

The Chief Public Health Officer's

REPORT ON THE STATE OF PUBLIC HEALTH IN CANADA

2012

*Influencing Health —
The Importance of Sex and Gender*



Canada 

Également disponible en français sous le titre : *Rapport de l'administrateur en chef de la santé publique sur l'état de la santé publique au Canada 2012 : Le sexe et le genre – Leur influence importante sur la santé*

The Chief Public Health Officer's Report on the State of Public Health in Canada, 2012: Influencing Health – The Importance of Sex and Gender is available on the Internet at the following address:

<http://publichealth.gc.ca/CPH0report>

This publication can be made available in alternative formats upon request.

© Her Majesty the Queen in Right of Canada, 2012

Cat.: HP2-10/2012E

ISSN: 1917-2656

A Message from Canada's Chief Public Health Officer



*Dr. David Butler-Jones
Chief Public Health Officer of Canada*

As a nation, we are healthy. Canada has secured significant health gains through routine immunization, smoking cessation programs, reducing and managing the incidence of infectious diseases, and investing in social infrastructure. These efforts underline why Canada is one of the best places in the world in which to live.

However, there are areas in which Canada can improve. We are seeing decreasing rates of physical activity, increasing rates of chronic diseases and obesity, and increasing rates of some sexually transmitted infections among Canadians. Canada also needs to recognize the importance of mental health and work towards improving mental health and well-being for Canadians. The good news is that all of these are manageable if we, as a society, create environments that support healthier ways of life and reduce risks to health.

We all have unique health concerns that need to be considered. Canadian men, women, boys and girls experience differences in health risks, access to and effectiveness of health services and programs, and overall health outcomes. Canada must take into account and

respond to the differences, as well as the similarities, between citizens and avoid making generalizations in order to help secure the best possible health for all Canadians.

In this report, I have decided to explore the influence of sex (i.e. biological characteristics) and gender (i.e. socio-cultural factors) on public health and the health status of Canadians. I have also used this report to highlight key areas where I believe Canada has been effective in considering the role of sex and gender on health as well as where we may want to concentrate future efforts.

Attitudes, behaviours, motivations and lifestyles, in general and as they may relate to sex and gender, often expose Canadians to differences in risks and opportunities for health and wellness. It is not as simple as looking at the differences between women and men and girls and boys. It is about the pathways on which those differences develop; how we think about masculinity and femininity and how they intersect with other determinants to shape health and well-being; and how we consider sex and

"The future has already arrived. It's just not evenly distributed yet."
– William Gibson

Message

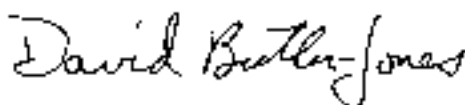
gender when we frame, plan for, implement and evaluate public health interventions.

The roles that sex and gender play in public health are relevant to everyone. We know being male or female affects our health across the lifecourse. Differences experienced by men, women, boys and girls (including individuals across the sex and gender continuums) can be attributed to biological diversity as well as the social roles and responsibilities assumed by each of us. It is clear that sex and gender are important determinants of health that interact with and affect all other determinants.

As a society we need to better understand how sex and gender interact with other determinants of health. Policy makers need to consider gender-based evidence when making decisions on programs and initiatives for more

effective and efficient health outcomes. As well, people's accounts of their experiences with public health in Canada can help illustrate why and how particular health issues affect some groups of people differently than others. This can help policy makers and planners develop programs and interventions that meet the needs of Canada's diverse population, ensuring that we do not inadvertently overlook the needs of some groups within the population.

There is a wealth of experience and knowledge in Canada, and around the world, and there are opportunities for positive change. Throughout this report, there are many examples of what is working well and the differences we can make in the lives of Canadians. Collectively we can influence our health and create a better and healthier future for all Canadians.



Dr. David Butler-Jones

Dr. David Butler-Jones is Canada's first and current Chief Public Health Officer. He heads the Public Health Agency of Canada which provides leadership on the government's efforts to protect and promote the health and safety of Canadians. He has worked in many parts of Canada in both Public Health and Clinical Medicine, and has consulted in a number of other countries. Dr. Butler-Jones has taught at both the undergraduate and graduate levels and has been involved as a researcher in a broad range of public health issues. He is a Professor in the Faculty of Medicine at the University of Manitoba as well as a Clinical Professor with the Department of Community Health and Epidemiology at the University of Saskatchewan's College of Medicine. From 1995 to 2002, Dr. Butler-Jones was Chief Medical Health Officer and Executive Director of the Population Health and Primary Health Services Branches for the Province of Saskatchewan. Dr. Butler-Jones has served with a number of organizations including as: President of the Canadian Public Health Association; Vice President of the American Public Health Association; Chair of the Canadian Roundtable on Health and Climate Change; International Regent on the board of the American College of Preventive Medicine; Member of the Governing Council for the Canadian Population Health Initiative; Chair of the National Coalition on Enhancing Preventive Practices of Health Professionals; and Co-Chair of the Canadian Coalition for Public Health in the 21st Century. In recognition of his service in the field of public health, York University's Faculty of Health bestowed on Dr. Butler-Jones an honorary Doctor of Laws degree. In 2010, Dr. Butler-Jones was the recipient of the Robert Davies Defries award, the highest honour presented by the Canadian Public Health Association, recognizing outstanding contributions in the field of public health.

