smoking for the general Canadian population (NLSCY 1998–1999) for more than 10 cigarettes per day was 5.3%, whereas in this survey the rate for First Nations mothers was almost three times higher at 15.0%. The percentage of babies exposed to maternal smoking during the third trimester was about one out of every three babies (32.2%). This is much higher than the rate from the NLSCY 1998–1999, which was 17.2%. The rate of environmental tobacco exposure (smoking in the pregnant First Nations mother's home) was about one out of every two families (48.2%).

Figure 6. Maternal smoking: Comparing First Nations with the general Canadian population



There was no significant association between the incidence of maternal smoking and age of child (see Table 11). This means that the incidence of maternal smoking is relatively stable across the different age groups. There was a significant association between the quantity of maternal smoking and age of child (See Table 12). There is decrease across age groups in the frequency of heavy smoking (≥ 20 cigarettes/day), and an increase across age groups in the frequency of light smoking (1-9 cigarettes/day).

Table 11. Frequency of maternal smoking by child's current age (n=4180)

Child Age	Maternal smoking	
	No	Yes
< 1 year to 2 years	61.1%	38.9%
3 to 5 years	67.9%	32.1%
6 to 8 years	69.3%	30.7%
9 to 11 years	69.2%	30.8%

Table 12. Frequency of maternal smoking by child's current age (n=1368)

Child Age	Maternal smoking duration pregnancy		
	1-9 cigarettes/day	10-19 cigarettes/day	≥ 20 cigarettes/day
< 1 year to 2 years	60.6%	32.1%	7.3%
3 to 5 years	61.3%	33.5%	5.2%
6 to 8 years	43.7%	44.6%	11.7%
9 to 11 years	47.7%	42.1%	10.2%

Analyses were conducted to examine associations between maternal smoking and maternal, family, and community characteristic (see Table 13). Rates of maternal smoking during pregnancy were higher for younger mothers, mothers with lower family incomes, mothers with less than university education, mothers with a family history of residential school attendance and in remote and isolated communities. Rates of maternal smoking during pregnancy were lower in communities involved in multi-community transfer of health services, compared to single community transfer or non-transferred communities. There were no significant associations between maternal smoking and the other family and community characteristics that we examined. Finally, maternal smoking was linked in the birth weight and breastfeeding analyses to lower birth weights and lower rates of breastfeeding, respectively (previously described above).

Finally, maternal smoking was linked in the birth weight and breastfeeding analyses to lower birth weights and lower rates of breastfeeding, respectively (see the Smoking During Pregnancy section).

Table 13. Maternal smoking by maternal, family, and community characteristics

	Maternal Smoking	
	No	Yes
Maternal Age at birth (n=4142)		
<20 years	58.1%	41.9%
20-34 years	63.3%	36.7%
>35 years	71.2%	28.8%
Maternal education (n=4110)		
Less than high school	63.8%	36.2%
High school	58.4%	41.6%
College/technical/vocational	63.9%	36.1%
University	71.4%	28.6%
Current household income (n=3005)		
≤ \$10,000/year or income loss	53.5%	46.5%
\$10,000-\$14,999/year	50.2%	49.8%
\$15,000-\$19,999/year	65.5%	34.5%
\$20,000-\$29,999/year	65.9%	34.1%
\$30,000-\$49,999/year	59.3%	40.7%
\$50,000-\$79,999/year	68.4%	31.6%
>\$80,000/year	78.7%	21.3%
Residential schooling¹ (n=4180)		
No	65.2%	34.8%
Yes	62.1%	37.9%
Crowding (n=3894)		
Not crowded	62.6%	37.4%
Crowded ²	64.8%	35.3%
Community size (n=4180)		
<300 persons	63.6%	36.4%
300-1499 persons	62.3%	37.7%
1500+ persons	65.0%	35.0%
Remoteness (Isolation status) (n=3914)		
Remote isolated	65.7%	34.3%
Isolated	60.1%	39.9%
Semi-isolated	65.6%	34.4%
Non-isolated	63.4%	36.6%
Health transfer status (n=4172)		
Not transferred	63.3%	36.7%
Community transferred	61.1%	38.9%
Multi-community	68.8%	31.2%

¹Residential Schooling: Having at least one parent or grandparent who attended residential schooling.²Crowded: >1 person/room

Note. Sample includes only those children whose biological mothers completed the survey.

Long-term consequences of birth weight

We further compared the long-term consequences of different birth weight categories (see Table 14). Caution is advised for interpreting some results of these analyses on low birth weight due to the relatively low frequency of some events. Children with low birth weight were more often reported to be underweight at the time of the survey, more often in fair or poor health, and to have allergies or asthma (considered together) as well as ADD/ADHD, cognitive/mental or learning disabilities (combined). Children born with a high birth weight were more often 'overweight' or at risk of overweight and less often 'underweight', and were more often described to be in 'very

good' or excellent' health. There were no other significant associations for the other outcomes (Figures 4, 5, 6 and 7).

Table 14. Long term health consequences by birth weight categories

	Low birth weight <2.5 kg	Average birth weight 2.5-4.0 kg	High birth weight >4.0 kg
BMI (CDC Standards for Children) (n=2540)			
Underweight	31.2%	7.2%	4.8%
Acceptable	28.7%	33.8%	24.4%
At risk of overweight	4.4%	13.4%	18.5%
Overweight	35.7%	45.7%	52.3%
Current general health (n=5772)			
Poor or Fair	25.2%	5.8%	7.7%
Good	19.0%	23.1%	16.9%
Very good or Excellent	55.8%	71.1%	75.4%
Current school performance (n=3346)			
Below average	5.7%	3.8%	4.4%
Slightly below average	12.7%	8.9%	7.3%
Average	46.2%	47.2%	47.5%
Slightly above average	24.7%	17.3%	16.6%
Above average	10.7%	22.9%	24.2%
Current health problems			
Chronic bronchitis or chronic ear infections (n=667)	15.3%	11.4%	14.7%
Allergies or asthma (n=1231)	36.0%	21.7%	19.3%
ADD/ADHD, cognitive or mental disability or learning disability (n=239)	23.2%	3.0%	4.2%

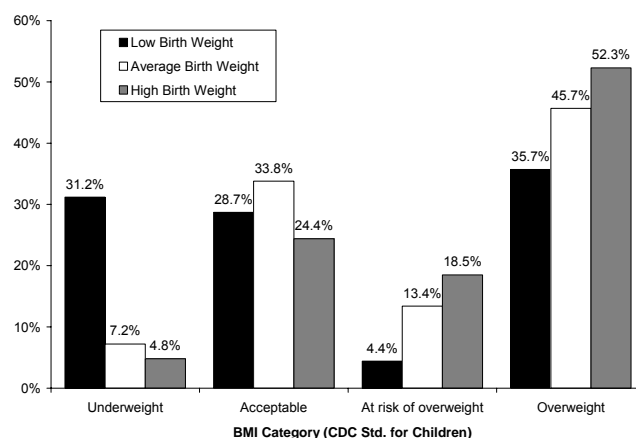
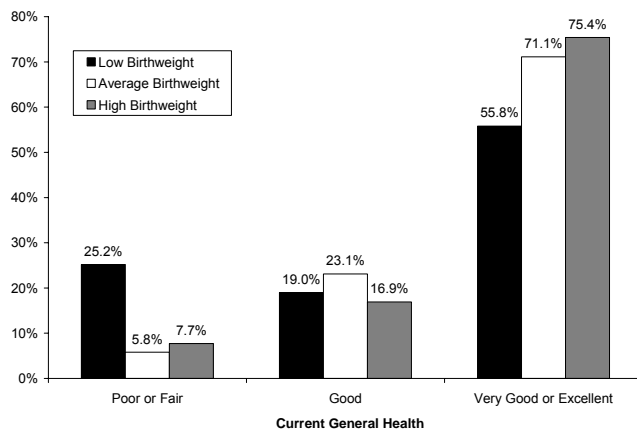
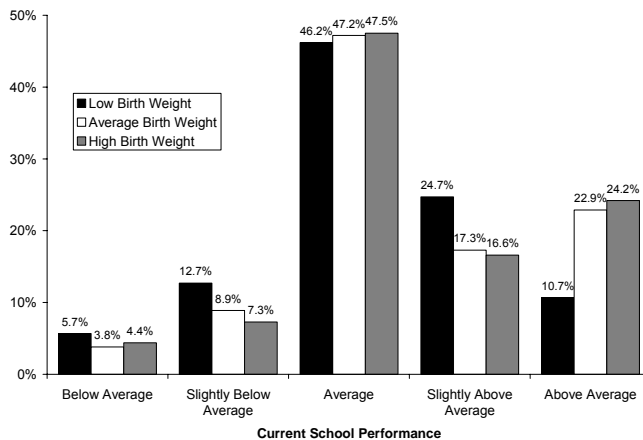
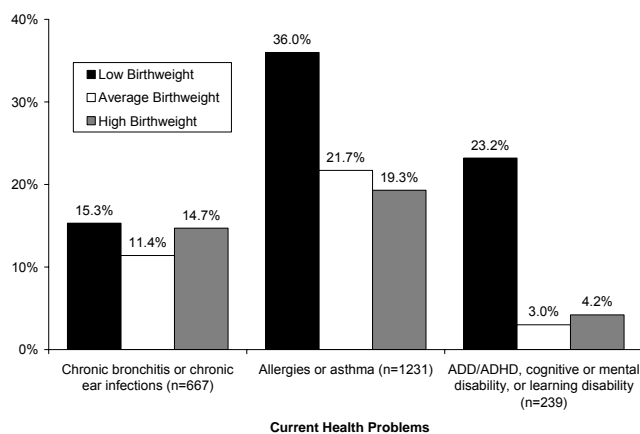
Figure 7. Birth weight categories and current body mass index categories (n=2540)

Figure 8. Birth weight categories and current health (n=5772)

Figure 9. Birth weight and current school performance (n=3346)

Figure 10. Birth weight categories and current health problems


Long-term consequences of breastfeeding

Analyses were conducted to examine the long-term consequences of breastfeeding (see Table 15). Children who were breastfed were less likely to be “overweight” compared to children who were not breastfed. Children who were breastfed were less likely to be ‘overweight’ and more likely to be at an ‘acceptable’ weight compared to children who were not breastfed. In addition, children who were breastfed

were more often in ‘very good’ or ‘excellent’ health, and less likely to have chronic bronchitis or chronic ear infections or ear problems when compared to children who were not breastfed. The results are shown in Figures 8, 9, 10, and 11.

Table 15. Long-term health consequences by breastfeeding status

	Breastfed	
	No	Yes
BMI (CDC Standards for Children) (n=2664)		
Underweight	9.9%	8.9%
Acceptable	26.6%	33.3%
At risk of overweight	15.7%	13.2%
Overweight	47.9%	44.6%
Current general health (n= 6486)		
Poor or Fair	5.8%	7.8%
Good	27.5%	19.1%
Very good or Excellent	66.8%	73.1%
Current school performance (n=3783)		
Below average	5.2%	3.5%
Slightly below average	8.8%	8.4%
Average	47.9%	44.9%
Slightly above average	16.9%	20.6%
Above average	21.2%	22.7%
Current health problems		
Chronic bronchitis or chronic ear infections (n=721)	14.4%	10.8%
Allergies or asthma (n=1346)	19.3%	23.2%
ADD/ADHD, cognitive or mental disability, or learning disability (n=275)	4.3%	4.5%

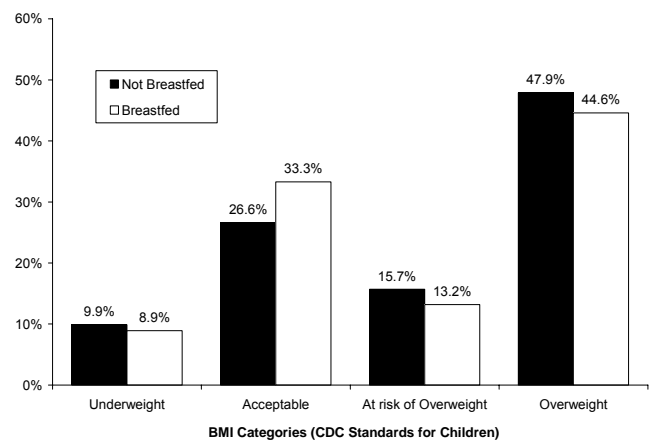
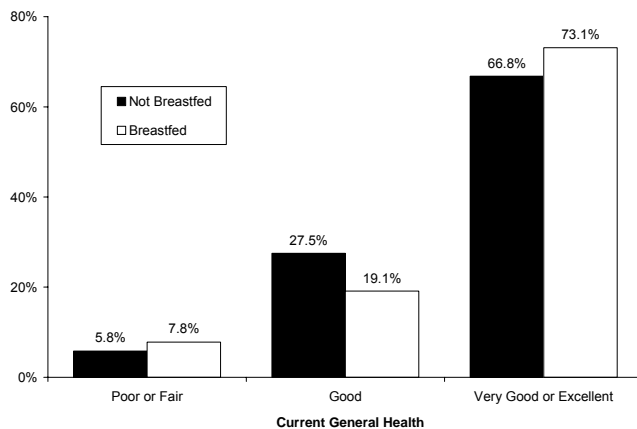
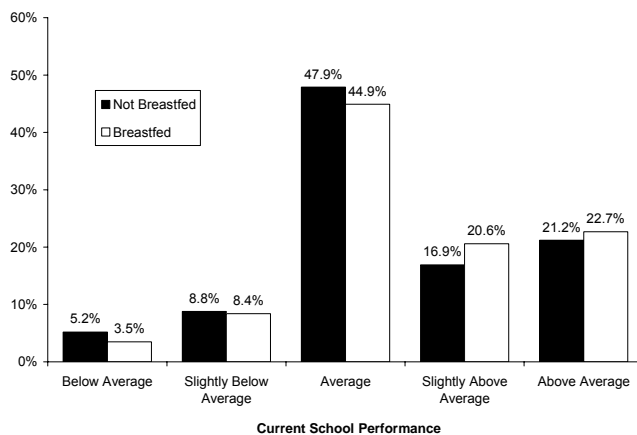
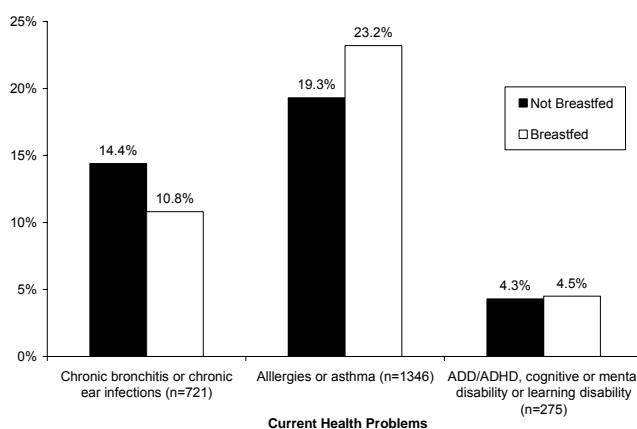
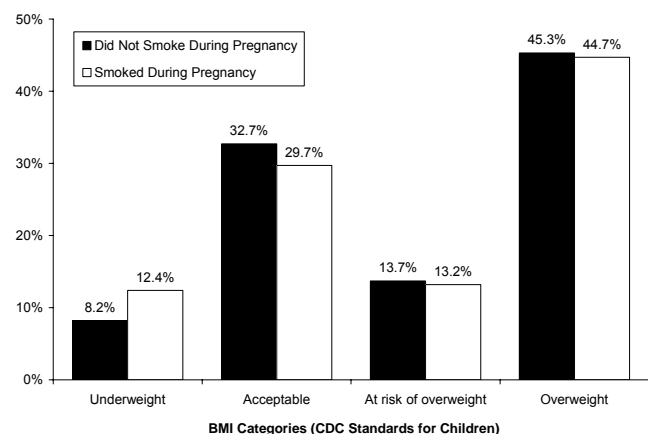
Figure 11. Breastfeeding and current general health (n=6486)


Figure 12. Breastfeeding and current general health (n=6486)

Figure 13. Breastfeeding and current school performance (n=3783)

Figure 14. Breastfeeding and current health problems


were not exposed to smoking during pregnancy. The distribution in school performance indicated a trend towards overall worse performance for infants whose mothers smoked during pregnancy. The results are shown in Figures 12, 13, 14, and 15.

Table 16. Long-term health consequences by maternal smoking

	Maternal Smoking during Pregnancy	
	No	Yes
BMI (CDC Standards for Children) (n=2187)		
Underweight	8.2%	12.4%
Acceptable	32.7%	29.7%
At risk of overweight	13.7%	13.2%
Overweight	45.3%	44.7%
Current general health (n=5105)		
Poor or Fair	7.9%	5.1%
Good	17.7%	26.1%
Very good or Excellent	74.4%	68.8%
Current school performance (n=2960)		
Below average	3.5%	4.0%
Slightly below average	7.6%	10.9%
Average	49.2%	39.6%
Slightly above average	16.7%	22.8%
Above average	23.1%	22.8%
Current health problems		
Chronic bronchitis or chronic ear infections (n=553)	10.2%	15.1%
Allergies or asthma (n=1060)	22.0%	23.1%
ADD/ADHD, cognitive or mental disability, or learning disability (n=211)	4.9%	3.5%

Figure 15. Smoking during pregnancy and current body mass index categories (n=2187)


Long-term consequences of smoking during pregnancy

Analyses were conducted to examine the long-term consequences of smoking during pregnancy (see Table 16). Children exposed to smoking during pregnancy were less often in 'excellent' or 'very good' health, were more likely to have chronic bronchitis or ear infections and slightly more likely to have asthma or allergies, compared to children who

Figure 16. Smoking during pregnancy and current general health

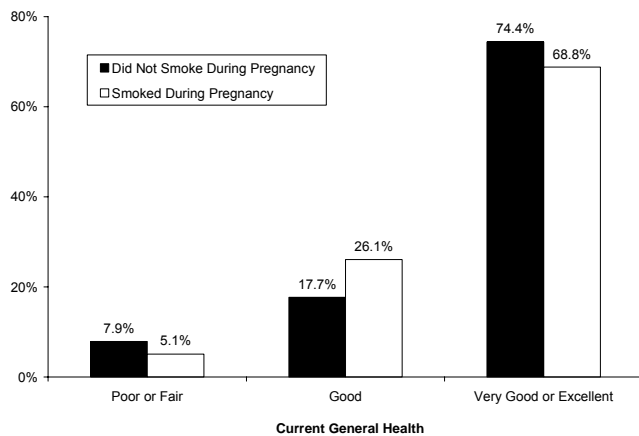


Figure 17. Smoking during pregnancy and current school performance (n=2960)

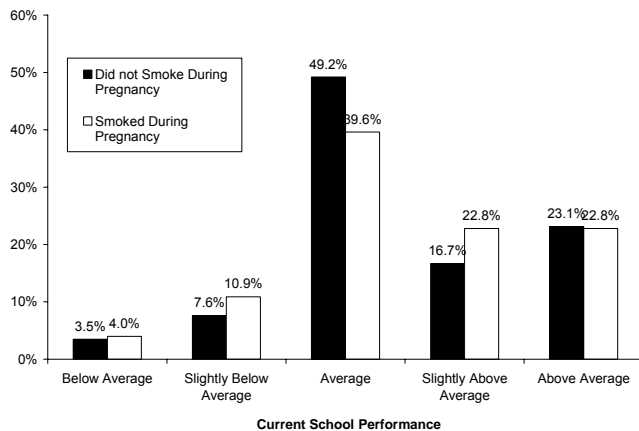
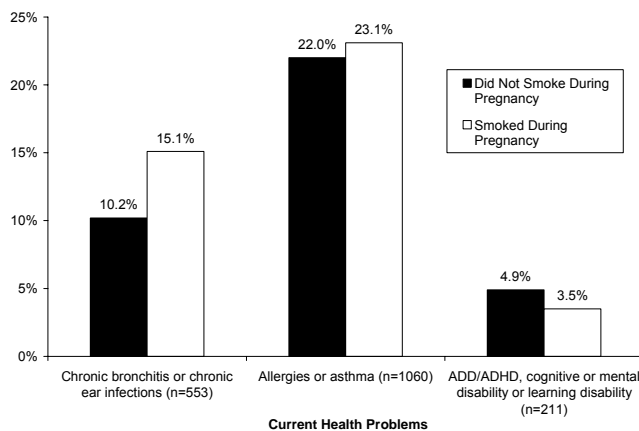


Figure 18. Smoking during pregnancy and current health problems



Conclusion and Recommendations

The holism of Indigenous and ecologic models of health and wellness are founded on rich interconnections between different aspects of personhood, lifecycle and environment. It is already known that First Nations infants are experiencing rates of death and illness that are disproportionately high

compared to the rest of the Canadian population.^{49, 50} This study provides some novel information regarding the health status of First Nations infants living on-reserve. Key findings from this study follow.

- Rates of low birth weight are similar to those of the general Canadian population, suggesting that low birth weight is not a key concern for First Nations on-reserve. Nevertheless, low birth weight is a serious concern for heavy smokers among First Nations on-reserve, suggesting the need for targeted intervention for the promotion of smoking cessation among First Nations women at childbearing age.
- Rates of high birth weight among First Nations are much higher than those of the general Canadian population. This strongly calls for additional studies to examine the biological and clinical implications of high birth weight and the associated medical needs for First Nations perinatal care.
- Rates of breastfeeding are modestly lower than those of other Canadians. The protective benefits of breastfeeding against obesity in this study suggest the continued need to promote breastfeeding among First Nations.
- Rates of maternal smoking in pregnancy among First Nations are much higher than those of other Canadians. The clear strong link between maternal smoking and long-term adverse health outcomes for children strongly suggests the urgent need for strategies to reduce maternal smoking among First Nations.
- The rate of household smoking during pregnancy is also very high. Passive smoke exposure during pregnancy occurred in close to 50% of First Nations homes.

Clearly, the health of First Nations infants is linked to family, community and cultural factors.

This study confirms some links known to exist in other populations between family and community factors and infant wellness. These include links between maternal education level⁵¹ and breastfeeding; maternal smoking and breastfeeding;⁵² young age (i.e., being a young mother)⁵³, maternal education,⁵⁴ and maternal smoking; and prenatal smoke exposure to certain long-term child health outcomes.

The study identifies several other predictors of infant health status and determinants that have not been previously demonstrated in the literature. These include explorations on the effects of novel community characteristics variables (including family income, community isolation, residential school attendance, and community control of health services) in relation to birth weight, maternal smoking and breastfeeding. Additionally, the study found low birth weight, not breastfeeding, and maternal and household smoking during pregnancy were associated with increased risks of long-term health problems. These novel findings underscore a clear need for the promotion of smoking

cessation and breastfeeding among First Nations. They also identify a need for further studies on the significance of high birth weight among First Nations as well as studies that examine the interrelationships between community characteristics and infant health outcomes. The appropriateness of the 4.0 kg cut-off to define “high” birth weight for First Nations infants needs to be linked to perinatal and long-term health outcomes. These links are not currently clear in this study or in the published literature.

This study raises more questions than it answers. All of the relationships described above invite further explorations. A better understanding of the stories that these infants and their families are trying to tell us will require both an Indigenous and a population health perspective. We need further understanding of (and insight into) the experiences of First Nations mothers and fathers, grandmothers, and grandfathers. We need to connect these experiences to the social, economic, historic, and political contexts of First Nations communities. We need to understand in a holistic way what activities, resources, and infrastructures facilitate health and healthy behaviour.

The application of these research findings will take place in the already existing network of programs and services for young First Nations families on-reserve. We need to be able to link with existing First Nations perinatal programs/services and learn from them. Finally, we need to be able to apply all the knowledge that has been gathered to plan, implement, and evaluate health programs and services that are meaningful to First Nations communities.

These actions will require the best tools from both Indigenous and population health knowledge systems. We will need traditional teachings, stories, oral histories and Indigenous knowledge frameworks. We also need to gather additional data and conduct more studies (including linkage of more extensive community and individual level characteristics to birth outcomes and long-term child health; longitudinal follow-up surveys; better vital statistics for First Nations; and participatory action research). Most importantly, we will need partnerships between front line community workers, health policy makers, program planners, researchers and community members.

Each new life might be considered an opportunity for hope and healing. Prioritizing the health and wellness of young First Nations families is an upstream health strategy that makes sense both from an Indigenous and a population health perspective. This study confirms the need to invest in research, health services, and health programs that will promote healthy early life environments for First Nations infants.

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Chapter 29

Physical Activity, Body Mass Index, and Nutrition

Abstract

Strategies addressing physical activity and nutrition are required to influence a variety of other sectors in holistic health systems, and to target different population groups in culturally appropriate ways. Periodic repetition of the First Nations Regional Longitudinal Health Survey (RHS) is required to assess the effectiveness of such strategies over time.

Data on physical activity rates of children in Canada is lacking and what exists is often based on parental/guardian reports. However, we know that pediatric obesity in the general population has increased by nearly 0.1 kg/m² per year since 1981. This chapter examines physical activity and diet, and their relationship to body mass, among on-reserve First Nations children under the age of 12.

Walking is the most frequently reported physical activity among First Nations children, followed by running, swimming and bicycling. Over half of children always or almost always eat a balanced, nutritious diet, and this is higher among children who are active daily compared to those who are occasionally active. Just over one-third of children are obese. Children who are active daily, and who always or almost always eat a balanced diet, are more likely to cite excellent health.

The high rates of overweight and obese First Nations children are of great concern, as the immediate consequences of childhood obesity may include diabetes, asthma, gallstone development, hepatitis, obstructive sleep apnea, orthopedic problems (e.g., bowing of the legs), menstrual abnormalities and neurological conditions. Strategies addressing diet and physical activity are a critical part of balancing energy intake and expenditure, and these strategies need to be culturally appropriate. Given the enormity of the problem, the measures gathered in the First Nations Regional Longitudinal Health Survey (RHS) should continue to be monitored and measured, and height, weight and waist circumference should be added.

Introduction

Chronic conditions are often the result of a lifestyle of inactive behaviors that begin as early as childhood and adolescence.¹ Physical inactivity during childhood has also been linked to physically inactive or sedentary behaviors in adulthood.² Therefore, regular physical activity during childhood may be key in maintaining an active lifestyle as an adult and in preventing certain chronic conditions. Regular physical activity is recognized for its role in preventing several chronic and physical conditions, including coronary heart disease, hypertension, obesity, type II diabetes, osteoporosis, certain site-specific cancers such as colon cancer, and functional limitation with aging.³ Other benefits of physical activity for children have been well documented. Physical activity results in increased self-esteem and perceived physical competence, factors that enable children to cope with mental stress.⁴ Moreover, children and youth who participate in regular physical activity are less likely to smoke, consume alcohol or take drugs.⁵

Data on physical activity rates of children in Canada are lacking, and what exists is often based on the reports of parents or guardians. However, we know that pediatric obesity has increased by nearly 0.1 kg/m² per year since 1981. The prevalence of children who are overweight has increased from 15% in 1981 to 29% in 1996 for boys, and from 15% to 24% for girls. In addition, prevalence rates of obesity over the same time period have increased from 5% to 14% for boys, and from 5% to 12% for girls.⁶ The World Health Organization (WHO) states that childhood obesity rates are already considered an “epidemic” in some countries and that 22 million children less than five years of age are overweight worldwide. In the United States, the prevalence of being overweight has doubled for children and tripled for youth in the last 20 years or so, reflecting Canadian trends.⁷

Pediatric research indicates that the interaction of a variety of factors plays a role in contributing to obesity. These factors include metabolic or genetic factors,⁸ environmental factors (including improved technology and suburban environments favoring motorized vehicles⁹), and behavioral factors (including modifiable factors such as physical activity and diets with high fat and low carbohydrate intake).¹⁰ Although consistent and national nutrition data is limited in Canada, the data does indicate that fruit and vegetable consumption is negatively associated with being overweight, and that total energy intake for Canadians has increased via carbohydrate intake, particularly soft drink consumption.¹¹ This has occurred during a period when the physical demands of everyday life are decreasing as a result of technological innovation. The situation is compounded in First Nations communities by the decrease in physical activities that are related to traditional hunting and fishing.¹²

Non-communicable or chronic diseases are associated with being overweight or obese, and are the major cause of death,

representing 59% of deaths worldwide.¹³ Indeed, chronic diseases such as type II diabetes and hypertension - which are more prevalent among individuals with higher levels of body fat - have traditionally been observed in adults, but are now observed among obese pre-pubescent children.¹⁴ Three modifiable or preventable factors in adults — changes in diet, physical activity and tobacco use — have a significant impact in reducing chronic disease.¹⁵ Modifiable and preventable factors are those that a person has control over, or can modify in order to reduce the chance of developing a chronic disease.

While risk factors for chronic disease appear across the general population, disparities are evident based on gender, age, income, education and ethnicity. For example, the data reveal that Canadians of Aboriginal descent have consistently higher rates of being overweight and obese compared to the overall Canadian population.^{16,17} First Nations children have a particularly high risk of obesity.^{18,19,20} This is a serious concern, given that childhood obesity is associated with chronic health problems such as type II diabetes, and the higher prevalence of these conditions in First Nations communities.²¹ This chapter will examine physical activity and aspects of nutrition, and their relationship to body mass among First Nations pediatric populations. Suggestions and recommendations are made that may help guide First Nations peoples, decision makers in First Nations communities, and policy developers, in the process of shaping national strategies for healthy living.

General Approach

It is important to examine these health issues using a multi-faceted cultural framework, as outlined in detail in the opening chapter of this report. This cultural framework embodies a “total person” and “total environment” model involving aspects of:

- An individual’s spiritual, emotional, mental, and physical well-being;
- Their culture’s values, beliefs, identity, and practices;
- Their community and relationship to the physical environment; and,
- Connectivity to their family.

The cultural framework is consistent with a population health or ecological approach that takes into account:

- Aspect of the individual (awareness, attitudes, and behaviors);
- Social factors (social support from family, friends, and peers);
- Environmental factors (physical environment, geography, and accessibility);
- Societal factors (culture and community); and,

- Policy related factors (at a band level or government level).

This balanced approach will be used as a basis for this chapter. First, descriptive data on the physical activity, diet and body mass index of children will be reported, then associations between these three factors and elements of the cultural framework are made. Due to the health orientation of this chapter, Cole's cut points will be used to categorize body mass index. These cut points are tied to health outcomes indirectly, since they predict children's future body mass index as adults, and a high BMI is known to be associated with elevated health risks.²²

RESULTS

Physical Activity and Sedentary Activity

Walking is the most frequently reported physical activity in which First Nations children participated over the year prior to the survey (86.9%), according to their parents/guardians. This is followed by running (73.3%), swimming (68.8%), bicycling (68.3%), berry picking or food gathering (38.0%), skating (37.8%) and forms of dancing (33.1%). Roughly one in four children reportedly fish (28.1%) and participate in competitive sports (27.8%). Less than 20% are involved in rollerblading (19.1%), hiking (16.8%), bowling (14.4%), and hunting (13.3%).^{i ii}

Table 1 summarizes the gender differences in reported physical activities. Gender differences are apparent for certain physical activities. For example, girls are more likely than boys to participate in dancing and aerobics or fitness classes. Boys, however, are more likely than girls to participate in fishing, hunting, rollerblading, skateboarding, golf, and competitive or team sports such as baseball, hockey and lacrosse. Regardless of age, walking is the most frequently reported physical activity.

Parents and guardians report few gender differences in how often their children participate in physical activities, with one exception: girls (57.1%) are reportedly more likely to never participate in non-school related sports teams or lessons compared to boys (48.7%), whereas boys (33.3%) are reportedly more likely than girls (23.6%) to participate in these types of activities one to three times a week.

Younger children appear more likely to participate in physical activity everyday compared to older children (i.e., 50.3% of 3-5 year olds compared to 37.3% of 9-11 year olds). Conversely, older children are reportedly more likely than younger children to participate less often (30.6% of 9-11 year olds participate 2-3 times a week compared to 22.8% of

3-5 year olds, and 17.2% of 9-11 year olds participate 4-6 times a week compared to 10.6% of 3-5 year olds).

Table 1. Prevalence (%) of physical activities among children, overall and by gender (n=6,510)

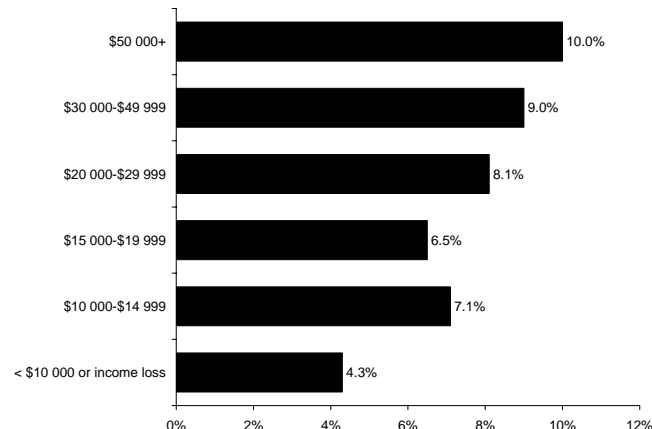
Rank	Activity	Total	Boys	Girls
1	Walking	86.9%	85.5%	88.4%(NS)
2	Running	73.3	74.2	72.4(NS)
3	Swimming	68.8	68.5	69.1 (NS)
4	Bicycle riding	68.3	68.0	68.6 (NS)
5	Berry picking or other food gathering	38.0	35.8	40.4 (NS)
6	Skating	37.8	40.7	34.7 (NS)
7	Dancing	33.1	25.3	41.5
8	Fishing	28.1	33.7	22.1
9	Competitive or group sports	27.8	32.5	22.8
10	Rollerblading, in-line skating	19.1	22.0	15.9
11	Hiking	16.8	17.7	15.7 (NS)
12	Bowling	14.4	14.8	14.0 (NS)
13	Hunting	13.3	17.4	9.0
14	Skateboarding	12.4	19.6	4.6
15	Golf	9.6	13.6	5.3
16	Canoeing	8.6	9.2	8.0 (NS)
17	Skiing	5.8	6.7	4.9 (NS)
18	Aerobics or fitness class	5.3	4.3	6.5
19	Martial arts	3.9	4.3	3.4 (NS)
20	Snowshoeing	3.8	4.6	3.0 (NS)

Children in households with lower incomes are reportedly more likely than those in higher income brackets to never participate in physical activities (i.e. 10.0% in households with incomes less than \$10,000 compared to 4.2% in households with incomes of \$50,000 or more).

Boys spend more time playing video games than girls (averaging 7.3 hours per week compared to 4.2 hours per week for girls). Older children (9-11 years olds) spend more time using a computer and assisting in chores than younger children (6-8 year olds). Three to five year olds spend more time in childcare than older children, and 1-2 year olds spend more time in childcare than other age groups.

ⁱ To simplify the text, confidence limits are only reported for overall children estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs.

ⁱⁱ Comparisons between groups reported in this chapter are all significant unless "NS" —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

Figure 1. Proportion reporting no participation in physical activity by income

Nutrition

According to parental reports, over one half of First Nations children always or almost always eat a nutritious and balanced diet (55.4%), whereas 39.6% only sometimes do.ⁱⁱⁱ The remaining 5% either rarely (4.3%) or never (0.7%) eat a balanced and nutritious diet.

Although no differences were reported between boys and girls, age related differences are apparent in terms of eating a balanced and nutritious diet, and in the frequency of consumption of unhealthy foods. Generally speaking, parents of older children (9-11 year olds) are less likely than those of younger children (less than 2 years of age) to report that the

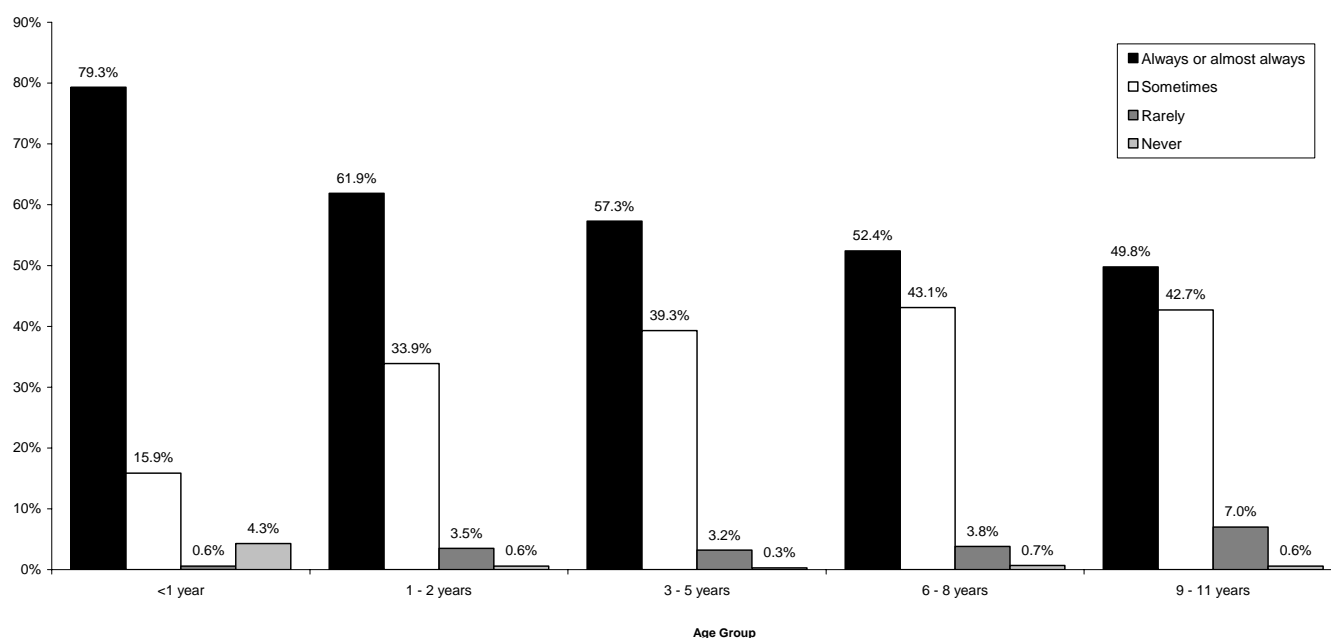
children always or almost always eat a nutritious or balanced diet.

Although just as likely to do so daily, older children are more likely than younger children to consume soft drinks a few times a week (51.0% of 9-11 year olds compared to 42.4% of 3-5 year olds). Older children are also more likely to add salt to their food several times a day (9.1% of 3-5 year olds versus 17.9% of 9-11 year olds).

Body Mass Index

Estimation of body mass index (BMI) cut-points for children requires calculation by single-year age group.²³ Therefore, classifications of normal (or under) weight, overweight, and obese are arrived at by first calculating body mass index and then using age-appropriate cut-off points for the BMI measure. These cut-off points are defined by an internationally accepted definition of “overweight” and “obese” for children.²⁴ No cut-off points were available for an underweight classification; therefore underweight children are combined with the normal category in this analysis. According to this classification, 41.5% of children are considered to be normal or under weight. However, 22.3% of First Nations children are considered overweight. Moreover, 36.2% are deemed obese.

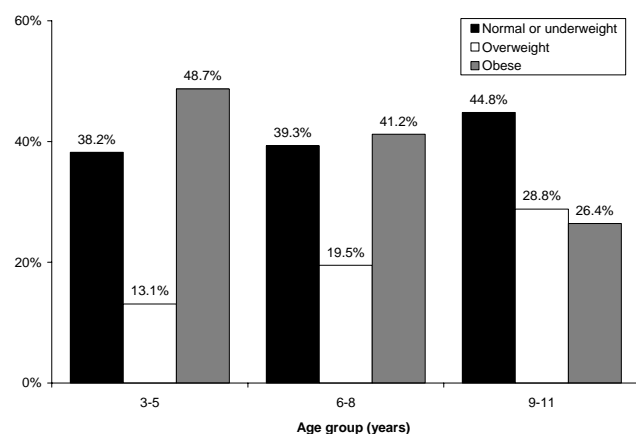
No differences were apparent in body mass index between Aboriginal boys and girls. Older children (9-11 years) are twice as likely to be overweight (28.8%) compared to younger children (3-5 years) (13.1%); however, the inverse

Figure 2. Frequency of consuming a nutritious and balanced diet by age (n=6,604)

ⁱⁱⁱ This is not to say that education does not need to occur with regard to what constitutes a balanced diet (see page 10 statistics regarding adding salt).

relationship is true for *obesity* (48.7% for 3-5 year olds compared to 26.4% for 9-11 year olds).

Figure 3. Proportion of children meeting BMI criteria by age group (n=2,521)



Relationships between physical and sedentary activity, nutrition and body mass index

Children who participate in physical activity every day are reportedly more likely to eat a balanced and nutritional diet always or almost always (60.9%) compared to those who participate less than once a week (45.5%). There is a marked difference between those who are active daily and those who are never active in terms of never or hardly ever consuming the following:

- Soda drinks (18.7% of those who are active daily versus 54.9% of those never active);

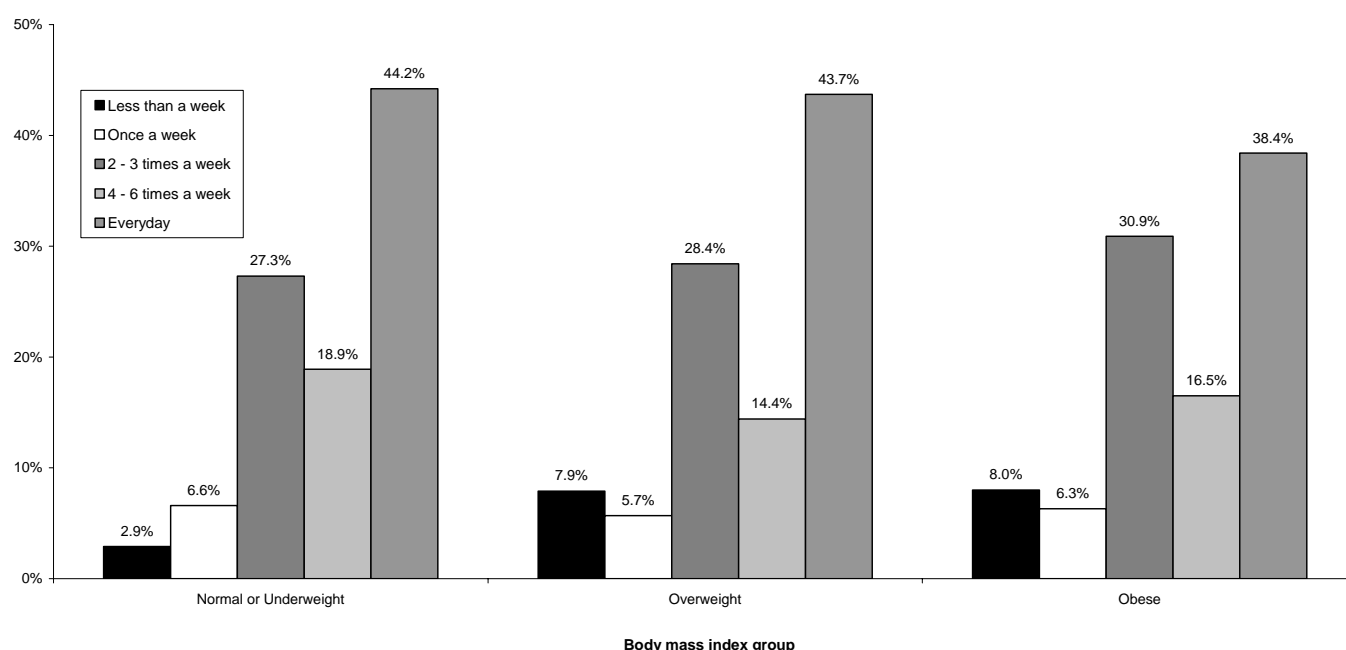
- Fast food (21.7% of those who are active daily versus 44.9% of those never active);
- Baked goods such as cakes, pies and cookies (13.5% of those who are active daily versus 46.6% of those never active); and,
- Snack food such as French fries, potato chips, and pretzels (11.5% of those who are active daily versus 36.4% of those never active).

Conversely, children who are active daily are more likely to consume protein-based traditional foods (31.8%) and traditional berries and wild vegetation (25.7%) than those who are never active (19.1% for protein-based foods and 9.5% for vegetation).

Children who always or almost always consume a nutritious and balanced diet reportedly watch fewer hours of television than those who rarely consume such a diet. Children who consume soda pop or eat baked goods (pies, cakes and cookies) a few times a week reportedly spend more hours watching television than those children who never or hardly ever consume these items. In contrast, children who often eat traditional protein-based meat and wild vegetation are more likely to spend time outdoors than those who do not.

The number of hours spent outdoors is directly related to how often children are active. Children who are active every day are more likely to spend time outdoors (16.7 hours per week) than those who are never active (10.2 hours per week). Generally speaking, more frequent participation in sports teams and lessons is associated with fewer hours in child-care (12.2 hours a week in child care for those participating

Figure 4. Frequency of physical activity participation by body mass index (n=2,321)



in sports teams 1-3 times a week versus 19.1 hours a week in child care for those who never participate).

According to the Regional Health Survey, children of varying body weights hold similar nutritional or dietary practice patterns. However, children who are overweight (7.9%) or obese (8.0%) are reportedly more likely than normal or underweight children (2.9%) to participate in physical activities less than once a week.

Physical activity, nutrition and body mass in a cultural framework perspective

Table 2 summarizes the significant findings related to physical activity, nutrition and body mass index according to a cultural framework that considers the total person and total environment. In addition to relationships with individual factors described in the first three sections of this chapter, significant relationships to societal, social and physical and mental health factors are described.

Table 2. Relationship of Key Indicators with Physical activity, Diet and Body Mass (BMI)

	Physical activity	Diet	BMI
Individual factors			
Age	✓	✓	✓
Gender	(sports) ✓	x	x
Income	✓	x	x
Health factors			
General Health Status	✓	✓	✓
Sedentary activity	x	✓	x
Participation in physical activity or sports	n/a	✓	✓
BMI	✓	x	n/a
Balanced and nutritious diet	✓	n/a	x
Mental health factors			
Emotional or behavioral problems	x	x	x
Societal factors			
Community size	x	(trad) ✓	✓
Comparison to other children in grade	✓	x	✓
Skipped a grade due to academic achievement	x	x	x
Repeated a grade	✓	x	x
Social factors			
Interaction with family	✓	✓	x

✓ Significant association at the p=.05 level

Trad Refers to an association with the consumption of traditional foods only

x No observed association

n/a Not applicable

Children who are active on a daily basis (46.2%) are more likely than those active one to three times a week to report excellent health (26.7% of those active once a week and 34.6% of those active two to three times a week). Interestingly, children who participate in physical activities

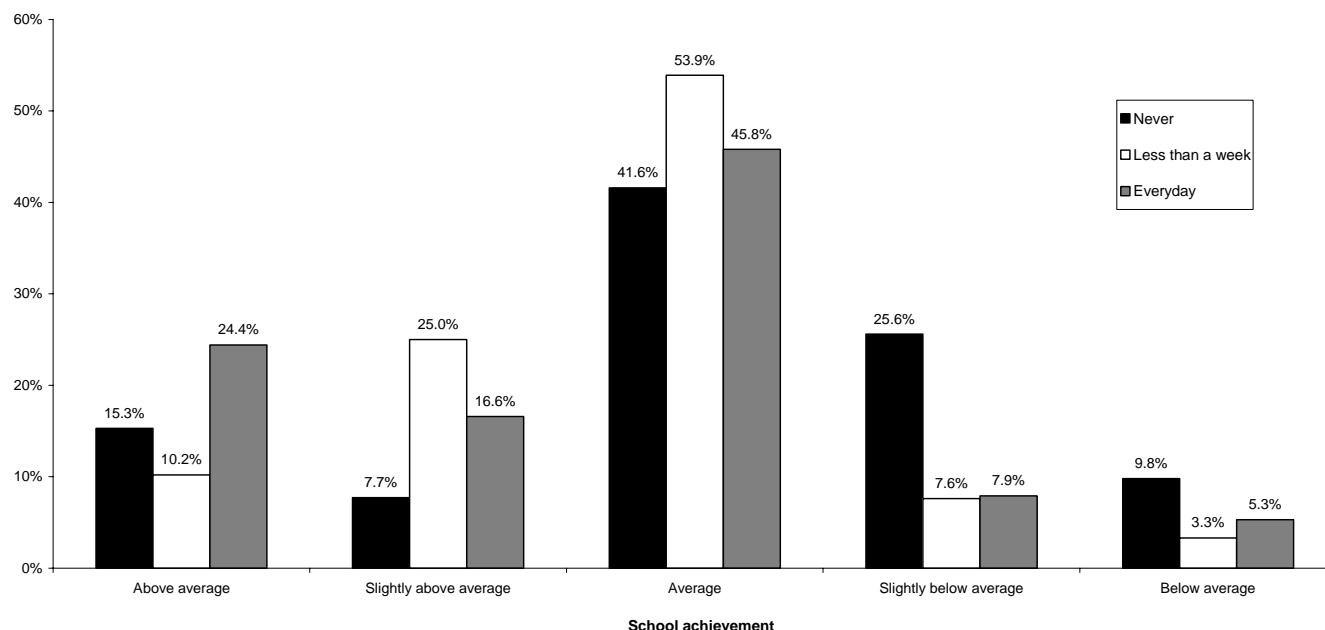
four to six times a week are less likely than those who never participate to get along very well with the rest of the family, yet are almost twice as likely to reportedly get along with them quite well with hardly any difficulties. Age may influence these findings to a certain degree. For example, older children (age 9-11) who are active every day (52.7%) are more likely than those who are active occasionally or not at all (29.7%) to get along with their family very well. Conversely, younger children (age 1-2) who are active occasionally or not at all (75%) are more likely to get along with their family very well than those who are active four to six times a week (43.7%).

Children who participate in physical activities every day (24.4%) are more likely than those who participate less than once a week (10.2%) to be considered above average in their grade compared to their peers.

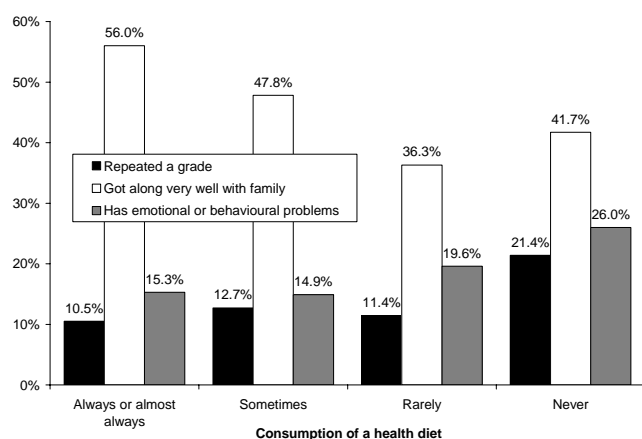
Children who *always or almost always* eat a balanced diet are more likely than those who *sometimes* do to cite excellent health (47.4% for those who always do versus 32.1% of those who sometimes do). However, those who *rarely* eat a balanced diet are more likely (32.3%) to report being in good health compared to those who *always or almost* do (16.8%). Children who always or almost always eat a balanced and nutritious diet (56.0%) are more likely than those who rarely eat a balanced diet (36.3%) to get along with the rest of the family very well.

Children living in small communities (less than 300 residents) are reportedly almost twice as likely to consume traditional protein-based meat products (44.8%) and eat traditional berries and wild vegetation (33.7%), compared to those in communities of 1,500 residents or more (where 23.3% report eating traditional meat and 17.8% report eating wild vegetation).

Parents of obese children are more likely than parents of normal or underweight children to say their children are only in good health (35.6% versus 15.1% respectively). Children who are obese are reportedly less likely (13.5%) than normal or underweight children (25.1%) to be considered above average in their grade during the year compared to their peers. Children living in small communities (<300 residents) are less likely than those in communities of more than 1,500 residents to be classified as obese (25.7% in small communities versus 44.2% in large communities).

Figure 5. School achievement by physical activity participation* (n=3,785)

*Comparing only those who participate in physical activity every day versus those who do so less than once a week.

Figure 6. Frequency of consuming a healthy diet by social factors (n=5,705)

Discussion and Recommendations

The data on the proportion of overweight and obese children from the RHS support the necessity of other research on First Nations children (22.3% of First Nations children are considered overweight and 36.2% obese). A primary reason for this is that children make up one-third of the Aboriginal population.²⁵ As mentioned in the introduction, immediate consequences of childhood obesity may include diabetes, asthma, gallstone development, hepatitis, obstructive sleep apnea, orthopedic problems (bowing of the legs as an example), menstrual abnormalities and neurological conditions.²⁶ In addition, social and emotional problems may

result from obesity and being overweight. Obese children have less confidence in their body image. This low self-esteem can translate into lower academic achievement and other undesirable effects. Differences in self-esteem can also be based on age, culture and socioeconomic status. Longer-term consequences of obesity often include adult morbidity and mortality.²⁷ Strategies for diet and physical activity are part of ensuring a balance of energy intake and expenditure, and these strategies need to be culturally appropriate. Given that four in ten children only sometimes eat balanced and nutritious meals, dietary strategies need to inform on how to include nutritious foods during this critical period for growth and development. Daily physical activity is also recommended for optimal growth and development,²⁸ yet children 9-11 years old are unlikely to be active daily. Strategies for physical activity need to specifically consider approaches to increase participation in daily physical activity among this age group. An interesting finding in the data reveals that children who hardly or never drink soda pop or eat baked goods (pies, cakes and cookies) spend less hours watching television than those children who consume larger amounts (a few times a week) of pop and baked goods. This is supported by content analysis research showing that a child can be exposed to one food commercial for each five minutes of Saturday morning television viewing²⁹, and that television food advertising has a negative influence on a child's ability to identify a healthy food choice from paired items.^{30,31} Besides parental/guardian responsibility for reducing or restricting the amount of television a child watches, government policies regarding television content and advertising may be useful.

Although pervasive in the pediatric population as a whole, physical inactivity and poor quality diet are more prevalent in certain population segments than in others. Indeed, certain physical activities are more popular among certain population groups than others, and this needs to be reflected in the development of strategies for improving participation rates in physical activity. For example, participation in traditional physical activities, team sports and activities of greater intensity are more prevalent among First Nations boys, whereas individual activities of more moderate intensity are more popular with First Nations girls.

Walking remains prevalent among both girls and boys and across age groups. These patterns are consistent with parental data^{32,33} and need to be considered in developing policies and strategies targeting certain groups.

The nutrition data gathered by the RHS is consistent with other studies examining food intake and food habits of Aboriginal children. For example, along with the RHS, data in other studies found that fat composition in diet to be related to accumulation of body fat.³⁴ Several interesting findings indicated that children who always or almost always eat a balanced and nutritious diet are more likely to get along with the rest of the family very well compared to those who never eat a balanced diet. This suggests that having a nutritious diet may confer greater benefits for children than only physical health benefits. Why are children not eating a balanced diet? Is it related to food preferences, access issues or lack of knowledge on how to create such a diet? Much more work is required to determine the absolute amount of physical activity undertaken, nutrients in the diet, and access to opportunities for physical activity and nutritious choices, before understanding the issues related to achieving energy balance among First Nations children.

Understanding of children's physical activity and dietary patterns flows from an ecological and cultural framework that considers: physiological levels, such as level of growth and development; psychological factors such as motivation, confidence and self-efficacy; socio-cultural factors, such as the role of family and socio-economic status; and ecological factors, such as geography, climate, the availability of opportunities to be active, and the availability of—and opportunity to obtain—nutritious foods.³⁵ Thus, policies and strategies to increase physical activity and improve diet need a broad perspective that considers the agriculture, transportation, recreation, and social sectors. A review of existing policies and practices in these sectors should examine how they influence access to opportunities among boys and girls of different ages, as well as the families and communities in which they live. As physical activity and nutrition contribute to optimal development both physically and as a 'total' person (e.g., in educational attainment), independent but complementary strategies need to be developed within a common framework to increase synergy in developing interventions for children and adults.³⁶

Healthy living strategies need to consider the role of potential protective factors other than physical activity and nutrition in improving health and reducing rates of overweight and obese children. These would include policies addressing socio-economic disparities, community opportunities, physical environment and social support. Moreover, harmonized programs that involve school, community, and family are important in developing healthy eating and activity behaviors among children by creating supportive social norms and opportunities. Additional holistic models should be used to further investigate how a combination of factors could influence healthy lifestyle practices and obesity rates among First Nations communities and children in particular. For example, steps could be taken to ensure that the 4-dimensional aspects of "total person" and "total environment" are considered when developing strategies for First Nations children. An Aboriginal cultural perspective is essential in promotion strategies and understanding the many benefits and barriers to activity.³⁷ For example, this study reveals that children who regularly participate in physical activity are more likely to receive above average grades compared to peers. A list of recommended approaches to increasing physical activity of children in the more general population is available.^{38,39,40} These approaches could be vetted with community elders, school officials and recreational service providers, to see what is culturally appropriate for certain Aboriginal communities depending on their size, location, and accessibility to opportunities.

Much more information is required on food intake, and on diet quality and its determinants, (including food insecurity), and this information should be monitored on a regular basis. This would ideally include collection of objective measures of energy intake. Similarly, monitoring physical activity levels through objective measurement of energy expenditure should continue and expand to include total physical activity across domains. Objective anthropometric measures (e.g., height, weight, and waist girth) are required. These data on dietary and physical activity are essential to design appropriately targeted strategies. Only through their regular collection can progress in the critical factors influencing the growth and development of First Nations children be tracked, to ensure that the changes to policy and strategies sparked from the information gathered by the Regional Health Survey are effective.

Notes to Chapter 29

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Chapter 30

Disability and Chronic Conditions

Abstract

This chapter explores disability and long-term health conditions among First Nations children 0–11 years. Children with disabilities are in much the same familial living arrangements as other First Nations children. They are as likely to be attending school but tend to fare less well, academically. Their involvement in non-school cultural and physical activities is as other children.

The research found no statistically significant differences in the household incomes of First Nations children with and without disabilities or in the respective education levels of parents.

The most commonly reported long-term conditions among First Nations children are asthma, allergies and chronic ear infections/problems. Less widely reported but having potentially harmful or challenging implications are chronic bronchitis, Attention Deficit Hyperactivity Disorder (ADHD), learning disability and Foetal Alcohol Syndrome and Foetal Alcohol Effects (FAS/FAE). With the exception of allergies and perhaps learning disabilities, the quality of treatment for these conditions among First Nations children is poor.

It is fairly common for First Nations children with disabilities to have more than one long-term condition. Their general health is poorer than that of their counterparts without disabilities and a significantly higher proportion have emotional and behavioural difficulties, a problem more pronounced among boys than girls.

First Nations children with disabilities are more likely to face various barriers to accessing health care services.

Introduction

Chapter Overview

This chapter explores disability and long-term health conditions among First Nations children 0 to 11 years. It examines general demographics (e.g., prevalence of disability by age, gender and various other dimensions; living arrangements, schooling and participation in community activities; family income and parents' formal education) and; specific health-related conditions and issues of access to health-related services. This chapter provides selected comparisons of First Nations children with and without disabilities, as well as comparisons of First Nations children and their counterparts in the broader mainstream child population of Canada.

For comparative purposes this chapter includes data from the general files and health files of the Statistics Canada's National Population Health Survey (NPHS) of 1998–99.ⁱ For explanatory purposes, in a few places the discussion draws from Statistics Canada's Participation and Activity Limitation Survey (PALS) of 2001, a survey with a focus on disability.ⁱⁱ

The research conducted for this chapter generally used the NPHS instead of PALS for disability comparisons with the First Nations Regional Longitudinal Health Survey (RHS) because the purpose and context of the RHS is a closer match with the NPHS than with than with PALS. The high level indicators of disability in the RHS are also more similar to those in the NPHS.ⁱⁱⁱ

Some of the differences between disability indicators in the RHS and in Statistics Canada's surveys are discussed in *Chapter 4: Disability and Chronic Conditions*.

Working Definition of Childhood Disability

Similar to Statistics Canada's approach, the RHS flags children whom, because of a physical or mental condition or health problem, are limited in the kinds or amount of activity they can do at home and school or in other activities such as leisure or travelling. Respondents (e.g., parent/guardian) can indicate whether the child is limited "often" or "sometimes". The RHS also asks a battery of questions about long-term health conditions and about whether any of these limit the kinds or amount of activity a child can do. Research studies define children as having a disability if they are indicated as limited in their activities across any of these questions.

Results

Basic demographics of childhood disability

General prevalence

Unpublished data provided to The Roeher Institute by the Office for Disability Issues (ODI) and based on the disability questions for the 2001 Census indicate that disability is 1.5 times more prevalent among First Nations children 0 to 14 years than among non-Aboriginal children in Canada.^{iv} These findings are similar to those reported by ODI for Aboriginal adults in Canada.¹

Using only the data on activity limitations at home, school or other activities, which are 'high level' disability indicators common to the RHS children's survey and the NPHS, 7.8%^v of First Nations can be classified as having disabilities.

Using only the data that are unique to the RHS on activity limitations that stem from any specific long-term health conditions, 8.1% of First Nations can be classified as having disabilities.

There is some overlap and differentiation between these approaches. Table 1 shows the estimated prevalence of disability among First Nations children using each approach and both approaches together. Overall, based on combining both approaches, 11.7% of First Nations children have disabilities.

Taking the RHS figure as a benchmark and comparing with the corresponding data from the NPHS, childhood disability may be as much as 1.8 times higher among First Nations children.^{vi}

Table 1. Prevalence of disability in First Nations children

Definition 1: Limited at home, school or other activities	Definition 2: Limited because of any long-term health condition		
	Others	Disability	Total with disability
Others		3.9%	3.9%
Disability	3.6%	4.3%	7.8%
Total	3.6%	8.1%	11.7%

Prevalence and gender

The research found that disability is just as common among First Nations boys as girls 13.3% of First Nations boys have disabilities compared with 10.1% of girls (NS).^{vii}

ⁱ The NPHS provides information on the health and health-related behaviours of Canadians. It did not survey people in the military or who lived in institutional collective dwellings, the northern territories or on First Nations reserves.

ⁱⁱ PALS did not survey people who lived in the northern territories or on First Nations reserves.

ⁱⁱⁱ The more recent Canadian Community Health Survey does not include children younger than 12 years.

^{iv} The term "Aboriginal people" as used by ODI includes First Nations, Métis and Inuit people.

^v To simplify the text, confidence limits are not reported for overall children's estimates unless the coefficient of variation is greater than 33.3%.

^{vi} The 7.8% prevalence estimate shown on Table 1 is based on an approach to identifying disability similar to that used in the NPHS, which yields a 4.4% prevalence of childhood disability in the general population; $7.8 \div 4.4 = 1.8$. Rounding errors are responsible for the totals not syncing.

^{vii} Comparisons between groups reported in this chapter are statistically significant except where "NS"—not significant—is noted. For this chapter, differences are judged to be significant if the Bonferroni-adjusted 95% confidence intervals do not overlap.

Of all First Nations children with disabilities, 58.2% are boys. Among First Nations children without disabilities, 50.5% are boys (NS). Although not significant, the general direction of this finding is similar to that based on the NPHS, which shows that 60.1% of all children with disabilities are boys. PALS data indicate that 62.6% of children with disabilities (0–14 years) are boys.²

Prevalence and age

Disability can be difficult to detect in the very early years. Accordingly, it is common to see higher reported prevalence rates among older children.³ However, according to the RHS, among First Nations children 0–5 years, 9.5% have disabilities compared with 13.5% in the 6–11 age group. Of all First Nations children with disabilities, 63.1% are in the 6–11 age group compared with 53.5% of their counterparts without disabilities.

Prevalence, isolation status and size of community of residence

The RHS flags children according to the isolation status of their community of residence. The definitions of isolation status are as follows.

- Remote isolated: no scheduled flights
- Isolated: flights, good telephone but no road access
- Semi-isolated: road access greater than 90 km to physician services
- Non-isolated: road access, less than 90 km from physician services

The prevalence of childhood disability is roughly twice the overall rate in isolated communities (20.3%). Of all First Nations children with disabilities, 32.8% live in isolated communities compared with 17.4% of children without disabilities, however this difference is not significant.

Figure 1 shows the percentages of children with disabilities in communities of various sizes. Children with disabilities are more likely to be found in small communities of less than 300 persons (12.4%) and in larger communities of 1,500 or more people (13%). Of all children with disabilities, 40.6% live in communities of 1,500 or more people compared with 35.9% of children without disabilities, however this difference is not statistically significant.

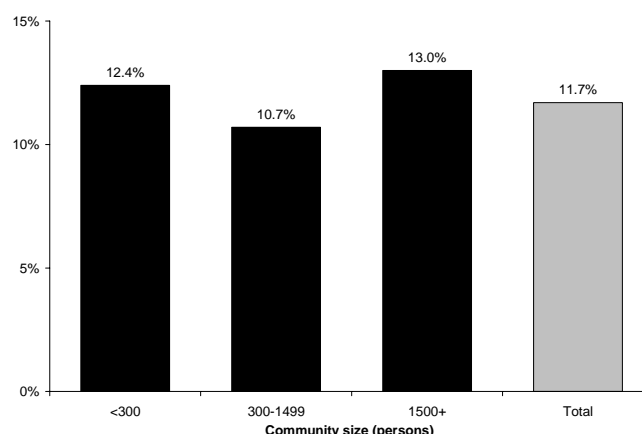
Living arrangements, schooling and activities in the community

Living arrangements

Generally, First Nations children with disabilities are in similar living situations as those of other First Nations children. Some 88.5% of First Nations children with disabilities live with their biological mothers compared with

90% of other First Nations children (NS). Roughly half (50.6%) of First Nations children with disabilities live with their biological fathers compared with about the same proportion of other First Nations children (52.2%) (NS). About thirty-six percent of children with disabilities live with brothers or sisters compared with 34.8% of non-disabled children (NS). Some 11.4% and 10.9%, respectively, live with their grandparent(s) while 7.9% and 8.8%, respectively, live with an aunt, an uncle or cousins (NS).

Figure 1. Prevalence of disability by community size (n=6657)



Schooling

Among those old enough to attend school, First Nations children with disabilities are about as likely as their counterparts without disabilities to be attending school (76.4% compared with 71.8%, respectively). They are also about as likely to have attended an Aboriginal Head Start program (39.5% compared with 36.4%).

The academic progress of First Nations children with disabilities is a mixed picture. On one hand they are twice as likely as other children to be doing below or slightly below average compared with other pupils in their grade (22.9% compared with 11.1% respectively). On the other hand, they are also about as likely as other First Nations children to be doing above or slightly above average (40.2% compared with 40.3%). First Nations children with disabilities make up 22.6% of all First Nations children who are reportedly doing below or slightly below average and 12.4% of children doing above or slightly above average. First Nations children with disabilities are somewhat more likely than their non-disabled counterparts to have repeated a grade (15.2% compared with 11.0%) (NS).

Cultural and other activities in the community

The research for this chapter found no major differences in the extent to which First Nations boys with and without disabilities participate in non-school activities such as art or music groups/lessons and traditional singing, drumming or dancing groups/lessons. Nor did the research find major

differences in terms of the frequency of boys reading or being read to daily or a few times a week.

There is a significant difference, however, in the extent to which First Nations boys 6–11 years with disabilities ever take part in non-school sports teams or lessons only 44.5% do so compared with 67.4% of boys this age without disabilities.^{viii}

Concerning First Nations girls with and without disabilities, there are no significant differences in the extent to which they take part in sports teams or lessons, in traditional singing, drumming or dancing, or reading/being read to daily or several times a week.

Looking at the frequency of participation in any kind of physical activity, the research found no significant differences between First Nations children with and without disabilities, among whom 7.2% and 9.4% are never physically active, respectively, and among whom 57.1% and 59.3%, respectively, are physically active at least 4 times or every day in a given week.

Family income and education

Household income

Overall, the research found no statistically significant differences in the household incomes of First Nations children with and without disabilities. Some 62.9% of children without disabilities are in households with incomes less than \$30,000 as are 63.5% of First Nations children with disabilities. Similarly, 37.1% of children without disabilities are in household with incomes above \$30,000 as are 36.5% of children with disabilities. Even when breaking down the incomes into finer categories and taking sampling variability into account, the income profiles of families look similar, regardless of the presence of childhood disability. The income profiles also look similar for families with and without children with disabilities when comparing the 0–5 and 6–11 age groups.

Parents' education level

The research generally found no significant differences in the level of formal education attained by the mothers of First Nations children with and without disabilities, nor in the formal education levels of fathers.

Health and related issues

Long-term Conditions and Disability in Childhood

Table 2 shows the prevalence of selected long-term conditions the RHS classifies as health conditions among First Nations children. The RHS enquired into 19 such conditions and allowed for open-ended responses about

conditions not specifically presented on the children's questionnaire. Among the conditions for which structured questions were asked, some are very low prevalence and involve high sampling variability so are not shown on the Table. These include cognitive or mental disability, epilepsy, cerebral palsy, physical disability other than cerebral palsy, HIV – AIDS, kidney disease, liver disease and diabetes. That they are very low prevalence conditions might be considered a bit of "good news".

Column D on Table 2 shows that asthma, allergies and chronic ear infections/problems are the most common of the conditions reported for First Nations children. Chronic bronchitis is not so prevalent but presents serious health risks. ADHD, learning disability and FAS/FAE are again fairly low in prevalence but can involve multiple challenges to academic performance and social integration that can persist into and throughout adulthood.

Asthma is a chronic inflammation of the airways that causes swelling and narrowing of the airways, resulting in difficulty breathing. The bronchial narrowing is usually either totally or at least partially reversible with treatments. Triggers include allergens and irritants (respiratory infections, tobacco smoke, smog and other pollutants, Aspirin, other non-steroidal anti-inflammatory drugs, physical exercise and various other environmental, emotional and hormonal factors).⁴

At 14.6%, the prevalence of asthma among First Nations children is quite high given that the prevalence among children in the general population is 8.8%. First Nations children with disabilities and asthma are more likely than other First Nations children with asthma to have had an asthma attack in the past 12 months (41.0% compared with 19.0%). Overall, 57.2% of First Nations children with asthma are being treated for this condition.

Allergies are exaggerated reactions of the immune system in response to bodily contact with certain foreign substances that are usually harmless. Allergy-producing substances (allergens) include pollens, dust mites, moulds, danders, and foods.⁵ Allergies are quite prevalent among First Nations children (12.2%) and among other children in Canada (16.4%). Of First Nations children with allergies, only 29.5% are being treated.

Bronchitis is a respiratory disease that inflames the mucous membrane in the lungs' bronchial passages. As the irritated membrane swells and grows thicker, it narrows or shuts off the airways in the lungs, resulting in coughing spells accompanied by thick phlegm and breathlessness. The disease comes in two forms: acute (lasting less than 6 weeks) and chronic (reoccurring frequently for more than two years). Acute bronchitis is responsible for the hacking cough and phlegm production that sometimes accompany an upper respiratory infection.

^{viii} 34.1% of First Nations boys with disabilities do so at least once a week compared 54.9% of their counterparts without disabilities.

Table 2. Selected long-term health-related conditions among First Nations children, by two disability statuses

A	B	C	D	E	F
Long-term conditions	% with no disability reporting the long-term condition	% with any disability reporting the long-term condition	Total % (with and without disabilities) reporting the long-term condition	Of those with the condition, % with any disability	Of those with the condition, % with disability caused by that condition
Chronic bronchitis	2.6% E	10.5% E	3.6% E	34.3%	16.9% E
Allergies	9.2%	35.3%	12.2%	32.9%	18.8%
Asthma	10.9%	43.5%	14.6%	34.4%	26.5%
Blindness or serious vision problems	0.8%	– E	1.1%	36.9%	– E
Chronic ear infections or ear problems	7.7%	20.7%	9.2%	26.1%	15.2%
Hearing impairment	1.2%	4.4% E	1.6%	32.5%	– E
ADD/ADHD (1)	2.0%	7.4% E	2.6%	32.7%	28.3%
FAS/FAE (2)	1.5%	– E	1.8%	–	– E
Learning disability	1.3%	15.4%	2.9%	60.1%	37.0%
Tuberculosis	0.5% E	– E	0.5% E	–	– E
Heart condition or problem	1.6% E	5.7% E	2.1% E	32.6%	– E

1. Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder

2. Foetal Alcohol Syndrome or Foetal Alcohol Effects

E High sampling variability. Use figures with caution.

– E Sampling variability too high for release of data.

Chronic bronchitis is a serious long-term disorder that often requires regular medical treatment.⁶

While sampling variability is high and estimates need to be used with caution, it would appear that chronic bronchitis is more prevalent among First Nations children at 3.6% than among children in the general population, where the prevalence is only 1.4%. Only 24.0% of First Nations children with chronic bronchitis are being treated for this condition.^{ix}

Chronic otitis media is a persistent inflammation of the middle ear. Following an acute infection, fluid may remain behind the eardrum for up to 3 months before resolving. Chronic otitis media may develop after a prolonged period of time with fluid or negative pressure behind the eardrum. The condition can cause ongoing damage to the middle ear and eardrum and there may be continuing drainage through a hole in the eardrum. Chronic otitis media often starts painlessly without fever. Sometimes a subtle loss of hearing can be due to chronic otitis media.⁷

Some 9.2% of First Nations children have chronic ear infections/problems that are probably otitis media. The NPHS does not provide data on the prevalence of this condition in the broader child population in Canada so comparisons between First Nations and other children cannot be drawn. Other researchers have expressed concern that otitis media may be a growing problem among Inuit

children.⁸ Only 27.4% of First Nations children with this condition are receiving treatment for it.

Attention Deficit Hyperactivity Disorder (ADHD) refers to a family of related chronic neurobiological disorders that interfere with an individual's capacity to regulate activity level (hyperactivity), inhibit behaviour (impulsivity), and attend to tasks (inattention) in developmentally appropriate ways. Children with ADHD have functional impairment across multiple settings including home, school, and peer relationships. ADHD can have long-term adverse effects on academic performance, vocational success, and social-emotional development. Children with ADHD may experience peer rejection and engage in a broad array of disruptive behaviours. They have higher injury rates and for many the impact of ADHD continues into adulthood.⁹ ADHD seems to involve genetic links. Children who have this condition usually have at least one close relative who also has it; at least one-third of all fathers who had ADHD in their youth have children with ADHD; and if an identical twin has the condition the other twin is likely to have it as well.

While 2.6% of First Nations children have been diagnosed as having ADD/ADHD only 37.6% with this condition are receiving treatment for it.

Learning Disability (LD) is a condition that affects people's ability to either interpret what they see and hear or to link information from different parts of the brain. These limitations can show as specific difficulties with spoken and

^{ix} The percentage receiving treatment should be used with caution owing to high sampling variability.

written language, coordination, self-control, or attention. Such difficulties extend to schoolwork and can impede learning to read or write, or to do math. LD can involve lifelong conditions that, in some cases, affect many parts of a person's life: school or work, daily routines, family life, and sometimes even friendships and play. In some people, many overlapping learning disabilities may be apparent. Other people may have a single, isolated learning problem that has little impact on other areas of their lives. To be diagnosed as a learning disability, specific criteria must be met. Genetic factors, maternal use of tobacco or alcohol or drugs during pregnancy, complications during pregnancy, environmental toxins and chemotherapy and radiation treatment of children with cancer have all been linked as risk factors for LD.¹⁰

Of the 2.9% of First Nations children with learning disabilities, 36.8% are being treated for it.

While prevalence estimates of LD and ADD/ADHD vary according to a range of factors, a rate between 2% and 4% is to be anticipated based on statistical probabilities.¹¹ Some prevalence estimates of ADHD are higher, ranging from 3% to 5% and even as high as 7.5%.¹² The rates of LD (2.9%) and ADD/ADHD (2.6%) among First Nations children would seem to be in line with rates to be expected in the broader population.

Foetal Alcohol Syndrome (FAS) is the sum total of the damage done to the child before birth as a result of the mother drinking alcohol during pregnancy. Common and consistent features of FAS involve diminished growth, irritability, hyperactivity, impaired motor performance, significantly diminished intelligence, smaller head size, various atypical facial and skeletal attributes and heart murmur. *Foetal Alcohol Effects (FAE)* is a "softer" diagnosis than FAS and is considered when the person has some signs of FAS, does not meet all of the necessary criteria for FAS, and when there is a history of alcohol exposure before birth.¹³ 1.8% of First Nations have been diagnosed as having FAS/FAE. Sampling variability is very high so the data can't be released concerning the extent to which these children are receiving treatment. It would appear, however, that relatively few are being treated.

Column C on Table 2 shows the percentage of children with disabilities who have the long-term conditions reported in Column A. High percentages of children with disabilities have asthma (43.5%), allergies (35.3%) and chronic ear problems (20.7%).

Column E takes as the units of analysis the "universes" of children who have a given condition and then shows the percentage of these children who have a disability, whether caused by that condition, by one or more additional long-term conditions, or by factors that are not specified but that result in activity limitations at home, school or other situations. Generally, about one-third of children with the long-term health conditions shown on the table have some

level of disability, with the exception of learning disability. Here, 60.1% of children with this condition experience activity limitations due to various factors. These figures suggest that there is about a 1 in 3 chance that children who have any of the conditions shown on Table 2 will have some level of disability, and that children with learning disabilities are likely to face activity limitations. Of particular concern are high prevalence conditions such as asthma, allergies and chronic ear infections.

While the figures for low prevalence conditions cannot be shown owing to high sampling variability, children reported as having a cognitive or mental disability, epilepsy and cerebral palsy were found to have activity limitations in the majority of cases.^x

Column F on Table 2 again takes as the units of analysis the 'universes' of children with a given long-term condition but shows the extent to which children with a given condition incur disability (are limited in their activities) as a result of that condition. Here the figures range from 15.2% to 37%. In all cases the prevalence of condition-specific disability is lower than the prevalence of disability shown in Column E because the figures in Column E represent disability stemming from *any* cause and are inclusive of the figures shown in Column F.

Multiple childhood disabilities and health conditions

It is not uncommon for First Nations children to report more than one long-term health condition and more than one type of disability. The average number of long-term health conditions among children without disabilities is 0.4. Among children with disabilities the average number is 1.8. Children with any disability are limited in their activities by 1.2 long-term conditions on average.

Among First Nations boys with and without disabilities the average number of long-term health conditions is 0.7 and the average number of disabilities is 0.2. Among girls the average number of long-term health conditions is 0.4 and the average number of disabilities is 0.09.

Childhood disability and general health

The general health of First Nations children with disabilities is poorer overall than that of other First Nations children. For instance, the parents/guardians of 41.5% of children with disabilities rated their children's health as good or excellent compared with 73.7% of children without disabilities. Some 28.2% of children with disabilities are in fair or poor health compared with only 4.1% of other First Nations children. In the general child population in Canada, 11.2% of children

^x The numbers of First Nations children with HIV – AIDS are virtually non-existent based on the RHS. The numbers of children with kidney disease, liver disease and diabetes are very low and involve rates of disability that vary considerably at the 95% confidence level. Accordingly, no plausible conclusions can be drawn as to the prevalence of disability for children with such conditions.

with disabilities are in fair or poor health and 56.1% are in excellent or very good health.^{xi}

The sampling variability is high and the figures need to be used with caution for First Nations children with disabilities in the 0–5 and 6–11 age groups. However:

- The general health of 34.3% of First Nations children 0–5 years with disabilities is reported as fair or poor, compared with only 3.2% of their counterparts without disabilities.
- The general health of 24.6% of First Nations children 6–11 years with disabilities is fair or poor, compared with 5% of their counterparts without disabilities in this age group.

Children with and without disabilities are about as likely to eat a nutritious and balanced diet always or almost always (62.3% compared with 54.5%) (NS).

Childhood disability and dental care

Most First Nations children with disabilities had received dental care sometime in the twelve months before the RHS was conducted (71.3%), which was also the case for their non-disabled counterparts (67.0%) (NS). First Nations children with disabilities are more likely than their counterparts without disabilities to have *ever* received dental care (90.9% compared with 79.5%).

Children with and without disabilities are about as likely to need routine dental maintenance, extractions, fluoride treatment, orthodontic work and urgent dental care. Children with disabilities stand in slightly more widespread need of having cavities filled and other restorative work such as crowns and bridges (36.2% compared with 25.7%).

Childhood disability and behavioural issues

The RHS asked parents/guardians about children's behavioural and emotional problems as compared with the children's non-disabled peers. While the sampling variability is high for First Nations boys 0–5 years and the estimate needs to be used with caution, 41.1% of these boys are reported as having emotional or behavioural difficulties^{xii} compared with 10.9% of their non-disabled peers of the same age. Similarly, 46.8% of First Nations boys with disabilities 6–11 years are reported as having emotional or behavioural problems^{xiii} compared with 16.9% of their age peers without disabilities. Overall, 44.7% of First Nations boys with disabilities have such difficulties compared with 14.2% of their counterparts without disabilities. 33.5% of all First Nations boys who were reported on the RHS as having emotional or behavioural problems are boys with disabilities.

For girl children 0–5 years with disabilities and emotional/behavioural problems, the sampling variability is very high and the data are not releasable except to say that the percentage is similar to the 5.8% for girls without disabilities. First Nations girls 6–11 years with disabilities are more extensively reported as having emotional or behavioural difficulties – 39.3%^{xiv} compared with 14.5% of other girls this age. Overall, 27.8% of First Nations girls with disabilities are reported as having emotional/behavioural problems compared with 10.5% of girls without disabilities. 22.1% of all First Nations girls who were reported on the RHS as having emotional or behavioural problems are girls with disabilities.

Some 29.2% of all First Nations children with emotional or behavioural difficulties are children with disabilities.

Childhood disability and access to healthcare

Table 3 shows the extent to which parents/guardians encountered barriers to receiving health care for First Nations children with and without disabilities in the twelve months before the RHS was conducted. The sampling variability is fairly high (but within acceptable limits) for First Nations children with disabilities so the figures for these children should be used with caution. The table shows that, generally speaking, First Nations children with disabilities and their parents/guardians are more likely to face various barriers. Lack of service availability and long waiting lists, adequacy and cultural appropriateness of service, difficulties arranging transportation and difficulties accessing traditional care stand out as particular problems for children with disabilities and their parents/guardians. Lack of prior approval for services under NIHB is also a problem, but because sampling variability is high on this question it is difficult to establish how much of a problem.

Even where there are no statistically significant differences in the extent to which children with and without disabilities encounter barriers (e.g., health facility or doctor/nurse not available, affordability of direct services), the lack of access is likely to have a significant impact on a human level as the level and urgency of need for service can be aggravated when a child has one or more disabilities.

^{xi} Some 91.8% of children without disabilities are in excellent or very good health. The number of children in the general population without disabilities and in fair or poor health is so small that the percentage cannot be released.

^{xii} The coefficient of variation is within acceptable limits – 27.7%

^{xiii} The coefficient of variation is again fairly high but acceptable at 19%.

^{xiv} The coefficient of variation is high but within acceptable limits at 26.1%, so the percentage of girls 6–11 years with disabilities and behaviour/emotional difficulties should be used with caution.

Table 3. Percentages of First Nations children with and without disabilities having difficulties accessing health services, by nature of difficulty

	Others	With disability	Sig.	Total
Availability				
Doctor or nurse not available in respondent's area	11.6%	17.8%	E	12.3%
Health facility not available in respondent's area	8.0%	9.3%	E	8.1%
Service was not available in respondent's area	7.3%	19.3%	E *	8.7%
Waiting list too long	21.5%	37.6%	*	23.3%
Cost and eligibility for coverage under public programs				
Not covered by Non-insured Health Benefit	7.9%	13.7%	E	8.6%
Prior approval for services under NIHB was denied	4.9%	–	E	5.9%
Could not afford direct cost of care or service	6.3%	10.9%	E	6.9%
Could not afford transportation costs	8.5%	13.9%	E	9.1%
Could not afford childcare costs	8.8%	13.9%	E	9.4%
Adequacy and appropriateness				
Felt health care provided was inadequate	9.6%	25.5%	E *	11.5%
Felt service was not culturally appropriate	6.3%	16.9%	E *	7.6%
Chose not to see health professional	3.9%	4.1%	E	3.9%
Other				
Unable to arrange transportation	9.4%	17.9%	E *	10.3%
Difficulty getting traditional care	6.2%	13.0%	E *	7.0%

E High sampling variability. Coefficients of variation are within acceptable range (<33.3%) but figures should be used with caution.

– E Sampling variability too high for release of data.

* Statistically significant difference between children with and without disabilities at 95% confidence interval.

Summary of Key Findings

This chapter explored disability and long-term health conditions among First Nations children 0–11 years. The research found that childhood disability is more prevalent among First Nations children than in the general population.

Children with disabilities are in much the same familial living arrangements as other First Nations children and are as likely to be attending school but tend to fare less well, academically. They are about as involved in non-school cultural and physical activities.

The research found no statistically significant differences in the household incomes of children with and without disabilities or in the respective education levels of parents.

The most commonly reported long-term health-related conditions among First Nations children are asthma, allergies and chronic ear infections/ear problems. Less widely reported but having potentially harmful or challenging implications are chronic bronchitis, ADHD, learning disability and FAS/FAE. With the exception of allergies and

perhaps learning disabilities, the levels of treatment for these conditions are low.

It is fairly common for First Nations children with disabilities to have more than one long-term condition. Their general health is poorer than that of their First Nations counterparts without disabilities. A significantly higher proportion have emotional and behavioural difficulties, a problem more pronounced among boys than girls.

First Nations children with disabilities are more likely to face various barriers to accessing health care services.

Recommendations

Noteworthy are what seem to be relatively equal levels of participation by First Nations children in cultural and physical activities, regardless of disability, age or gender. While attention is perhaps needed to ensure that non-school sports programs are accessible to and supportive of the participation of boys and girls with disabilities, communities and community leaders should be recognized for their efforts of inclusiveness and should be encouraged to continue on that path.

The low levels of treatment for potentially serious health conditions such as chronic bronchitis and ear infections are somewhat alarming. Parents/guardians need to be alerted to the potential health risks and about how to manage these. Health care services need to be proactive in detection and treatment efforts.

The significantly poorer general health of First Nations children with disabilities needs attention through research and health promotion initiatives that target not only individual health behaviours of children and their parents but broader social and economic determinants of health as well.

Also needed are measures to ensure that children are not prevented from accessing needed services and facilities due to non-availability, as are measures to ensure that prohibitive direct service costs do not fall to First Nations families who by and large are not wealthy. It is not clear why non-affordable direct service costs are falling to about 1 in 10 families of children with disabilities. Nor is it clear why about 1 in 8 of children with disabilities have difficulties gaining coverage under the Non-Insured Health Benefits (NIHB) of the specific services, medications and equipment that are not covered. The process for securing prior approval for services under the NIHB program may also warrant attention. These are difficulties that children with and without disabilities and their families face.

Measures are needed to ensure the adequacy and cultural appropriateness of health services provided. These measures should involve service design and quality monitoring of parents of First Nations children with disabilities and parents of children with long-term health conditions who may not have disabilities. These children, after all, are among the end-users of the services that should be equitably available, effective and culturally appropriate. Federal, provincial/territorial, and First Nations governments and political leaders have a significant role to play, here, as do other First Nations authorities responsible for health services.

Also requiring attention are the reasons why some of the dental needs of First Nations children with disabilities are going unfulfilled to a greater extent those of other children.

What should be of concern are the low levels of reported intervention to address the needs of children with: learning disabilities; ADHD and FAS/FAE; high levels of behavioural and emotional difficulties among First Nations children with disabilities; their generally lower academic performance and; higher levels of grade retention. Further analysis of the links between the long-term conditions, emotional/behavioural difficulties and difficulties at school are warranted.

Also required are effective, respectful behavioural support services and effective educational strategies and support systems for pupils, teachers and families. These types of resources can assist children with cognitive, emotional and other challenges—and their families and teachers—to find ways of coping and thriving.

If the poorer general health and modest levels of intervention for long-term health-related conditions are not addressed for today's First Nations children, and if the educational and emotional difficulties reported in this chapter are not adequately addressed, the consequences are likely to become more entrenched, complex, difficult to manage and costly in human and financial terms for future generations.

Notes to Chapter 30

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Chapter 31

Injuries

Abstract

Injuries are the leading cause of death in children throughout Canada. The 2002/03 First Nations Regional Longitudinal Health Survey (RHS) results show that First Nation children are more likely than Canadian children in general to report various types of injuries. The most common causes of injury mentioned were falls, sport related and bicycle accidents. Older children, and those who are more physically active, are at increased risk of injury but there are few differences by gender. Nor do children's injuries seem to be related to a variety of family and community characteristics; the sole exception is that rates appear to be higher in children whose parents attended residential schools. It is not clear if this reflects parenting practices, or if residential school attendance is a proxy for some other variable such as geographic location. Since certain types of injuries are more common at specific ages, interventions to reduce childhood injuries need to be carefully targeted. Concerted action by different sectors of the community, ranging from parents and families through to community institutions such as schools, recreation facilities and health centres is likely required.

Introduction

Injury is probably the most under-recognized public health problem facing First Nations today. Although injury rates are lower in childhood than at older ages, they are nonetheless the leading cause of death in children.^{1,2,3} Motor vehicle crashes, drowning and fires are among the most common causes of injury death in children, while other types of injury (such as falls, scalds or accidental poisoning) can require medical attention or hospitalisation. A recent study of children in Alberta showed that 84 % sustained an injury that required medical attention before the age of 10, and 73 % sustained at least two such injuries. The same study found that First Nations children under 10 were 71 % more likely than non-First Nations children to suffer four or more injuries requiring medical attention.⁴ Disfigurement, disability, developmental delay and emotional problems are major consequences of accidental injuries to children. Many of these injuries could be prevented.

Injuries involve a complex interaction of factors. In studies of the general population, childhood injuries have been linked to parental formal education, socioeconomic status and mental health. The larger environment also plays a role. Appreciable improvements in child injury rates have followed the introduction of regulations governing infant clothing, cribs, baby-walkers and car seats. Nevertheless, the number of injuries to First Nations children remains unacceptably high. This chapter presents information on the nature and causes of injuries in First Nations children and on some of the factors linked to injuries.

Interpretation Methods

The RHS asked about three aspects of injury: the nature of the injury, its cause and whether alcohol was involved. A first set of questions asked parents if, in the year prior to the survey, their child had required medical attention for any of a list of injuries such as major cuts, sprains, broken bones or concussions. Each of these questions was answered with “yes” or “no,” so the resulting numbers reflect *how many children experienced* a particular type of injury, rather than how many injuries happened in total. The different types of injury are not mutually exclusive, and some children might have been injured more than once during the year.

A second set of questions asked about the *causes* of injury, such as falls, car crashes, sports, etc. Again, these were yes/no questions.

The third set asked about alcohol involvement with respect to any injury that occurred. Because of the way the questions were set up, some assumptions had to be made when analysing the responses in this third set. Many people refused the alcohol questions. Under-reporting is likely because of the stigma associated with alcohol use, especially if the alcohol-related injury involved a child. In short, the numbers on alcohol involvement should be treated as estimates only.

Results

Types and causes of injuries

All told, 17.5%ⁱ of the children included in the RHS had experienced at least one injury serious enough to need medical attention in the year prior to the survey. Previous research has found that injury rates in Aboriginal children living off-reserve are close to the Canadian average^{5, 6} but the RHS results suggest that the rates are much higher for children living in First Nations communities.

Table 1. Proportion of children injured seriously enough to require medical attention in the year prior to the survey, compared to other populations

First Nations on-reserve (RHS 2002/03)	Aboriginal off-reserve (2000/01)	Canada as a whole (2000/01)
17.5%	12%	10%

Sources: RHS and National Longitudinal Survey of Children and Youth⁷

* Question wording and age groups were identical across these surveys.

The most common types of injuries that First Nations children reported were major cuts, scrapes, or bruises, fractures, and major sprains or strains. The pattern for Canadian children in general is identical.⁸ In other words, First Nation children experience the same types of injuries as others, but at higher rates.

Table 2. Proportion of children who experienced various types of injuries (n=6654)

Nature of injury	% of children
Major cut, scrape, bruises	9.8%
Fracture	4.0%
Major sprain/strain	3.0%
Dental injury	2.5%
Burns/scalds	2.3%
Concussion	0.9%
Dislocation	0.7%

The most frequently mentioned causes of injury were, in order: falls/trips, bicycle accidents and sports injuries. Almost none of these injuries were reported to be alcohol-related.

Injuries and personal characteristics

Some children may be at greater risk of injury because of their age, sex, or everyday activities. It is interesting that although the RHS found noticeable gender differences in injury rates for teenagers and adults, in children there was no statistically significant differenceⁱⁱ. These results contrast

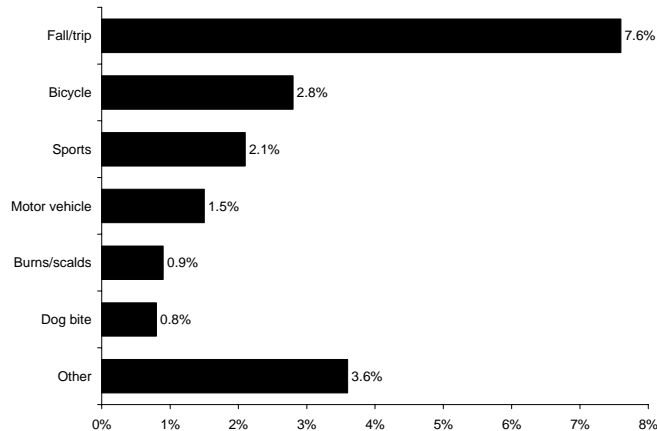
ⁱⁱ To simplify the text, confidence limits are only reported for overall child estimates with a coefficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs.

ⁱ Comparisons between groups reported in this chapter are all significant unless “NS” —not significant— is specified in brackets. In this chapter, estimates are considered significantly different if their confidence intervals do not overlap (95% confidence level).

with some previous studies of Canadian children in general, which have tended to find that boys have higher injury rates.⁹

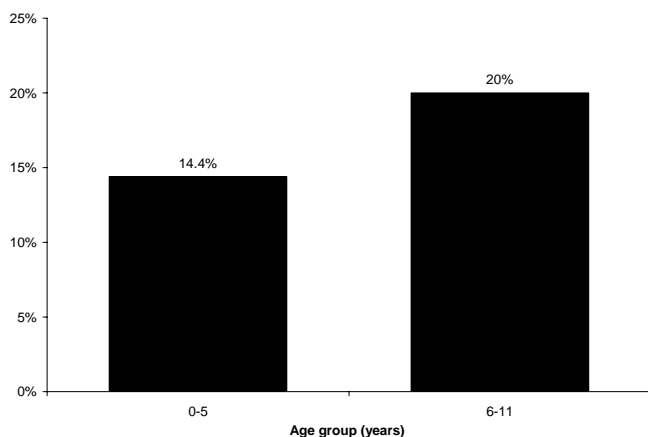
The RHS results do, however, show that injury rates vary by age, with older children being significantly more likely to be injuredⁱⁱⁱ (Figure 2). The sample size does not allow us to look at specific types of childhood injury by age. However, Canada-wide studies suggest that as children grow older, their risk of injuries such as fractures typically increases but the risk of scalds goes down.¹⁰

Figure 1. Proportion of children reporting various causes of injury (n=6657)



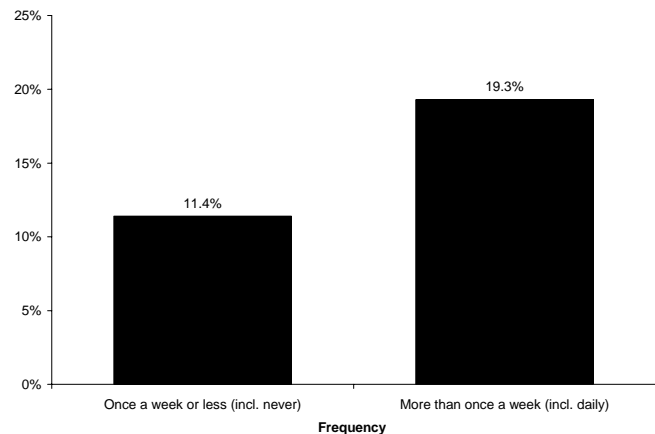
* "Motor vehicle" includes cars, trucks, all-terrain vehicles, snowmobiles, and collisions between motor vehicles and bicycles or pedestrians.

Figure 2. Proportion of children with one or more injuries in the previous year, by age group (n=6657)



Given that both sports and bicycle accidents are among the most frequently mentioned causes of injury for children, it is no surprise to find that injury rates vary with the child's activity level. Children who engage in physical activity more than once a week are significantly more likely to report an injury than children who are active once a week or less (19.3% vs. 11.4%).

Figure 3. Proportion of children injured in past year, by frequency of physical activity (n=6405)



Injuries and family characteristics

Family characteristics such as who the child lives with, household size, household income or parental education might be expected to be related to injury rates, but the RHS results show few differences on these dimensions. There were no statistically significant differences in injury rates according to whether the child lived with his/her biological parents or with other family; no differences according to household income; and none according to how many children (fewer than six vs. six or more) lived in the household. Nor, surprisingly, was there any significant relationship between injury rates and how well the child had gotten along with his/her family in the previous six months.^{iv}

The results with respect to parental education are interesting. On the one hand, there is no significant relationship between either the mother's or father's level of formal education and the child's injury rates. On the other hand, injury rates *do* seem to be related to whether the mother or father attended a residential school. There are several possible explanations for this. First, the residential schools have been accused of raising people with few parenting skills.¹¹ This might be reflected in the home environment and in supervision practices, and hence have an effect on children's injury rates. Alternatively, residential school attendance may be serving as a proxy indicator of something else that affects a child's risk for injury—such as the parent's age, or the family's province of residence (injury rates are known to be higher in certain provinces and territories).^{12, 13}

Injuries and community characteristics

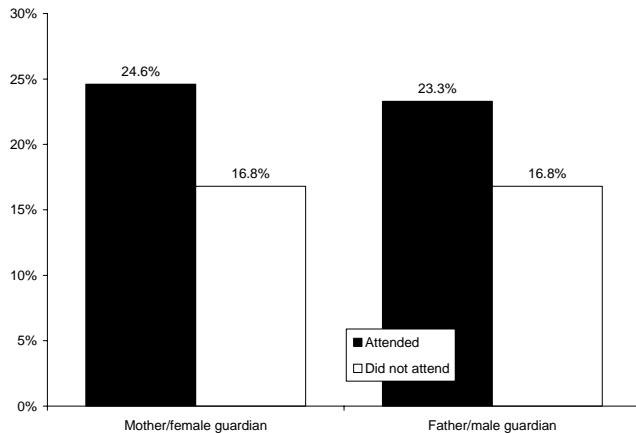
Although there seems to be a relationship between some community characteristics and *adult* injury rates, this relationship is only somewhat apparent for children's injuries. Parents in semi-isolated communities are more likely than those in non-isolated communities to cite

ⁱⁱⁱ The difference between preschoolers and children six years and over is not statistically significant if infants are excluded from the analysis (injury rates in infants being extremely low).

^{iv} These findings may simply reflect the lack of variation in the answers to this question: 93% of all parents said that their child got along well with his/her family. This reduces the question's usefulness as a predictor of other behaviours or events.

children's rates of injuries. Similar to adults in general, children's rates of injuries are not clearly related to either the size of the community or its transfer status.

Figure 4. Proportion of children injured in past year, by whether or not parents attended residential school (n=6268)



Specific causes of injury to children

Falls

Falls were the most frequently reported cause of injury in the RHS: 7.6% of children had had at least one fall that required medical attention during the year. This is not unusual. Across Canada, falls are so common that one in every twelve children under age six needs hospital treatment for a fall.¹⁴ Falls are most common in younger children. At this stage, most falls happen in the home, and involve things like falls from stairs, strollers or furniture such as changing tables, or with baby-walkers.¹⁵ In older children, serious falls tend to involve sports, trees, or playground equipment—especially if the ground below the equipment is hard or uneven.¹⁶ Preventing these injuries usually involves modifying the environment to make it safer (for instance, installing baby gates, or providing a sufficient depth of sand below playground equipment. Protective equipment for sports may also prevent some injuries).

Incidents involving bicycles

Bicycles were the second most commonly reported cause of injury in the RHS, with 2.8% of all children having had a bicycle accident in the preceding year and another 1.1% having experienced some type of collision between a bicycle and a motor vehicle. In fact, the bulk of the motor vehicle accidents for children involved bicycle-vehicle collisions. Action to prevent such injuries can occur on several levels. Helmets help appreciably in preventing serious injuries and deaths. They reduce the risk of head injury by 85%. In Australia, mandatory helmet laws have reduced deaths by 59%.¹⁷ However, when bicycles collide with vehicles, cyclists typically injure more than just their heads. For this

reason, bicycle paths and other measures to reduce the probability of bicycles and vehicles colliding are useful.¹⁸

Motor vehicle crashes

As noted above, most children's, motor vehicle injuries involve collisions between vehicles and bicycles. Few children were reported to have been injured as passengers in motor vehicles; most of the remaining incidents involve collisions between vehicles and pedestrians. Studies elsewhere in the world have identified some measures that help to reduce these collisions between pedestrians and vehicles. Sidewalks help, and one-way streets apparently reduce pedestrian-vehicle collisions by 20-50%.¹⁹ Lowering and enforcing speed limits also helps: in Holland, the introduction of traffic-calming measures reduced injuries by 25%.²⁰ Reflective clothing makes pedestrians visible at 213 metres, as compared to just 45m for a person wearing dark clothing.²¹

Conclusions

Like previous studies, the RHS results show that children in First Nation communities experience injuries at higher rates than average. Preventing such injuries may require a combination of education (of the children themselves, if old enough, or of parents, families, and the larger community), equipment modifications and making the larger environment safer.

There is now considerable evidence of the effectiveness of legislation and public health education in preventing children's injuries. For example, the Flammability Fabrics Act of 1967 substantially reduced the number of burns in young children by reducing the flammability of children's sleepwear. Smoke detectors have reduced injuries and lowering the temperature of hot water tanks has helped to reduce the number of scalds. Similarly, the introduction of child-resistant packaging for chemicals and drugs has helped to reduce the number of accidental poisonings in children.

Nevertheless, much remains to be done to reduce First Nation's children's injury rates. When designing prevention programs, it is important to keep in mind that certain injuries cluster around certain ages, so interventions need to be appropriately targeted. For instance, scalds and accidental poisonings are most common in toddlers, while fractures are common in older children. Babies and young children can fall from stairs and household furniture while older children are more likely to fall from playground equipment or during sports. Young children are most likely to be injured in the home, making their immediate families and home environment the best targets for prevention efforts; while older children are more likely to be injured outside the home. Action to prevent children's injuries would logically involve many different sectors of the community including parents, extended families, Elders, a variety of community services

such as schools, recreation centres) police and traffic services, and health centres.

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Chapter 32

Dental Treatment Needs and Use of Dental Services

Abstract

This chapter describes the treatment needs and dental care utilization patterns of the First Nations population (aged 0–11 years) as estimated from the 2002/03 First Nations Regional Longitudinal Health Survey (RHS). Data were gathered via proxy interviews with a parent or guardian. Overall, 69.1% of children had dental care in the past year. Dental care in the past 12 months was associated with child's age and maternal parents' education. This cohort reported needing dental fillings generally starting at age one. The proportion of preschool children requiring fillings was found to be the same as that of school aged children. Twenty-nine percent of 3–5 year-olds were affected by Baby Bottle Tooth Decay (BBTD) and 67% of those were treated for the disease. BBTD experience was related to dietary factors and the use of medications. The likelihood of having BBTD declined with the parents' level of education and household income. BBTD also was associated with isolation status of the community. The overall prevalence of dental trauma was 2.5%. Despite geographical barriers in the north, utilization of dental care services by First Nations children is high. However, the early onset of oral disease and the increasing levels of treatment needs for children call for a greater emphasis on effective prevention and oral health promotion in First Nations communities.

Note: Due to spacing issues, all tables may be found at the end of the chapter.

Introduction

The burden of tooth decay in First Nations children

At present, there are deep and continuing disparities between First Nations and non-First Nations Canadians both in their general health and in their oral health.¹⁻⁷ The reasons for these disparities are complex and relate to a number of different factors, influenced by socio-economic conditions in First Nations communities and compounded further by geographical barriers that impede access to health and dental services in remote northern communities. Data from the 2001 Census showed that the First Nations population is growing at a rate of 3% per year; more than double the Canadian rate.⁸ The First Nations population is also younger, on average, than the rest of the Canadian population. Compared to the general population, the proportion of First Nations children under five years of age is 70% greater.⁹

Among First Nations children, tooth decay is one of the most prevalent chronic childhood diseases. The prevalence of dental caries in school-aged First Nations children living on-reserve ranged from 30% to 98% in studies in the 1970s¹⁰ and 1980s^{11, 12} and remained at roughly the same levels throughout the 1990s (range: 60-96%).¹³⁻¹⁶ However, over the same period of time we saw a dramatic increase in the prevalence and severity of tooth decay in the primary dentition.¹⁷⁻³² Decay affecting the deciduous teeth can begin as soon as the infant's teeth erupt. This can progress more rapidly and end up being more destructive than caries in the permanent teeth.³³ The term often used to describe this devastating form of caries is Baby Bottle Tooth Decay (BBTD), but the term most accepted by health professionals for the disease is Early Childhood Caries (ECC).³⁴ BBTD, or ECC, affects a disproportionately higher number of First Nations, Inuit and Métis children than non-Aboriginal children under five years of age in Canada and is the number one cause of health disparities between Native and non-Native children. Prior to this study, there have been no national figures on the extent of caries in the primary dentition for children under the age of five. Local studies have revealed that less than 11% of children entering kindergarten in North York,³⁵ Ontario, have visible, untreated decay, while approximately 78%³⁶ to 87.5%³⁷ of Canadian Aboriginal children have experienced tooth decay by 60 months of age. According to studies completed after the year 2000 in First Nations communities, the severity of disease in the primary dentition, as expressed by the mean number of decayed, missing or filled teeth per person (DMFT index), varies from 10 to 13.7 for 3- to 5-year-old children in Northwestern Ontario³⁸ and Northern Manitoba,³⁹ but the DMFT index is lower in Southern Ontario First

Nations communities (3.5 for 3 year olds and 4.8 for 5 year olds).⁴⁰

Despite its prevalence, BBTD is a preventable disease. Traditionally, BBTD's etiology has been largely associated with feeding practices of infants and toddlers and is often referred to as nursing bottle caries. This name highlights the major dietary cause of the disease: the prolonged *ad lib* use of the bottle with sugar-containing liquids, especially at night or naptime.⁴¹⁻⁴⁴ Although there is little doubt that the addition of sucrose to the contents of the nursing bottle heavily predisposes children to BBTD, the first United States (U.S.) Surgeon General's report on oral health notes that sex, age, income, and race or ethnicity are also important determinants of oral health status.⁴⁵

Recent studies on the etiology of BBTD use an infectious disease model to explain the association between the primary caregivers' oral health status and the oral health status of their young children.⁴⁶ Opportunities for vertical oral transmission of bacteria from mother to child occur most often during breastfeeding contact or by the sharing of spoons and pacifiers. However, evidence from the literature does not support a strong and consistent relationship between prolonged breastfeeding⁴⁷ or pacifier use⁴⁸ and the development of BBTD. Among First Nations populations, the strongest predictors for BBTD remain parenting practices related to prolonged use of the bottle or sippy cups with sugar-containing drinks and a high frequency of sugary snacks per day.^{49,50,51} A study in First Nations reserves in the Sioux Lookout zone in Northwestern Ontario found that bottles with condensed milk or sugary drinks are being used for soothing throughout the day and night and not just for feeding.⁵² The study also found that the caregiver's dental health knowledge did not impact on the child's BBTD experience, but a caregiver's dentate status (i.e., number of natural teeth present), regular use of dental services and the number of children in the home were important determinants of a child's oral health. In addition, children's good oral hygiene practice and a preventive dental visit on, or before, the child's first birthday were related to a decreased risk for BBTD.⁵³

Child dental care in remote communities

Treating BBTD can be expensive if the disease is not identified and managed early. Preventive resin restorations ('tooth-coloured' fillings) or amalgams ('silver' fillings) have a high failure rate amongst this age cohort, so the treatment regime of choice remains a more aggressive one involving the placement of stainless steel crowns and teeth extractions under general anesthesia (GA) or conscious sedation. Since many of the First Nations children who suffer from the disease reside in remote communities, they must either be flown to a centrally located hospital or receive care from dentists who travel to the communities to carry out the procedure, sometimes using oral sedation to make the treatment easier on their young patients. This means that it is

generally more cost-effective to use GA instead of nitrous oxide or oral sedation, particularly if the child needs more than three conscious sedation appointments to complete the treatment.⁵⁴ However, treating children in hospital under GA adds substantially to the cost of the procedure and does not guarantee a reduction in the child's susceptibility to future caries.^{55, 56}

A retrospective analysis of dental records of 884 First Nations children, aged one to six years, who were treated for BBTD between 1980 and 1988 in the province of Manitoba, estimated the mean cost to Health Canada for GA dental treatment to be \$3,067 CDN per child.⁵⁷ Approximately two-thirds of this cost was attributed to hospital services, travel and lodging, while only one-third were dental costs. In the U.S., when all treatment factors, including operating room (OR) and transportation costs were considered, the potential cost of BBTD treatment per non-Native, and Native, Alaskan child enrolled in Head Start programs was \$2,003–\$3,083 U.S.,⁵⁸ and was \$2,141.45 U.S. per Choctaw Native-American Head Start child in Mississippi,⁵⁹ if GA was used (OR and dental costs only).

It has now been nearly 30 years since dental delivery services were first introduced into remote First Nations communities following the creation of a contractual partnership between Health Canada and the Faculty of Dentistry at the University of Toronto, together they developed a National School of Dental Therapists in Fort Smith, N.W.T., whose graduates went on to serve in remote locations.⁶⁰ In 1983 the school at Fort Smith was moved to Prince Albert, Saskatchewan. The program is now administered by the Saskatchewan Indian Federated College (SIFC) in conjunction with the University of Saskatchewan's College of Dentistry. The NSDT was designed to educate dental therapy students in the provision of basic oral health care services, including fillings, extractions, preventive care and oral health promotion. The dental therapists are jointly employed by the federal government and the provincial governments to provide services in rural and remote communities. At present, dental therapists are only licensed in Saskatchewan, the Northwest Territories, Nunavut and some remote parts of Northern British Columbia. Access to dental practitioners and dental hygienists and therapists is provided under the Non-Insured Health Benefits Program of the Medical Services Branch of Health Canada. The Non-Insured Health Benefits (NIHB) Program provides approximately 749,825 registered Indians (and recognized Inuit and Innu) in Canada with a range of health benefits not included in provincially/territorially administered insured health care programs.⁶¹ Of the total NIHB expenditures in 2003/04 (\$736.9 million), dental costs totalled \$134.5 million or 18.3%.⁶² Twenty-nine percent of all dental claimants were children under 15 years of age and 8% were four years and younger.

Links between child's oral health, general health and quality of life

The consequences of BBTD are a significant problem not only in monetary terms to parents and federal or provincial agencies paying for the care, but in risks to the health and well-being of the child with the disease. Medical reviews and xylitol (a sucrose substitute) clinical trials suggest that BBTD may be linked to increased episodes of infectious diseases, especially recurrent pneumonia, tonsillitis and otitis media.^{63, 64} Low birth weight and asthma have also been associated with an increased risk for BBTD.⁶⁵⁻⁶⁷ More recently, childhood obesity has been linked with high dental caries rates.⁶⁸ Obesity is linked to a wide range of co-morbidities including Type II diabetes, which is prevalent among Aboriginal adults and children.^{69,70} Overweight or obese individuals are known to have poor nutrition; in particular they consume excessive amounts of sugar. Because diet has a major influence on dental caries, it is important to ascertain what portion of the First Nations children population are at risk for obesity, and what proportion is at risk for increased levels of dental caries. Confirming these associations would have important implications for preventive efforts aimed at improving the oral health of young First Nations children.

The range of adverse outcomes that can result from BBTD suggests that this condition and related treatment are also likely to have an impact on the overall quality of life of those suffering from the disease. Children suffering from BBTD endure episodes of recurring mouth pain, problems with chewing and eating as well as sleepless nights. Along with low self-esteem issues (because of the appearance of their mouth), it is factors such as these that can negatively affect childhood development. All too often extractions of infected teeth are done on First Nations children as young as 12 months of age as a result of dental abscesses. As these children gain their full complement of deciduous teeth, their dental problems become so severe that full mouth rehabilitation, including restorations and extractions, must be performed under general anesthesia or deep sedation because such young children lack the ability to cope with the procedures. Such procedures do not prevent the recurrence of the disease but act only as a "stop-gap" measure. At the same time, the psychological stress of undergoing such treatments can be troubling for the child and for the families that share this burden. However, studies in homogeneous, non-Native populations have found statistically significant data connects BBTD with retardation in growth. Following successful treatment of BBTD, a slight increase in the incremental weight of children occurs.⁷¹⁻⁷³ Despite the risk for mortality, dental care under general anesthesia for preschool children has a high degree of acceptance by parents and is perceived to have a positive impact on their child.⁷⁴⁻⁷⁷ Pain relief is the greatest predictor of parents' perception that their child's quality of life was improved following treatment.⁷⁸

Dental injuries: An emerging dental problem

In recent years, the importance of childhood injuries has received recognition as a leading cause of hospitalization and death among Canadian children. To address the problem, in 1997 Health Canada created a comprehensive database on the incidence and circumstances of these injuries through the Laboratory Centre for Disease Control, Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP).⁷⁹ These data are being used to develop intervention programs and to evaluate the results of such programs because it is estimated that 90% of injuries among children are preventable. Data for the Canadian population of children and youth up to 19 years of age reveal that adolescents sustained more sports-related injuries than younger children. Younger children were injured much more frequently in their homes than older children and adolescents. Most importantly, head and neck injuries, including the oral-facial region and intraoral sites, accounted for two-thirds of all injuries.⁸⁰

Epidemiologic data from around the world indicate that in 5-year-old children, approximately one-third have suffered a traumatic dental injury involving primary teeth, most often tooth luxation (e.g. loose teeth).^{81,82} Traumatic dental injuries in the primary dentition peak between the ages of two and three, when motor coordination is developing and children begin to move about more easily on their own. In the permanent dentition, incidence is at its highest for boys ages 9 and 10 years. This occurs when they are actively engaged in vigorous play and sporting activities. Boys tend to experience more dental trauma in the permanent dentition than girls, however, there does not appear to be a difference between sexes in the primary dentition.⁸³

Analysis and interpretation of data

The analysis and process used to interpret the data were based on the RHS Cultural Framework.⁸⁴ This framework encompasses “the total health of the total person within the total environment.”⁸⁵ Thus dental health and care data are presented in relationship to the First Nations vision of their own health. Three areas of that vision stand out in particular; the first being the desire for individuals in these communities to be free of disease, the second being the ability of the community to provide all its members with health services, and the third being the importance of oral health as an integral component of overall health and well-being. This holistic definition of health provided the framework for the selection of variables used in the analysis. Specifically, the dependent variables were derived from questions that asked the child’s last instance of obtaining dental care, what type of treatment was needed, and the child’s current or previous experience with Baby Bottle Tooth Decay (BBTD). If the child had BBTD, the interviewee was asked whether the child had received dental treatment to deal with the disease. A physical injury, including dental injury, which occurred in the past 12 months and required medical attention, was also one of the dependent variables in the analysis.

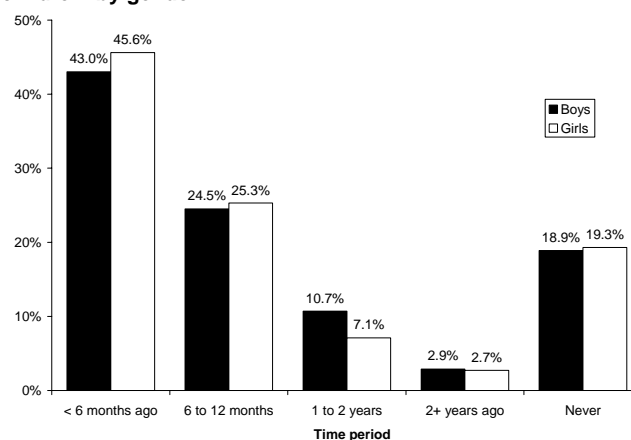
The survey also included a number of other questions that provided background information about the respondent. Questions addressed the respondent’s household, the community in which the child lived, the role of traditional culture in the life of the child, the child’s general health and incidence of injuries, diet and nutrition, child care arrangements, and education. The selection of independent variables was drawn from these broader areas to conform with the First Nations’ understanding of “total health” whereby each area of health is related to other areas of health and to the “total” environment.⁸⁶

Results

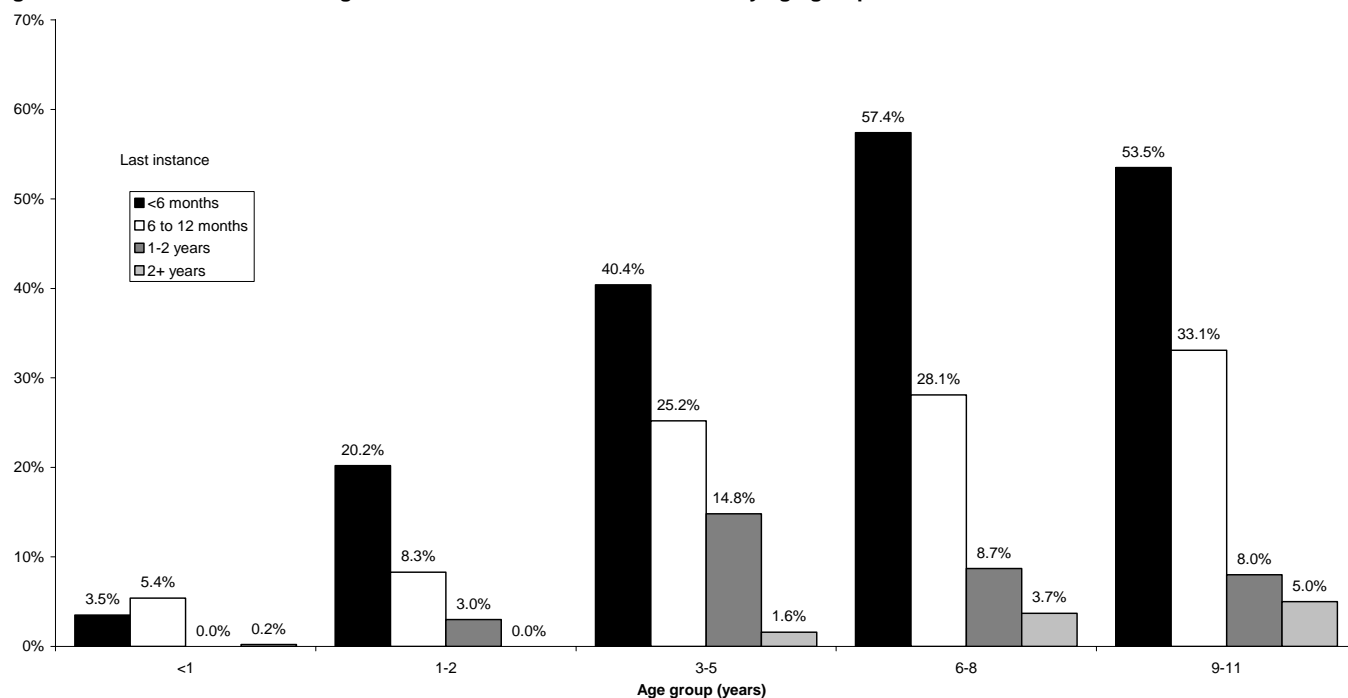
Dental care utilization

“Reporting to have seen a dental health care provider in the past year” is the traditional indicator used to measure access to professional dental services in specific communities and/or among particular cohorts. In the children’s 2002/03 RHS, the parent or guardian was asked about the last time the child had any dental care. Response options ranged from “less than 6 months ago,” “between 6 months and 1 year ago,” “between 1 and 2 years ago,” “more than 2 years ago,” to “never.” The corresponding population-weighted responses were 44.2%, 24.9%, 9.0%, 2.8% and 19.1%.¹ These results indicate that 69.1% of First Nations children received some form of dental care in the past year, with no apparent differences between the sexes (Figure 1). However, when the results for the same question are analyzed by age group, the emerging pattern shows that school age children are more likely to have received dental care in the past year, followed by preschool age children. Almost no dental care for infants and toddlers was shown, even though they are a part of the cohort most at high risk for BBTD (Figure 2).

Figure 1. Last instance of obtaining dental care for First Nations children by gender



¹ To simplify the text, confidence limits are only reported for overall adult estimates with a co-efficient of variation of greater than 33.3%. A statistical appendix including confidence intervals for all reported figures is available at www.naho.ca/fnc/rhs

Figure 2. Last instance of obtaining dental care for First Nations children by age group

In Table 1, the relationships between dental care in the past year and selected family and community characteristics are explored, by age group.* The mother's level of education, which is recognized as a strong determinant of the use of health care services, played a significant role in whether the child received dental care in the past year. If the category "graduate degree" is not considered (the proportion of First Nations adults who completed university degrees is 5.0% compared with 16.8% for Canadians),⁸⁶ there is a significantly greater proportion of children that had dental care in the past year as a function of the level of maternal education for those children ages 9 to 11 years. In other words, the more educated the mother, the more likely a child of that age to have seen a dental provider in the past year.

Contrary to expectations, dental care for these age cohorts did not vary by household income (Table 1). Generally, people in lower income households are less likely than those in high income households to use dental services, especially for preventive reasons.⁸⁸ However, due to the fact that 90-100% of dental services for children are reimbursed to dentists by Health Canada's First Nations and Inuit Health Branch and that federal funding for child health care programs remains a high priority, families in the lower income brackets tended to use these services as often as those in higher incomes.

There is little difference between preschool and school children living in small, medium or large size communities with regard to dental care in the previous year (Table 1). This

may be partly explained by the child oral health initiatives sponsored by Health Canada that increased access to care in many communities. Nonetheless, the programs have not overcome the persistent problem of reaching the most remote First Nations communities. Similarly, a community's health transfer status did not differentially affect dental care utilization for these age groups (Table 1). This finding suggests that the communities engaged in the health transfer process already had a well-developed health care system (including dental care) compared with those that were not transferred.⁸⁹

Dental treatment needs

A total of 6,286 responses were available for the analyses of dental treatment needs. The most frequently reported type of dental treatment children required was maintenance, i.e., teeth cleaning and check-ups (42.7%). This was followed by dental fillings or crowns (26.9%). Tooth extraction(s) was reported by 7.0% of respondents, fluoride treatment by 12.4% and orthodontic treatment by 5.2%. This is in accordance with the expected low level of tooth loss and gum disease at this age. Urgent dental care (e.g. due to acute dental pain) was reported 2.0% of the population.

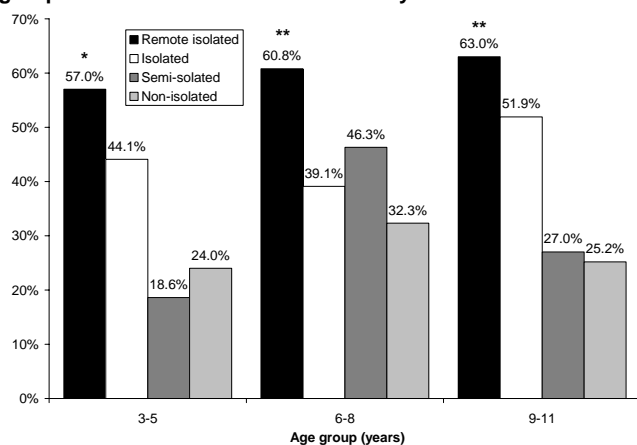
When it comes to the need for different types of dental treatment by age and sex groups, older children generally have higher dental treatment needs than younger children, while there was no difference between boys and girls (Table 2). It should be noted that aside from orthodontic treatment, which is normally initiated at 11 or 12 years of age, similar numbers of three to five year olds require dental fillings or

*

extractions. This finding reflects the high incidence rates of BBTD in First Nations preschool children.

Figure 3 shows that the need for dental fillings by school aged children is directly related to the degree of community isolation. Remote or isolated communities have found it difficult to attract and keep dentists who might be able to provide restorative care. The costs of delivering services, either by flying children to tertiary health care centres, or sending teams of dentists and dental hygienists or therapists out to these communities have proven expensive and a burden on the health care system that does not always succeed in meeting the demands of those in need.⁹⁰

Figure 3. Need for dental fillings in First Nations children by age group and isolation status of community



Chi-squared test; *p=0.019, **p<0.001

Baby bottle tooth decay

This section presents results from the questions on BBTD, also referred to as early childhood caries (ECC). Of the 2,837 children five years and under in the study, 11.9% of children less than three years had BBTD. Just over one-fourth (29.4%) of the 3 to 5 year-old children for whom data were collected had been affected by BBTD (Table 3).

Despite its prevalence, BBTD can be prevented through good oral hygiene practices and a well-balanced, nutritious diet. Not surprisingly, a strong association was found between consumption frequencies of various foods with low nutritional value and a high sugar content and BBTD experience among three-five year olds. Table 3 presents the results for frequency of consumption of soft drinks, but data analyses also revealed that children who more frequently ate fast food, French fries, potato chips, pretzels, etc., were also more likely to have been affected by BBTD. (Table 3).

With respect to caregivers' characteristics as risk factors for BBTD, there is some variation with low parental level of education and household income with the disease or its treatment.

A non-significant trend was also found between a smoke-free home and lower incidence of BBTD in children (Table 3). Environmental tobacco smoke (ETS) has been associated with a number of negative health outcomes for exposed children. Most recently, ETS was found to be associated with an increased risk of caries among children.^{91, 92}

In looking at community characteristics and their effects on caries in children, there were significant differences in the proportion of children affected by BBTD between isolated and non-isolated communities and between children in communities of multi-community health transfer agreements and community health agreements (Table 3).

Table 4 summarizes the results for the comparisons between children with BBTD and those without BBTD, separate for children under two years of age and those aged three to five. Compared to children without BBTD, children with BBTD spent, on average, less time in childcare (true for children under two years only). Crowding remains a recognized problem in First Nations communities. One measure of crowding is based on dividing the number of people in the household by the number of rooms.⁹³ When the ratio exceeds one person per room, the home is considered crowded. Crowding in the home can also lead to cross-infection and family tensions that prompt parents to resort to coping mechanisms, such as the use of the bottle as a pacifier (with sugary liquids), that in turn result in a higher incidence of BBTD.⁹⁴

Dental injuries

Traumatic dental injuries, although not as common as dental caries in this child population, showed an overall prevalence of 2.5%.

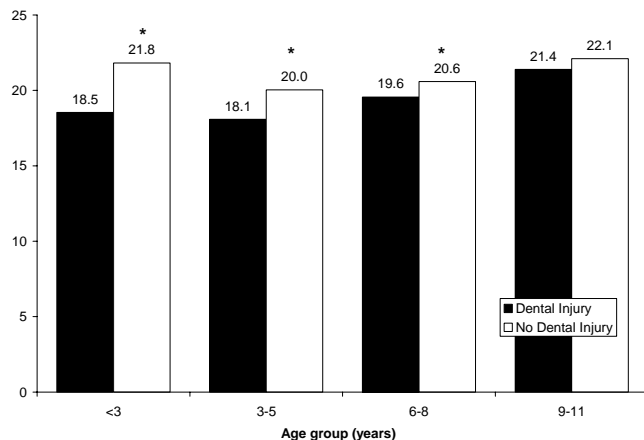
Among the many causes of dental injuries, violence, traffic accidents and sporting activities have contributed to the excess incidence of dental trauma in boys.⁹⁵ As evidenced in Table 5, falling or tripping were found to be associated with dental injury. Figure 4 reveals that, on average, children with a higher Body Mass Index (BMI) score were less likely to have had dental injury that required the attention of a health care professional in the past 12 months; however, this was only the case for children less than three years old.

Family violence against children and youth has been found to be associated with dental trauma, as 37.5% to 66.2% of all cases of child abuse involved trauma to the head, face, mouth, or neck.^{96, 97}

In young children, the majority of unintentional injuries to the primary dentition occur at home. A significant finding was that the number of hours per week the child spends in childcare was related to dental injuries, but this is only apparent for children under three (Fig. 5). When childcare was needed while the parents were at work or studying, the most frequently reported childcare arrangement was care in someone else's home by a relative, followed by a day care

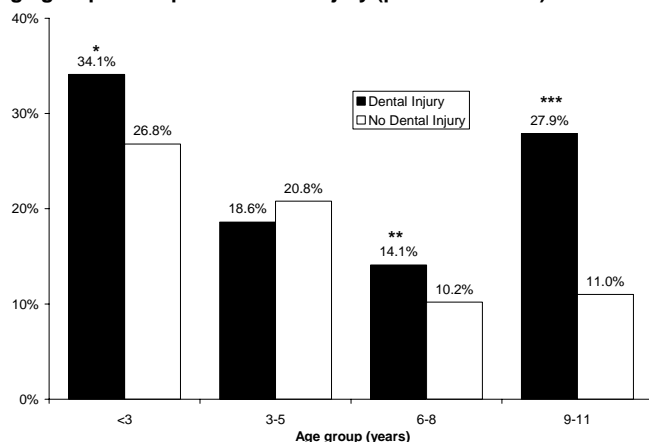
centre, and care in child's home by a relative (other than brother or sister).

Figure 4. Mean body mass index scores by age group and reported dental injury (past 12 months)



*T-tests, significance level set at $p \leq 0.01$

Figure 5. Mean number of hours per week spent in childcare by age group and reported dental injury (past 12 months)



Chi-squared tests, * $p=0.062$, ** $p<0.05$, *** $p<0.01$

Conclusions and Recommendations

Despite the limitations of self-reported data (proxy interviews with a parent/guardian), this is the second national health survey conducted entirely by and for First Nations peoples living on-reserve, and the first national health survey to include dental care and health data for children younger than six years of age. Of the 6,657 children 0 to 11 years of age representing 52 First Nations sub-regions of the country, over two-thirds (69%) received dental care in the past year. Dental care in the past 12 months was associated with child's age and maternal parent's education. Unfortunately, the high utilization rate of dental care services by this cohort of First Nations children did not reflect fewer treatment needs. About

one-third (26.9%) of the children reported needing dental fillings and nearly 43% reported the need for dental check-ups or teeth cleaning. This cohort required dental fillings as early as age one and the proportion of preschool children (age three-five years) requiring fillings was found to be the same as that of school aged children. Twenty-nine percent of three-five year-olds were affected by BBTB but approximately 33% of those affected remained untreated.

A greater emphasis on effective early preventive care and oral health promotion for First Nations children is recommended. Rather than simply treating illnesses, community-based initiatives, which address some of the determinants of poor oral health for First Nations peoples may help to combat problems before they arise. Initiatives to teach prenatal women, new mothers, grandparents or other relatives who take care of the children to provide good oral hygiene care for newborns have resulted in reductions in caries experience among these children.⁹⁸ Programs directed at school children have produced similar positive results. Along these same lines, initiatives to raise the awareness of the risks of oral-facial injuries among young children and the creation of safe environments at childcare and sports facilities may also help to reduce the number of children who yearly suffer from dental trauma. Consistent with findings based on data from cycle 1 of the Canadian National Longitudinal Survey of Children and Youth (NLSCY) collected in 1995 for children aged 0–11 years, boys experience more physical injuries than girls. Falls are among the most common sources of maternally reported injuries followed by environmental hazards for young children and sports injuries for school aged children.⁹⁹

Meeting the restorative treatment needs of First Nations children is another challenge that must be addressed. To overcome this challenge, the current supply and distribution of health care providers will have to be altered. In the last decade, the supply of dentists to remote regions of the country has decreased or remained the same, putting added pressures on those seeking the services of licensed dentists. While communities in remote areas cry out for help, the dental hygienists and therapists remain limited in the kinds of treatment they can render independent of a dentist. Approximately 2,000 dental therapists practice in Canada; most work in Native communities, but a national shortage of dental therapists in Canada is slowing efforts to fight the problem of tooth decay in remote areas. Legislation in Alaska is set to allow dental therapists to treat people with remote dentist supervision. These "Dental Health Aide Therapists" will be required to have two years of full-time training at a dental school and will perform oral exams, cleanings/scaling, fluoride treatments, sealants, x-rays, fillings, stainless steel crowns and extractions.¹⁰⁰ A similar program in Canada would benefit First Nations communities by increasing both the number of frontline health care workers and the number of children able to access preventive and restorative care.

Nonetheless, disparities in oral health status cannot be reduced exclusively by providing universal access to restorative care.^{101, 102} There is convincing evidence in the literature that unhealthy behaviours that begin very early in life can contribute to the development of high levels of dental caries in childhood.¹⁰³ The earliest opportunity to prevent dental decay occurs during prenatal counselling about diet, oral hygiene practices, appropriate uses of fluorides, and educating parents about the hazards of transmission of bacteria from parent to child. Unfortunately, many parents/caregivers underestimate the importance of baby teeth and few see the need to take their children to the dentist in the first years of life. A much larger proportion of children do, however, go to the doctor for medical care or “well-baby” check ups. First Nations communities provide pediatric care and immunization clinics on a regular basis and these health care providers could help to identify children with BBTD. Dental-medical partnerships in which oral health screening and disease prevention are carried out by physicians, who then refer cases to dentists for treatment, could address some of the dental problems of First Nations children before they become too severe.^{104,105} For any combination of these recommendations to be successful in establishing good oral health and overall well-being of First Nations children, First Nations communities must be full partners in setting dental health care priorities and designing and implementing community-based intervention programs that are tailored to their needs, responsive to their concerns and grounded in their cultural and community values.

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Table 1: Proportion of First Nations Children Who Had Dental Care in the Past Year by Age Group, Selected Household and Community Characteristics, and Respondent's Rated Importance of Traditional Cultural Events in the Child's Life.

CHARACTERISTICS	Dental Care in the Past Year by Age Group							
	0 to 2 yrs		3 to 5 yrs		6 to 8 yrs		9 to 11 yrs	
	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %
Total	1,188	24.9	1,571	66.1	1,703	85.6	1,806	86.6
Household characteristics								
Mother's education								
Did not graduate from high school	605	26.5	763	62.0	761	87.8	831	82.9
High school diploma	278	21.4 (NS)	358	64.4 (NS)	410	78.3 (NS)	380	79.5 (NS)
Some postsecondary	235	24.6 (NS)	349	74.6 (NS)	453	89.0 (NS)	484	93.3
Bachelor's degree	68	28.3 (NS)	96	80.8 (NS)	75	91.0 (NS)	107	94.7
Graduate degree	2	-	5	-	4	-	4	-
Father's education								
Did not graduate from high school	615	24.1	750	67.1	796	86.5	868	86.0
High school diploma	205	20.8 (NS)	278	55.9 (NS)	275	77.7 (NS)	298	88.3 (NS)
Some postsecondary	199	33.7 (NS)	307	63.9 (NS)	340	96.2 (NS)	343	88.9 (NS)
Bachelor's degree	26	-	43	86.7 (NS)	43	92.3 (NS)	49	95.4 (NS)
Graduate degree	3	-	7	-	5	-	4	-
Household income								
Under \$10,000***	181	21.5	219	72.0	187	79.0	210	82.6
\$10,000 to \$14,999	104	-	160	63.4 (NS)	195	88.0 (NS)	212	90.3 (NS)
\$15,000 to \$19,999	93	-	118	64.9 (NS)	139	92.5 (NS)	145	90.8 (NS)
\$20,000 to \$29,999	160	29.5 (NS)	215	71.9 (NS)	272	79.5 (NS)	275	87.1 (NS)
\$30,000 to \$49,999	152	23.8 (NS)	240	66.8 (NS)	270	78.4 (NS)	315	87.5 (NS)
\$50,000 to \$79,999	89	-	136	65.3 (NS)	158	89.6 (NS)	181	92.7 (NS)
\$80,000 and over	22	-	28	-	42	96.5 (NS)	37	86.0 (NS)
Community characteristics								
Remoteness factor****								
Non-isolated	893	26.3	1,157	68.5	1,262	88.9	1,400	87.9
Remote	44	27.0 (NS)	62	58.3 (NS)	79	73.7 (NS)	87	84.4 (NS)
Isolated	121	16.5 (NS)	150	60.2 (NS)	160	78.9 (NS)	155	80.7 (NS)
Semi-isolated	80	25.6 (NS)	140	55.1 (NS)	138	77.9 (NS)	144	79.0 (NS)

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CHARACTERISTICS	Dental Care in the Past Year by Age Group							
	0 to 2 yrs		3 to 5 yrs		6 to 8 yrs		9 to 11 yrs	
	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %
Community characteristics (cont'd)								
Health Transfer Status*****								
Not transferred	662	22.7	915	64.5	984	89.0	1,058	86.9
Community transferred	359	31.7 (NS)	428	71.1 (NS)	474	81.2 (NS)	510	87.3 (NS)
Part of multi-community transfer	195	19.2 (NS)	278	60.6 (NS)	289	82.0 (NS)	329	83.9 (NS)
Community size*****								
Small (<300)	122	-	183	72.1	209	79.7	242	83.2
Medium (300-1,499)	670	30.0 (NS)	948	65.6 (NS)	1,000	88.9 (NS)	1,159	86.5 (NS)
Large (1,500+)	428	18.8 (NS)	493	64.2 (NS)	540	82.2 (NS)	499	87.8 (NS)
Traditional Culture								
Rated importance of traditional culture in the child's life								
Very important	506	32.0	725	62.9	799	90.6	951	88.4
Somewhat important	420	25.3 (NS)	576	68.3 (NS)	652	86.3 (NS)	661	86.7 (NS)
Not very important	124	23.7 (NS)	162	65.6 (NS)	144	63.2 (NS)	164	88.7 (NS)
Not important	72	-	95	67.1 (NS)	94	85.6 (NS)	65	77.9 (NS)

***Includes no income and income loss. Total household income from all sources, for all household members, including the respondent, before deductions, for the year ending December 31, 2001.

****The remoteness factor (isolation status) of the respondent's community of residence according to 2002 data provided by First Nations and Inuit Health Branch (FNIHB, Health Canada). Remote isolated = no scheduled flights; isolated = flights, good telephone, no road access; semi-isolated = road access greater than 90 km to physician services; non-isolated = road access, less than 90 km from physician services.

*****Health Transfer Status of the community in which the respondent resides. Data are based on August 2002 data from FNIHB, Health Canada. Primary, secondary and tertiary level services were combined. Not transferred = respondent's community of residence is not part of a health transfer agreement; community transfer = respondent's community of residence has responsibility, through "Health Transfer" for primary and/or secondary and/or tertiary services; multi-community = respondent's community of residence is part of a multi-community health services transfer agreement for primary and/or secondary and/or tertiary services.

*****The size of the on-reserve population in the respondent's community of residence based on adjusted 2002 Indian Register counts for the population living on-reserve or on crown land associated with the band. Counts were adjusted for under-reporting and late reporting of births and deaths.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 2: Reported Types of Dental Treatment Needs of First Nations Children by Age Group and Sex.

TYPE OF DENTAL TREATMENT	Age Group									
	0 to 11 months		1 to 2 years		3 to 5 years		6 to 8 years		9 to 11 years	
	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %	Total <i>n</i>	Weighted %
<u>Cavities filled or other restorative work</u> (e.g. crowns, bridge)										
Boys	116	-	438	11.0	791	27.9	870	31.9	922	29.6
Girls	134	-	432	8.1 (NS)	779	29.0	850	39.4	954	29.5
Both sexes	250	-	870	9.5	1,570	(NS) 28.4	1,720	(NS) 35.4	1,876	(NS) 29.6
<u>Maintenance</u> (e.g. check-ups or teeth cleaning)										
Boys	116	-	438	32.2	791	47.1	870	42.6	922	51.2
Girls	134	-	432	28.7	779	44.3	850	40.7	954	53.0
Both sexes	250	-	870	(NS) 30.4	1,570	(NS) 45.9	1,720	(NS) 41.7	1,876	(NS) 52.1
<u>Extractions</u> ('taking teeth out')										
Boys	116	-	438	2.2	791	7.6	870	9.6	922	3.9
Girls	134	-	432	5.4 (NS)	779	8.4 (NS)	850	9.7 (NS)	954	7.2 (NS)
Both sexes	250	-	870	3.9	1,570	8.0	1,720	9.6	1,876	5.6
<u>Fluoride treatment</u>										
Boys	116	-	438	-	791	12.4	870	17.2	922	15.3
Girls	134	-	432	-	779	9.7 (NS)	850	16.3	954	13.8
Both sexes	250	-	870	5.3	1,570	11.2	1,720	(NS) 16.8	1,876	(NS) 14.6
<u>Orthodontic work</u> (braces)										
Boys	116	-	438	-	791	-	870	5.0	922	9.3
Girls	134	-	432	-	779	-	850	-	954	18.5
Both sexes	250	-	870	-	1,570	-	1,720	3.8	1,876	13.9
<u>Urgent</u> (dental problems requiring immediate attention)										
Boys	116	-	438	-	791	-	870	-	922	-
Girls	134	-	432	-	779	-	850	-	954	-
Both sexes	250	-	870	-	1,570	3.2	1,720	-	1,876	-

- Data suppressed due to insufficient sample size.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 3: Prevalence of, and Treatment for, Baby Bottle Tooth Decay (BBTD) in First Nations Infants, Toddlers and Preschool Age Children, by Characteristics of the Child, the Caregiver, the Household, and the Community.

CHARACTERISTICS	Weighted % Affected by BBTD		Weighted % Treated for BBTD		Weighted % Affected by BBTD		Weighted % Treated for BBTD	
	Total <i>n</i>	Child Aged 0 to 2 yrs	BBTD <i>n</i>	Child Aged 0 to 2 yrs	Total <i>n</i>	Child Aged 3 to 5 yrs	BBTD <i>n</i>	Child Aged 3 to 5 yrs
Total	1,217	11.9	131	27.4	1,620	29.4	370	67.4
Child's characteristics								
Sex								
Boys	599	12.5	64	-	807	28.4	182	62.3
Girls	618	11.4 (NS)	67	-	813	30.4 (NS)	188	72.4 (NS)
Consumption of soft drinks or pop								
Never or hardly ever	723	5.8	39	-	378	17.5	55	89.9
About once a week	204	-	27	-	438	28.9 (NS)	106	67.7 (NS)
A few times a week	212	27.2	48	-	616	30.9	151	67.6 (NS)
Once a day	37	-	6	-	101	44.8	30	-
Several times a day	41	-	11	-	87	-	28	-
Consumption of cakes, pies, cookies, candy, or chocolate								
Never or hardly ever	472	-	14	-	259	33.1	61	64.3
About once a week	286	15.6	43	-	487	27.4 (NS)	92	49.6 (NS)
A few times a week	372	17.3	62	-	696	26.4 (NS)	163	79.1 (NS)
Once a day	56	-	5	-	126	29.5 (NS)	32	-
Several times a day	31	-	7	-	52	-	22	-
Child was breast-fed								
Yes	729	11.2	83	29.5	984	24.4	209	69.2
No	473	13.2 (NS)	48	24.5 (NS)	617	38.8 (NS)	159	64.8 (NS)
Child's general health								
Excellent	556	9.1	44	28.5	704	26.1	133	56.8
Very good	356	10.3 (NS)	42	37.0 (NS)	495	31.0 (NS)	127	75.5 (NS)
Good	241	-	27	-	346	34.5 (NS)	88	69.2 (NS)
Fair	55	-	15	-	62	-	16	-
Poor	2	-	0	-	9	-	4	-

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Has asthma (as specified by a health care professional)								
Yes	121	-	22	-	215	33.0	55	50.3
No	1,035	11.4 (NS)	106	27.3 (NS)	1,344	28.3 (NS)	310	72.2 (NS)
Had an asthma attack in the past 12 months								
Yes	37	-	6	-	61	-	14	
No	73	-	15	-	130	40.5	37	
Has chronic ear infections or ear problems (as specified by a health care professional)								
Yes	102	-	15	-	139	45.2	47	50.8
No	1,062	11.9 (NS)	114	26.7 (NS)	1,421	27.3 (NS)	320	72.1 (NS)
Currently taking traditional medicines								
Yes	75	-	13	-	82	-	27	
No	1,125	10.9 (NS)	114	23.7	1,517	28.7 (NS)	336	66.1 (NS)
Caregiver's characteristics								
Relationship to child								
Birth parent	1,164	11.9	127	27.7	1,515	29.4	349	65.9
Adoptive parent	9	-	1	-	21	-	4	-
Foster parent	9	-	1	-	17	-	2	-
Step parent	1	-	0	-	1	-	0	-
Sister or brother	2	-	0	-	6	-	2	-
Grandparent	26	-	1	-	50	-	12	-
Other	6	-	1	-	10	-	1	-
Sex								
Male	157	-	10	-	211	38.3	44	46.6
Female	1,060	13.2	121	27.4 (NS)	1,409	27.7 (NS)	326	72.7 (NS)
Mother's education (highest attained)								
Did not graduate from high school	601	14.2	79	-	764	38.5	213	58.3
High school diploma	279	10.5 (NS)	30	-	356	21.7	72	83.5 (NS)
Postsecondary diploma – non-degree	232	-	16	-	343	21.4 (NS)	55	82.6 (NS)
Bachelor's degree	66	-	4	-	97		18	
Graduate degree	2	-	0	-	5		0	

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Father's education (highest attained)								
Did not graduate from high school	607	13.5	78	27.7	751	34.7	195	72.1
High school diploma	207	-	21	-	272	27.3 (NS)	63	54.6 (NS)
Postsecondary diploma – non-degree	195	-	11	-	304	18.8	52	80.7 (NS)
Bachelor's degree	26	-	1	-	42	-	6	-
Graduate degree	3	-	0	-	7	-	0	-
Household characteristics								
Household income								
Under \$10,000****	177	-	17	-	217	49.9	81	67.8
\$10,000 to \$14,999	104	-	16	-	158	23.1	49	75.0 (NS)
\$15,000 to \$19,999	90	-	11	-	116	20.5	29	-
\$20,000 to \$29,999	161	-	20	-	214	20.5	41	85.5 (NS)
\$30,000 to \$49,999	150	-	10	-	241	19.0	42	85.4 (NS)
\$50,000 to \$79,999	88	-	8	-	132	-	20	-
\$80,000 and over	22	-	0	-	28	-	0	-
Smoke free home								
Yes	839	10.2	85	-	1,031	28.2	224	62.9
No	370	15.0 (NS)	44	-	571	30.9 (NS)	137	72.9 (NS)
Community characteristics								
Remoteness factor*****								
Remote	44	-	6	-	61	-	14	-
Isolated	121	-	16	-	144	52.0	57	48.5 (NS)
Semi-isolated	79	-	13	-	143	-	26	-
Non-isolated	890	7.7	73	-	1,154	22.0	227	78.6
Health Transfer Status*****								
Not transferred	654	9.8	67	-	906	29.2	193	62.9
Community transferred	364	-	27	-	426	27.2 (NS)	97	73.1 (NS)
Multi-community transfer	195	26.5	37	-	285	33.7 (NS)	80	75.4 (NS)
Community size*****								
Small (<300)	126	-	19	-	182	21.8	29	-
Medium (300-1,499)	666	8.0	58	-	946	25.7 (NS)	206	70.8
Large (1,500+)	425	15.1 (NS)	54	-	492	35.8 (NS)	135	60.6

- Data suppressed due to insufficient sample size.

****Includes no income and income loss. Total household income from all sources, for all household members, including the respondent, before deductions, for the year ending December 31, 2001.

*****The remoteness factor (isolation status) of the respondent's community of residence according to 2002 data provided by First Nations and Inuit Health Branch (FNIHB, Health Canada). Remote isolated = no scheduled flights; isolated = flights, good telephone, no road access; semi-isolated = road access greater than 90 km to physician services; non-isolated = road access, less than 90 km from physician services.

*****Health Transfer Status of the community in which the respondent resides. Data are based on August 2002 data from FNIHB, Health Canada. Primary, secondary and tertiary level services were combined. Not transferred = respondent's community of residence is not part of a health transfer agreement; community transfer = respondent's community of residence has responsibility, through "Health Transfer" for primary and/or secondary and/or tertiary services; multi-community = respondent's community of residence is part of a multi-community health services transfer agreement for primary and/or secondary and/or tertiary services.

*****The size of the on-reserve population in the respondent's community of residence based on adjusted 2002 Indian Register counts for the population living on-reserve or on crown land associated with the band. Counts were adjusted for under-reporting and late reporting of births and deaths.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Table 4: Selected Characteristics of the Child, the Caregiver, and the Household, by Baby Bottle Tooth Decay (BBTD) Experience in First Nations Infants and Toddlers, and Preschoolers.

CHARACTERISTICS	Child Aged 0 to 2 yrs		Child Aged 3 to 5 yrs	
	BBTD Yes	BBTD No	BBTD Yes	BBTD No
Total number	131	1,084	374	1,245
Child's characteristics	Mean (CI95)	Mean (CI95)	Mean (CI95)	Mean (CI95)
Body Mass Index (BMI) score	22.2 (20.3, 24.0)	21.7 (20.9, 22.6)	19.8 (18.7, 20.8)	19.4 (18.7, 20.2)
Birth weight (kg)	3.7 (3.5, 3.8)	3.6 (3.5, 3.7)	3.6 (3.5, 3.7)	3.6 (3.6, 3.7)
Number of months child was breast-fed	5.8 (4.3, 7.3)	6.3 (5.7, 6.9)	8.3 (6.5, 10.1)	9.1 (8.2, 10.0)
Number of hours per week child spent in child care	*21.6 (17.4, 25.9)	27.8 (26.0, 29.5)	18.9 (15.2, 22.6)	21.3 (19.7, 22.8)
Caregiver & household characteristics				
Age of caregiver (yrs)	27.1 (25.6, 28.6)	28.2 (27.5, 28.9)	30.0 (28.6, 31.4)	30.8 (30.3, 31.4)
Number of children living in household: <18	3.2 (2.7, 3.7)	3.1 (2.9, 3.2)	3.3 (3.0, 3.7)	3.1 (3.0, 3.2)
Number of adults living in household: 18+	2.4 (2.1, 2.8)	2.5 (2.4, 2.6)	2.4 (2.3, 2.5)	2.2 (2.1, 2.3)
Number of rooms in the home	5.5 (5.0, 6.0)	5.9 (5.8, 6.0)	5.3 (4.9, 5.7)	5.8 (5.6, 5.9)

CI95 = 95% Confidence Interval

*Significant at p<0.05.

Table 5: Prevalence of Dental Injury in First Nations Children, by Age Group, Sex and Risk Factors.

Risk Factor for Dental Injury*	Total No. of Children	Weighted % With Dental Injury (CI95)**	Odds Ratio	95% CI	P-value
Total Number	6,657	2.5 n=119	---	---	---
Age Group (yrs)					
0 to 2	1,255	-	1.00	Reference	---
3 to 5	1,665	3.8 (NS)	2.02	1.23-3.34	0.003
6 to 8	1,781	-	0.67	ns	0.172
9 to 11	1,953	2.8 (NS)	1.49	ns	0.107
Sex					
Boys	3,319	2.9	1.45	1.05-2.02	0.020
Girls	3,335	2.0 (NS)	1.00	Reference	
Bicycle accident not related to motor vehicle accident					
Yes	188	-	7.81	4.89-12.38	<0.001***
No	6,466	2.1	1.00	Reference	
Sport, not including bicycle or hunting					
Yes	160	-	5.40	3.11-9.27	<0.001***
No	6,494	2.3	1.00	Reference	
Snowmobile accident					
Yes	19	-	4.58	ns	0.082***
No	6,635	2.5	1.00	Reference	
Fall or trip, not including bicycle, sport or snowmobile					
Yes	603	10.2	6.25	4.46-8.74	<0.001
No	6,051	1.8	1.00	Reference	
Physical assault (including domestic violence)					
Yes	18	-	4.87	ns	0.074***
No	6,636	2.5	1.00	Reference	

- Data suppressed due to insufficient cell size.

*Multiple injuries accepted.

**CI95 = 95% Confidence Interval to highlight extreme variability, if applicable.

ns = not statistically significant.

***P-value from Fisher Exact test; otherwise, Chi-square test.

Data source: First Nations Regional Longitudinal Health Survey 2002-03; First Nations Information Governance Committee – Assembly of First Nations, First Nations Centre at the National Aboriginal Health Organization.

Chapter 33

The Impact of Parent and Grandparent Residential School Attendance

Abstract

This chapter presents findings on the well-being of First Nations children in relation to their parents and grandparents residential school attendance. In this chapter, we report on the proportion of children whose parents and/or grandparents are survivors of the residential school system. We compare survey findings on children of survivors, against findings on children whose parents or grandparents did not attend residential schools. One key finding is that children are more likely to have grandparents who are survivors of residential schools than parents who are survivors. The majority of parents and grandparents who attended residential school believe that it is very important that their children learn a First Nations language; in fact, children of survivors are more likely to speak one or more First Nations language(s). About half of the survivors state that traditional cultural events are very important in the life of their child. We also find that the effects of the residential school legacy are not as evident among children in comparison to youth and adults. The findings of this study indicate that it is difficult to deduce how the residential school legacy influences the health and social determinants of today's First Nations children. This is not to say that such influences do not exist; it may, for instance, be too early for the effects of residential schools to have presented themselves in the lives of First Nations children.

Introduction

From the late 1800s until the 1980s¹ the Federal Government of Canada provided education to Aboriginal children through a system of residential schools.² Residential schools were phased out in Canada in the 1960s and 1970s. The residential school legacy³ has had lasting effects on not only the students who attended the schools, but also on succeeding generations.

In the 2002/03 First Nations Longitudinal Regional Health Survey (RHS) adult results indicate that for those adults who attended residential schools, the damage to the physical, mental, emotional, and spiritual aspects of health has been profound. First Nations children and grandchildren (12 years old and under) of residential school survivors are at risk of being impacted by their parents' and grandparents' residential school attendance.

In this chapter, we discuss the proportion of children whose parents and grandparents have attended residential schools. These figures are compared to the results for children and grandchildren who did not have either a parent or grandparent that attended the schools. The comparison is made in relation to the following themes: the importance of learning a First Nations language; the loss of language; the importance of traditional cultural events; parents opinion about the overall health of their child; and, the potential risk for being diagnosed with a mental or health illness.

Results

Findings for this study indicate that 16.5%ⁱ of First Nations children have one or more parent who attended residential schools and that 58.6% of First Nations children had one or more grandparent who attended residential school. The difference in the attendance rate of parents and grandparents is reflective of the disappearance of residential schools beginning in the 1960s. In Chapter 13, it was reported that 20.3% of the adults surveyed were students of residential schools. Other studies have reported that well over 100,000 First Nations children attended residential schools during the residential school era. In practical terms, this means that as many as nine out of every ten First Nations people today know someone who went to a residential school.⁴ While nine out of ten First Nations children know someone who went to residential school, this study demonstrated that at least six out of ten children are related to someone who went to residential school.

Table 1. Proportion of First Nations children who had parents and grandparents that attended residential school

Intergenerational Attendees	Percent
Mother or guardian attended a residential school	9.3%
Father or guardian attended a residential school	11.3%
One or more parents attended a residential school	16.5%
Maternal grandmother attended a residential school	38.8%
Maternal grandfather attended a residential school	37.0%
Paternal grandmother attended a residential school	34.6%
Paternal grandfather attended a residential school	33.7%
One or more grandparents attended a residential school	58.6%
At least one parent(s) and one grandparent(s) attended a residential school	11.9%

What is especially troubling about the legacy of residential schools is the way in which the effects of the schools have been passed down to the children and grandchildren of survivors. Nonetheless, the survey indicates that effects of the legacy are not as evident among children of survivors in comparison to youth and adults who were children of survivors. This is reflected in areas such as: the importance of learning a First Nations language; the loss of language; the importance of traditional cultural events and the potential risk for being diagnosed with a mental or health illness. In examining the differences between children and youth who are children of residential school survivors, one might conclude that the effects of the legacy are declining. It may, however, be that indicators suggest the effects of the legacy on the well being of children present themselves later in life. A detailed longitudinal comparison of statistics on First Nations children of survivors in childhood and youth is required to conclude whether or not effects of the legacy are actually on the decline, or if they are simply showing up later in the child's life. Most children 12 years old and younger are not likely to be the children of survivors. Only 9.3% of today's children have a mother or guardian who attended residential schools, and only 11.3% have a father or guardian who attended residential schools (see Table 1).

About 75.8%ⁱⁱ of those parents (one or more) who attended residential school believe that it is very important that their child learn a First Nations or Inuit Language, compared to 62.2% of parents who never attended residential school. About 67.5% of grandparents (one or more) who attended residential school also believed that it was very important that their grandchild/child⁵ learn a First Nations or Inuit language, compared to 59.5% of those grandparents who did not attend residential schools (see Table 2).

ⁱ To simplify the text, confidence intervals are not reported for estimates unless the coefficient of variation is greater than 33.3%.

ⁱⁱ Comparisons between groups or categories are statistically significant except where "NS" —not significant— is noted. Differences, in this chapter, are considered significant when confidence intervals do not overlap at the 95% confidence level (after Bonferroni adjustment).

Table 2. Proportion of First Nations survivors (parents and grandparents) and the importance of learning a First Nations or Inuit language for children

Level of Importance	Parent (one or more)		Grandparent (one or more)	
	Survivor	Non-Survivor	Survivor	Non-Survivor
Very important	75.8%	62.2%	67.5%	59.5%
Somewhat important	20.1%	30.1%	26.7% (NS)	31.5% (NS)
Not very important	3.7%(NS)	5.0%(NS)	4.6%(NS)	5.3%(NS)
Not important	—	2.7%	1.2%	3.7%

— Data suppressed due to insufficient sample size.
(NS) refers to non-significant relationship

There is little difference between children of survivors and children of parents who did not attend residential schools in terms of understanding one or more First Nations/Inuit languages fluently or relatively well (see Table 3). Interestingly, children of survivors (22.6%) are more likely than children whose parents did not attend residential school (16.4%) to speak one or more First Nations languages fluently.

Table 3. Proportion of children who are able to understand and speak one or more First Nations or Inuit languages by their parents' residential school attendance

	Parent (one or more)	
	Survivor	Non-Survivor
Understanding of a First Nations language		
No First Nations language	71.8%(NS)	76.7%(NS)
One or more First Nations language	28.2%(NS)	23.3%(NS)
Ability to speak a First Nations language		
No First Nations language	77.4%	83.6%
One or more First Nations language	22.6%	16.4%

(NS) refers to a non-significant relationship.

Just over half of the parents (55.1%) who attended residential school stated that traditional cultural events are very important in their child's life. These parents are more likely to attribute a higher degree of importance to traditional culture than those parents who did not attend residential school (42.3%). Only 5.0% of parents who are survivors stated that traditional cultural events are not important in their child's life and this is not significantly different from parents who did not attend residential school. In short, the data illustrate that children of survivors are more likely than children of parents who never attended residential school to speak one or more First Nations languages. In addition, parents of survivors are more likely to attribute a high level of importance to their children's learning a First Nations language, and to the importance of traditional/cultural events.

This is a positive sign, indicative of cultural revitalization among these individuals.

When the findings were presented, it was difficult to deduce how the health and social determinants of First Nations children today are influenced by the effects of the legacy of residential schools. No significant relationships between children's health and well-being and their parents' and/or grandparents' attendance at residential school could be found. It may be that the effects of residential schools have not yet presented themselves in First Nations children. The majority of survivors (90.7%) and non-survivors (95.1%) reported that their child was in good to excellent health. We can safely conclude at this time that First Nations children's health and overall well-being is not related to their parents' or grandparents' attendance at residential schools.

Conclusion

There were no significant relationships found between children's physical, mental, emotional or spiritual health and the attendance of their parents and/or grandparents at residential schools. Most parents felt their children were in good health. From one perspective, the health and social determinants and/or overall well-being of First Nations children today are mostly the result of several factors other than the attendance of their parents and/or grandparents attendance at residential schools—especially since the majority of children under 12 years do not have parents who attended residential schools. However, it is important to note that poor parenting skills, resulting from residential school attendance may have passed from generation to generation—although it can also be said that parenting skills are improving because of the resilience and healing of First Nations survivors and communities. The loss of parenting skills places First Nations children today at a higher risk for some negative health and overall well-being outcomes. The findings in this study confirm that any future research on residential schools and First Nations children less than 12 years old should focus on the recovery from residential schooling for both First Nations children and their parents and grandparents. Furthermore, findings reported in this chapter suggest that it would be beneficial to conduct a more detailed longitudinal comparison of statistics on First Nations children in both childhood and youth, in order to conclude whether or not effects of the legacy are actually on the decline, or if they are simply showing up later in the child's life.

Notes to Chapter 33

1.
 - John S. Milloy, *A National Crime: The Canadian government and the residential schools system, 1879 to 1986* (Winnipeg, Man.: University of Manitoba Press, 1999).
 - Jennifer J. Llewellyn, "Dealing with the Legacy of Native Residential School Abuse in Canada: Litigation, ADR, and Restorative Justice," *University of Toronto Law Journal* 52 (2002), pp. 253-300.

Note: Sources differ on the date the last schools closed; many place the date somewhere in the mid-1980s. The differences seem to result from the fact that the federal government had no control over residential schools after the mid-1980s, although some schools continued to operate after this time under the control of First Nation groups. The last of these schools closed in 1996 in Regina, Saskatchewan. Milloy (1999) cites 1986 as the last year in which the federal government had exclusive control over a residential school (cited in Llewellyn, 2002).
2.
 - Llewellyn, "Dealing with the Legacy of Native Residential School Abuse in Canada: Litigation, ADR, and Restorative Justice," *University of Toronto Law Journal*.
 - S. Fournier & E. Grey, *Stolen From Our Embrace: The Abduction of First Nation Children and the Restoration of Aboriginal communities* (Toronto, Ont.: Douglas & McIntyre, 1997).
 - Agnes Grant, *No end of grief: Indian residential schools in Canada* (Winnipeg, Man.: Pemmican Publishers, 1996).
 - James Roger Miller, *Shingwauk's Vision: A History of Native Residential Schools* (Toronto, Ont.: University of Toronto Press, 1996).
 - Milloy, *A National Crime: The Canadian government and the residential schools system, 1879 to 1986*.

Note: For a definition of residential schools, see Chapter 14. For a general overview of the history of the residential school system, Llewellyn (2002) suggests seeing S. Fournier & E. Grey (1997) at chapter 2; Agnes Grant (1996); J. R. Miller (1996); and John S. Milloy (1999).
3.

Note: For a definition of the Residential School Legacy, see Chapter 13.
4.

Llewellyn, "Dealing with the Legacy of Native Residential School Abuse in Canada: Litigation, ADR, and Restorative Justice," *University of Toronto Law Journal*.
5.

Note: Responses from grandparents (one or more) who attended residential school are either answering on behalf of, or in response to, children under 12 years of age. This writer is not able to determine if grandparents are answering for their own grandchildren, children they are raising, or both.

Chapter 34

Emotional and Social Well-being

Abstract

The emotional and social well-being of First Nations children is impacted by a variety of factors such as the residential school legacy, importance and participation in cultural and traditional activities, school attendance, activity participation and limitations, diet and residential school attendance of parents and grandparents. In addition, the emotional and social well-being of our children is impacted by their parent(s) educational attainment. The higher the level of education attained by parent(s) the more likely First Nations children will eat well, be less likely to have behavioural problems, be involved in reading activities everyday and be in good general health. Being able to define what constitutes “educational attainment” so that it functions in concert with aspects of community self-determination needs to be carefully thought out, articulated and implemented. That is, education should come to mean not just increasing education rates, but recognizing the value of traditional cultural education as well. Trying to actualize these types of social phenomena is often complex and can cause emotional and social stress. Children are the future of our communities; understanding their emotional and social well-being will help us build strong communities for the future.

Introduction

The 2002/03 First Nations Regional Longitudinal Health Survey (RHS) asked seven key questions concerning the emotional and social well-being of children surveyed. This was part of a comprehensive strategy through a culturally appropriate, holistic framework to gain insight of the emotional and social well-being of First Nations children as an important indicator of the overall health of our children. This chapter provides analysis and interpretation of the data collected and compares them with similar data of the emotional and social well-being of children in the general Canadian population.

Emotional and social well-being have come to be included as a key part of what constitutes health. The World Health Organization (WHO) defines *health* as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”¹ Components of our lives that impact our emotional and social well-being can include: engagement in community activities, such as sports, arts, and traditional activities; extra-curricular activities; and the resultant emotions and behaviours these activities involve. Similarly, First Nations children’s emotional and social well-being can be impacted by various factors such as the participation in cultural and traditional activities, school attendance, activity participation and limitation, diet, and residential school attendance of parents and grandparents.

RHS Cultural Framework

A cultural framework was employed to collect and analyze the emotional and social well-being of First Nations children. Emotional and social well-being in this chapter is represented in a First Nations holistic fashion using the medicine wheel model. The working wheel framework is based on a four-directional model comprised of Body, Spirit, Heart and Mind. The emotional and social well-being of children is connected to all elements of the four directions.

Emotional and social well-being impacts and is manifested in the body. It can manifest itself by affecting physiological and biological functions, which might impact behaviours, dispositions, and psychological states. It also impacts and is manifested through our spirit, which might affect our relationship with the earth and the Creator and, in turn, affect our traditional culture, spirituality, assimilation and residential schools. The heart also impacts emotional and social well-being in terms of connection to family, emotional stability, harmony and balance. Finally, the mind plays a pivotal role in children’s emotional and social well-being, which includes school attendance, activity limitations, extracurricular activities, reading and behavioural conduct.

This chapter is organized according to the medicine wheel model. Section one will present data related to the *Spirit*, including residential schools, health transfer status and participation in cultural and traditional events. Section two

will present data related to the *Heart*, including emotional and behavioural problems and family connectedness. Section three will present data related to the *Mind*, including parental education levels, children’s schooling and reading. Section four will present data related to the *Body*, including nutrition, activity participation and limitation.

East–Spirit

Residential schools

In its report *Aboriginal People, Resilience and the Residential School Legacy*, the Aboriginal Healing Foundation defines residential schools as “the Residential School system in Canada attended by Aboriginal students, including industrial schools, boarding school, homes for students, hostels, billets, residential schools, residential schools with a majority of day students or a combination of any of the above.”² The report further describes that Aboriginal children were “enrolled on the pretext that they would receive a “Christian” education and be protected from their parents’ “backward” influence, many thousands of Aboriginal children were sent to residential schools during the time the schools existed.”³

Residential school attendance has been repeatedly cited to have adversely influenced the health and well-being of Aboriginal peoples. In the context of the emotional and social well-being of children, it is significant to keep in mind the intergenerational impacts of the residential school system. The intergenerational effects of colonialism are well documented. Intergenerational impact refers to the “effects of physical and sexual abuse that were passed on to the children, grandchildren and great-grandchildren of Aboriginal people who attended the residential school system.”⁴ The impacts that intergenerational survivors of residential school experience are extensive and vary in severity. With respect to emotional and social well-being, some of the more prominent impacts include: psychological and emotional problems and abuse, fear of personal growth, transformation and healing, dysfunction in family and social relationships, educational impacts (such as aversions to formal learning programs that seem “too much like school”), fear of failure, self-sabotage, and disunity/conflict between individuals, families and factions within the community.⁵

Of the respondents to the RHS Children’s questionnaire, 9.3% indicated that their mother had attended residential school and 11.3% said their father had attended residential school. Over one in ten (11.9%) had at least one parent and one grandparent who attended residential school. Moreover, 58.6% of all children had at least one grandparent who attended residential school.

Children were able to get along well with their families no matter which, if any, of their parents or grandparents attended residential school. In addition, residential school attendance (of the parent, grandparent, or both) was not

found to be significantly related to an increased prevalence of emotional or behavioural problems.

Community characteristics: health transfer status, isolation, and size

Several community characteristics were available for cross-tabulation with the child's emotional and mental well-being. These include, health transfer status, degree of isolation, and community size.

With respect to health transfer status, First Nations communities continue to assert the link between community efforts toward self-government and the community's health. Recent research conducted on cultural continuity and self-government has supported this link.⁶ When asked about the status of health transfer, 56.5% indicated that they had not transferred their health status, and 29.4% indicated that their community had taken responsibility for the delivery of on-reserve health services under health transfer policy.

The data shows no significant relationships between the health transfer status of the community and the prevalence of parents reporting that their child had problems getting along with the family. Similarly, health transfer status was not related to the rate of emotional or behavioural problems, nor did it influence the parent-reported general health of the child.

Community isolation or size also had no significant effects on the prevalence of emotional or behavioural problems or problems with getting along with their families.

Importance of cultural events

Current research also reinforces the link between cultural continuity and the health of First Nations individuals and communities.⁷ Emotional and social well-being are linked to cultural continuity, and the RHS included key questions on culture in its Children's Questionnaire. With respect to emotional and social well-being, respondents were asked about the importance of traditional cultural events in the child's life.

When asked about the importance of cultural events in the child's life, 83.2% indicated they were somewhat or very important, and 16.8% said that they were not important.

In addition, the importance of cultural events in the child's life is strongly associated with the frequency of a child participating in activities such as traditional singing, drumming or dancing groups or lessons. Parents who believe cultural events to be somewhat or very important are much more likely to have their children participate in traditional activities such as singing, drumming, or dancing than those who felt that it was not important—(31.0% versus 4.0% participating least once a week respectively).

South-Heart

Family connectedness

Family connectedness is how children relate to and get along with their families. This is an important consideration in their emotional and social well-being. It has been widely recognized that social environments and support networks play a significant role with respect to the emotional and physical well-being of children. One of the essential elements of this social environment is the family.⁸ The 2003 federal government report on the well-being of Canada's young children highlighted research demonstrating that family dynamics is one of the most important elements affecting healthy childhood development.⁹ Family dynamics includes factors such as family functioning. Family functioning refers to how well family members communicate with each other, work together and treat each other.¹⁰ The RHS Children's Survey measured these sorts of family dynamics by asking respondents how well the child got along with his/her family over the preceding six months.

Overall, the vast majority of First Nations children did get along with their families. 51.9% indicated very well with no difficulties; 41.7% said quite well with hardly any difficulties; 5.9% said not too well with lots of difficulties; and 0.6% indicated that the child was not getting along at all well with constant difficulties. There were no significant gender differences observed. However, older children were more likely to have difficulties getting along with their families (4.7% of those under six years of age compared to 7.9% of those six and older).

The 1997 First Nations and Inuit Regional Longitudinal Health Survey (FNIRLHS) asked this same question with slightly better results. In 1997, approximately three-quarters of First Nations and Inuit children surveyed got along well with their families. As in the 2002/03 survey, the 1997 FNIRLHS indicated that the age of the child did impact on the respondent's answers. The older the child, the more likely they were to have difficulties getting along.

Emotional and behavioural problems

A comprehensive review of the emotional and social well-being of children includes an examination of emotional and behavioural problems, which can include expressed emotions such as anxiety, aggression, emotional disorders, or more physically manifested behaviours such as hyperactivity, conduct disorders and behavioural disorders. The RHS Children's Questionnaire asked one question regarding emotional and behavioural problems of children (in comparison to children of his/her age).

Overall, 15.4% of children reported an emotional or behavioural problem. Boys were more likely (18.4%) than girls (12.2%) to have an emotional or behavioural problem. Moreover, younger males (under six years) were more likely

than their female counterparts to have an emotional or behavioural problem –(4.3% versus 5.9%). This difference is not significant among boys and girls six years of age and older where the overall rate is nearly one in five (19.5%).

Not surprisingly, children with emotional or behavioural problems (22.2%) were more than five times more likely than those without (3.9%) to have not gotten along with their family over the past six months.

In 1997, the FNIRLHS also collected data on the behavioural and emotional problems of children, and 17% of parents indicated that their child had more behavioural or emotional problems in the past six months than other children the same age. Moreover, in the children surveyed who were aged 12 and over, about 25% of respondents reported to have behavioural and emotional problems.¹¹ Although the data collected in 1997 is not First Nations specific, it would appear that the rates of emotional and behavioural problems are similar to the rates found in the RHS Children's study.

Some data for the general Canadian children's population has been collected on emotional and behavioural problems. However, much of this data does not compare children surveyed to other children their age (of specific cultural groups and/or populations). As such, a comparison between the data collected in the RHS and the general Canadian children's population is difficult to make. The National Longitudinal Survey of Children and Youth (NLSCY) cycle 3, for example, cited that the majority of children (in the general Canadian population) do not exhibit signs of behavioural problems. 13.8% of children surveyed in the NLSCY showed signs of anxiety; 12.2% showed signs of hyperactivity and inattention; 13.6% showed signs of physical aggression; and 10.1% showed low signs of pro-social behaviour. In general, it would appear that there is not a significant difference in the emotional and social behaviour of First Nations and non-First Nations children, although a more suitable comparison could be undertaken.¹²

West-Mind

Parental education levels

Intuitively, the educational level of parents should have an impact on the health and well-being of their children. The Government of Canada's report on children's well-being, for example, highlighted the significant contribution of maternal education on child outcomes and development.¹³ Today's economy is knowledge-based with a strong emphasis on education. A parent's education impacts the type of employment opportunities available to them, which is a key determinant of health. Their education impacts their own emotional and social well-being, and by extension that of their children. The RHS Children's Questionnaire asked about parental educational levels; the parents or guardians detailed the highest level of formal schooling completed (see Table1).

Table 1. Highest level of education attained by the child's mother and father

Level of education attained	Mother	Father
Did not graduate high school	46.0%	56.6%
High school graduate	24.4%	20.3%
Post-secondary diploma	24.5%	20.4%
Bachelor's degree	5.0%	2.6%
Graduate degree	-	-

Further analysis of the RHS data reveals that there is a clear pattern that indicates the higher the level of education attained by the mother or father, the more likely the mother or father responded that their child was in very good or excellent general health. Mothers with a university degree were more likely (81.7%) than mothers without a high school diploma, high school graduates, or diploma recipients (67.2% to 72.5%) to rate their child in very good or excellent health. The effect of the child's father's educational level is less pronounced. Those with post secondary education were more likely than non-high school graduates to have a child in very good or excellent health.

Educational rates for First Nations populations have continually been lower than that of the Canadian population. The third cycle of the National Longitudinal Survey of Children and Youth in Canada (NLSCY) provides comparative data on the education level of parents of young children (1998-1999). According to the NLSCY, 12.1 % of mothers of young children did not graduate high school, 16.1 % were high school graduates, 26.4% had gone beyond high school and 45.4 % obtained a college diploma (including trade) or university degree. Further, the NLSCY showed that 13.6% of fathers of young children did not graduate high school, 15.6 % were high school graduates, 22 % had gone beyond high school and 48.7 % had obtained a college diploma (including trades) or university degrees (Table 2).¹⁴

Table 2. Education level of parents RHS (2002/03) vs. NLSCY (1998-99)

Level of education	Mother		Father	
	RHS	NLSCY	RHS	NLSCY
Not graduated high school	46.0%	12.1%	56.6%	13.6%
High school graduate	24.4%	16.1%	20.3%	15.6%
Diploma or University Degree	29.7%	45.4%	23.1%	48.7%

While the figures for educational rates in the Canadian population are in sharp contrast to the figures collected through the RHS, this difference is not a new discovery. The current data collected in the RHS reinforces the need to make

First Nations education a priority, with a focus on attainable results not only to increase education rates, but recognizing the value of traditional cultural education as well.

Children's schooling

Children were asked about their attendance in school and in Aboriginal Head Start Programs. 67.9% of children between 3 and 5 and 84.5% between 6 and 11 were reported to be currently attending school. When asked if the child had ever attended Head Start, 38.8% indicated yes and 63.2% said no. Regular school attendance is higher than Head Start attendance. The impact of Head Start on-reserve is not easily measured as it is, at least at this point, difficult to indicate if the low numbers reflected disinterest or inaccessibility. Further investigation is needed to understand the underlying social phenomena impacting attendance levels especially with the communities that offer Head Start programs

Children's reading

Research indicates that, for children, reading or being read to by significant others is an important determinant to a child's healthy development. Reading activities have developmental benefits, and facilitate and fosters relationship building and emotional connectedness.¹⁵ As such, the emotional and well-being component of the RHS Children's survey asked parents how often their children read for fun or were read to (outside of school).

Of the respondents, 33.1% indicated they read for fun or were read to every day, 40.9% at least once a week, 10.5% at least once a month and 15.5% never do. As seen in Table 3, girls are more likely to be read to everyday, while boys are more likely to never have been read to.

Table 3. Proportion of children who are read to by gender

Frequency	Male	Female	Total
Everyday	27.4%	39.2%	33.1%
At least once a week	41.9%	39.8%	40.9%
At least once a month	12.4%	8.6%	10.5%
Never	18.3%	12.6%	15.5%

Further to this, analysis of the data indicates that children who are currently attending school are more likely to read for fun or are read to everyday. However, it appears that frequency of reading is not linked to or impacted by whether or not the child ever attended an Aboriginal Head Start program.

Frequency of reading or activities that incorporate some aspect of reading are also linked to the educational attainment of the mother and father. The higher the level of education attained by the mother or father, the more likely the child will read on their own be read to everyday. The

most prominent difference occurs between mothers without a high school diploma and those with post-secondary education. In the case of the father, their children are more likely to have been read to if the father at least completed high school.

North-Body

Nutrition

The RHS Children's Questionnaire asked respondents if the child surveyed ate a nutritious and balanced diet. 55.6% of respondents said their children always or almost always ate a nutritious balanced diet; 39.6% reported that their child sometimes ate a nutritious balanced diet; the balance said that they rarely (4.3%) or never (0.7%) ate a nutritious balanced diet.

The data indicates there is no relationship between the mother's level of educational attainment and their child's diet. Similarly, there were no significant relationships between a child consuming a nutritious balanced diet and total household income or community health transfer status.

Participation in extracurricular activities

The participation of children in extra-curricular activities imparts their emotional and social well-being. The involvement of children in activities outside of school has been linked to fewer academic difficulties, increased social skills, increased self esteem and increased fitness levels.¹⁶ The RHS Children's Questionnaire asked respondents how often their child participated in various extra-curricular activities (such as sports teams or lessons, art or music groups or lessons, and traditional singing, drumming or dancing groups or lessons), and how many hours per week the child took part in other activities, such as watching television, playing video games, using computers, playing outdoors, and assisting in household chores.

Statistics for the general Canadian population obtained from the National Longitudinal Survey on Children and Youth (1998-1999) indicated that approximately 87% of Canadian children aged 4 to 15 participated in extra-curricular activities, and that approximately 13% of children rarely or never participated.¹⁷ In comparison, First Nations children have much lower participation rates. When the respondents were asked about activity participation (non-school) in sports teams, 52.8% indicated they never participated, 11.4% participated less than once per week, 28.6% participated one to three times per week, and 7.2% participated four or more times per week. This can have significant implications in First Nations rates of obesity as well as the state of emotional and mental well-being.

When asked about participation in art, music groups or lessons, 81.8% reportedly never participated, 7.3% participated less than once per week, 9.3% indicated they

participated one to three times per week, and 1.6% participated four or more times in art, music groups or lessons outside of school.

When the respondents were asked about participation in traditional singing, drumming or dancing groups or lessons outside of school, 74.3% never participated, 14.9% participated less than once per week, 9.3% participated one to three times per week and 1.6% participated four or more times per week.

The questionnaire also asked parents about the importance of their child learning a First Nations or Inuit Language. The data indicates that parents who believe it is very important that their children learn a First Nations or Inuit language are more likely to have their children participate in traditional activities four or more times a week. Of those parents who have their children participating in traditional activities four or more times a week, 90.6% reported that it was very important for their child to learn a First Nations or Inuit language, 7.1% said it was somewhat important, and 2.4% said it was not important. Conversely, the data revealed that there was no relationship between traditional activity participation and general health.

Respondents indicated that the average time spent watching television was 12.8 hours, playing video games was 6.1 hours, using a computer (other than to play video games) was 4.0 hours, playing outside was 13.9 hours, and assisting in household chores was 3.6 hours (see Table 26.13). These rates show that although our youth engage in activities that involve outside activity and assisting in household chores they are more likely to be sedentary, engaged in non-physical activities often not related to our First Nations way of life.

The way forward

The data collected through the First Nations Regional Longitudinal Health Survey (RHS) with respect to the emotional and social well-being of First Nations children will be instrumental in future policy and program decisions. It will be a significant part of the longitudinal survey as it details how our children are doing now. The data collected through the RHS process has highlighted that First Nations Children continue to be marginalized in several aspects of their emotional and social well-being. Key to minimizing marginalization is the meaningful engagement of First Nations in the development of the policies and programs that impact on their health. A focus on familial support and education initiatives will be essential components of any such strategies. First Nations must be fully engaged in the development of programs aimed at improving the emotional and social well-being of First Nations children – programs that fully embody First Nations holistic conceptions of health and incorporate First Nations principles of OCAP¹⁸ in their development and application.

Notes to Chapter 34

1. *Preamble to the Constitution of the World Health Organization* as adopted by the International Health Conference, New York, June 19-22, 1946. Signed on July 22, 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on April 7, 1948.
2. Aboriginal Healing Foundation, *Aboriginal People, Resilience and the Residential School Legacy* (Ottawa, Ont.: Aboriginal Healing Foundation, 2003).
3. Ibid.
4. Aboriginal Healing Foundation, *Aboriginal Healing Foundation Program Handbook*, 2nd edition (Ottawa, Ont.: Aboriginal Healing Foundation, 1999).
5. Aboriginal Healing Foundation, *Where Are The Children? Healing the Impacts of the Residential Schools* [online]. 2005. Available from World Wide Web: <<http://www.wherethechildren.ca/en/impacts.html>>.
6. M. Chandler and C. Lalonde, 1998, Cultural continuity as a hedge against suicide in Canada's First Nations, *Transcultural Psychiatry*, 24, 2: 191-219.
7. Ibid.
8. Health Canada, *Healthy Development of Children and Youth* (Ottawa, Ont.: Health Canada, 1999).
9. Government of Canada, *The Well-Being of Canada's Young Children* (Ottawa, Ont.: Government of Canada, 2003).
10. Human Resources Development Canada and Statistics Canada, *National Longitudinal Survey of Children and Youth, Cycle 4 (2000-2001)* (Ottawa, Ont.: Statistics Canada, 2001).
11. Health Canada, *First Nations and Inuit Regional Health Survey, Synthesis Report* (Ottawa, Ont.: Health Branch, 1997).
12. Human Resources Development Canada and Statistics Canada, *National Longitudinal Survey of Children and Youth, Cycle 3 (1998-1999)* (Ottawa, Ont.: Statistics Canada, 1999).
13. Government of Canada, *The Well-Being of Canada's Young Children*.
14. Government of Canada, *The Well-Being of Canada's Young Children* (Ottawa, Ont.: Government of Canada, November 2002).
15. Invest in Kids Foundation, *Reading: Importance of reading to your child* [online]. 2005. Available from World Wide Web: <http://www.investinkids.ca/DisplayContent.aspx?name=cpt_reading>.
16. Human Resources Development Canada and Statistics Canada, *National Longitudinal Survey of Children and Youth: Participation in Activities (1998-1999)* (Ottawa, Ont.: Statistics Canada, 1999).
17. Ibid.
18. Note: Ownership, Control, Access and Possession (OCAP) are First Nations principles applied to research and data collection initiative.

Appendix A

Acknowledgements

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Appendix B

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- Janet Smylie
- Sarah Marie Steeves
- Dennis Wardman
- Cornelia Wieman
- Andrea J. Williams
- Kienan Williams
- Erin Wolski
- Gustavo Zayas

Appendix C

Participating Communities

The following First Nations communities participated in the First Nations Regional Longitudinal Health Survey (RHS) 2002/03:

Alberta

Alexander First Nation
Driftpile First Nation
Kainai
Kapawe'no First Nation
Nakoda Bearspaw
Piikani First Nation
Siksika Nation
Sucker Creek First Nation
Swan River First Nation

British Columbia

Adams Lake Indian Band
Cambell River (We Wai Kum First Nation)
Canim Lake Indian Band
Columbia Lake Indian Band
Cowichan Tribes
Ehattesaht First Nation
Fort Nelson First Nation
Gitlakdamix Village Government (New Aiyansh)
Glen Vowell Indian Band
Gwa'sala-Nakwaxda'xw Nation
Heiltsuk Nation
Katzie First Nation
Kwadacha Band
Laxgalts'ap Village Government
Leq'a':mel First Nation
Malahat First Nation
Metlakatla Band
Mount Currie Band Council
Musqueam Indian Band
Nadleh Whuten Band (Nadleh Whuden)
Nanoose First Nation
Nee-Tahi-Buhn Band
N'Quat'qua Band
Okanagan Indian Band
Osoyoos Indian Band
Scowlitz First Nation
Seabird Island Band

Sechelt Indian Band
Skway First Nation
Sliammon
Soowahlie First Nation
Stone Indian Band (Yunesit'in)
Takla Lake First Nation
Tl'azt'en Nation (Tslasden)
Tsartlip First Nation
Tseshah First Nation
Tzeachten First Nation
Westbank First Nation
Williams Lake Indian Band (Sugar Cane)

Manitoba*

Barren Lands
Bloodvein
Borkenhead Ojibway First Nations
Canupawakpa Dakota First Nation
Ebb and Flow
Fairford
Fisher River
Fort Alexander
Garden Hill First Nation
Grand Rapids First Nation
Hollow Water
Kinojeoshtegon First Nation
Little Black River
Long Plain
Mathias Colomb
Norway House First Nation
Opaskwayak Cree Nation
Pine Creek
Rolling River
Roseau River
Sayisi Dene First Nation
Sioux Valley Dakota Nation
Split Lake Cree, First Nation
St. Theresa Point
Waywayseecappo

Wuskwi Sipihk First Nation
York Factory First Nation

New Brunswick*

Big Cove
Eel Ground
Kingsclear
Madawaska Maliseet First Nation
Saint Mary's
Woodstock

Northwest Territories*

Dechi Laot'I First Nations
Deh Gah Gotie Dene Council
Deninu K'ue First Nation
Dog Rib Rae
Fort Good Hope
Gwitchia Gwich'in
Hay River Dene
Jean Marie River First Nation
Liidii Kue First Nation
Lutsel K'e Dene
Pehdzeh Ki First Nation
Tetlit Gwich'in
Tulita Dene
Wha Ti First Nation
Yellowknives Fene First Nation

Nova Scotia/Newfoundland

Acadia
Afton (Paq'tnkek)
Annalopis Valley
Bear River
Chapel Island First Nation (Potlotek)
Eskasoni
Horton
Membertou
Miawpukek
Millbrook
Pictou Landing
Shubenacadie
Wagmatcook
Waycocomagh (We'koqma'q)

Ontario

Aundeck Omni Kaning First Nation
Bkejwanong Territory (Walpole Island)
Chippewas of Kettle and Stony Point
Chippewas of Mnjikaning First Nation
Chippewas of the Thames First Nations

Couchiching First Nation
Delaware First Nation (Moravian of the Thames)
Eabametoong First Nation
Eagle Lake
Ginoogaming First Nation
Grassy Narrows First Nations
Kee-Way-Win
Lac Seul
Mohawks of the Bay of Quinte
Naotkamegwaning Anishinabe First Nation
Ojibways of Batchewana
Ojibways of Pic River First Nation
Oneida Nation of the Thames
Sachigo Lake
Sagamok Anishnawbek
Sandy Lake
Saugeen
Temagami First Nation
Upper Mohawk: Six Nations (plus other 12 bands)
Wabigoon First Nation
Wahta Mohawks
Wasauksing First Nation
Whitefish Lake First Nation
Whitefish River

Québec

Betsiamites
Eagle Village - Kipawa
Essipit
Gesgapegiag
Kanesatake
Kawawachikamach
Kitigan Zibi
Lac Simon
Listuguj
Malécites de Viger
Manawan
Mashteuiatsh
Natashquan
Odanak
Opticivan
Pakua Shipi
Pikogan
Timiskaming
Uashat Mak Mani-Utenam
Unamen Shipu
Wemotaci
Wendake
Wôlinak

Saskatchewan

Ahtahkakoop First Nation
 Beardy's and Okemasis First Nation
 Big River First Nation
 Birch Narrows First Nation
 Black Lake First Nation
 Buffalo River Dene Nation
 Canoe Lake First Nation
 Carry The Kettle First Nation
 Clearwater River Dene First Nation
 Cote First Nation 366
 Cowessess First Nation
 Cumberland House Cree Nation
 Day Star First Nation
 English River First Nation
 Fishing Lake First Nation
 Flying Dust First Nation
 Fond du Lac First Nation
 Gordon First Nation
 Hatchet Lake First Nation
 Island Lake First Nation
 James Smith First Nation
 Kahkewistahaw First Nation
 Kawacatoose First Nation
 Keeseekoowase First Nation
 Key First Nation
 La La Ronge First Nation
 Little Black Bear First Nation
 Little Pine First Nation
 Makwa Sahgaiehcan First Nation
 Mistiwasis First Nation
 Montreal Lake First Nation
 Moosomin First Nation
 Mosquito-Grizzly Bear's Head First Nation
 Muscowpetung First Nation
 Muskeg Lake First Nation
 Muskoday First Nation
 Muskowekwan First Nation
 Nekaneet First Nation

Ocean Man First Nation
 Ochapowace First Nation
 Okanese First Nation
 One Arrow First Nation
 Onion Lake First Nation
 Pasqua First Nation #79
 Peepeekisis First Nation
 Pelican Lake First Nation
 Peter Ballantyne Cree Nation
 Pheasant Rump Nakota First Nation
 Piapot First Nation
 Poundmaker First Nation
 Red Earth First Nation
 Red Pheasant First Nation
 Sakimay First Nation
 Saulteaux First Nation
 Shoal Lake of The Cree Nation
 Star Blanket First Nation
 Sturgeon Lake First Nation
 Sweetgrass First Nation
 Thunderchild First Nation
 Wahpeton Dakota Nation
 Waterhen Lake First Nation
 Whitebear First Nation
 Whitecap Dakota/Sioux First Nation
 Witchehan Lake First Nation
 Wood Mountain First Nation
 Yellow Quill First Nation

Yukon

Kluane First Nation
 Kwanlin Dun First Nation
 Little Salmon Carmacks First Nation
 Ross River Dena Council
 Selkirk First Nation
 Teslin Tlingit Council
 Tr'ondëk Hwëch'in
 Vuntut Gwitchin First Nation

**community names are those used in the 2002 Indian Register maintained by Indian and Northern Affairs Canada and may not be the communities' preferred names/spellings.*

First Nations Regional Longitudinal
Health Survey (RHS) 2002/03



*Our Voice
Our Survey
Our Future*



Prepared by the First Nations Centre @ NAHO on behalf of the
First Nations Information Governance Committee