Acknowledgements

Many individuals and organizations have contributed to the development of *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2012: Influencing Health – The Importance of Sex and Gender*.

I would like to express my appreciation to the consultants who provided invaluable advice, strategic guidance and expertise:

- The Honourable Gary Filmon, PC, OC, OM, Corporate Director, The Exchange Group;
- John Frank, MD, Director, Scottish Collaboration for Public Health Research and Policy; Chair, Public Health Research and Policy, University of Edinburgh; Professor Emeritus, Dalla Lana School of Public Health, University of Toronto;
- David Mowat, MPH, FRCPC, FFPH, Medical Officer of Health, Region of Peel, Ontario;
- Peter Glynn, PhD, Health Systems Consultant; Associate Professor (Adjunct), Department of Community Health and Epidemiology, Queen's University;
- Daryl Pullman, PhD, Professor of Medical Ethics, Division of Community Health and Humanities, Memorial University;
- Jeff Reading, MSc, PhD, FCAHS, Professor and Director, School of Public Health and Social Policy, Faculty of Human and Social Development and Centre for Aboriginal Health Research, University of Victoria;
- Cornelia Wieman, MSc, MD, FRCPC, Consultant Psychiatrist; and
- Brenda Zimmerman, MBA, PhD, Director, Health Industry Management Program; Associate Professor of Strategy/Policy, Schulich School of Business, York University.

I would like to thank the many individuals and groups within the Public Health Agency of Canada for their contribution. Specifically, I would like to recognize the dedicated efforts of the CPHO Reports Unit, Office of Public Health Practice: Sarah Bernier, Jane Boswell-Purdy, Suzanne A. Boucher, Paula Carty, Lindsay Fitzpatrick, Maureen Hartigan, Sean Hockin, Deborah Jordan, Jordan Kelly, Russell Mawby, Erin L. Schock, Jennifer Lynn Scott, Melannie Smith, Andrea Sonkodi and Crystal Stroud for all their effort throughout the process of delivering this report.

As well, I would like to recognize the contributions made by the 2011/12 Core Advisory Group: Cate Harrington, Mana Herel, Semaneh Jemere, Erin Kingdom, Leonora Montuoro, Emma Moore, Howard Morrison, Roslyn Nudell, Catherine Rotor, Jan Trumble Waddell, Manon Turcotte, Emily Weir, Lindsey Williams and Vance White.

I would also like to acknowledge the contributions of the following external reviewers and organizations:

- André P. Grace, MEd, PhD, Killam Research Professor and Director of the Institute for Sexual Minority Studies and Services, Faculty of Education, University of Alberta;
- David Hart, PhD, Professor, McCaig Institute for Bone and Joint Health, University of Calgary;
- Marlene M. Moretti, MD, CIHR Senior Research Chair, Professor, Department of Psychology, Simon Fraser University;
- Kate Shannon, MPH, PhD, Assistant Professor, Department of Medicine, University of British Columbia and Director, Gender and Sexual Health Initiative, BC Centre for Excellence in HIV/AIDS;
- Jeannie Shoveller, PhD, Professor, School of Population and Health, University of British Columbia; and
- Donna E. Stewart, MD, University Professor, Faculty of Medicine, University of Toronto; Director, Women's Health and Senior Scientist, University Health Network, Toronto; Institutional Advisory Board Member, Institute of Gender and Health, Canadian Institute of Health Research.

In addition I would also like to recognize the following organizations for their contributions to this Report:

- Aboriginal Nurses Association of Canada;
- Assembly of First Nations;
- Congress of Aboriginal Peoples;
- Inuit Tapiriit Kanatami;
- Mental Health Commission of Canada;
- Métis National Council;
- National Aboriginal Health Organization;
- National Collaborating Centre for Aboriginal Health;
- Native Women's Association of Canada; and
- Pauktuutit Inuit Women of Canada.

Acknowledgements

Special thanks to those from the following federal government departments, agencies and programs who collaborated with us on this publication:

- Aboriginal Affairs and Northern Development Canada;
- Canada Mortgage and Housing Corporation;
- Canadian Heritage (Sport Canada);
- Canadian Institutes of Health Research;
- Health Canada;
- Human Resources and Skills Development Canada;
- Privy Council Office; and
- Status of Women Canada.

Table of Contents

A Message from Canada's Chief Public Health Officer	i
Acknowledgements	iii
Executive Summary	1
Introduction	7
Why a report on the state of public health in Canada?	7
The goals of the report	8
What this report is about	8
What does the report cover?	9
 Part I: The State of Public Health in Canada	
Chapter 1: The State of Public Health in Canada.....	13
Who we are.....	13
Our health	14
Factors influencing health.....	20
Summary	32
 Part II: Sex, Gender and the Health of Canadians	
Chapter 2: Sex, Gender and Public Health	35
Clarifying sex and gender	35
Why sex and gender matter to public health.....	36
Sex, gender and the broader determinants of health	37
Sex- and gender-based analysis: a tool.....	38
Summary	39
Chapter 3: Sex, Gender and Health Outcomes	41
Physical Health.....	41
Mental Health	42
Sexual Health	46
Summary	49
Chapter 4: Incorporating Sex and Gender into Health Interventions	51
Section One: Sex and gender and public health interventions.....	51
Integrating sex and gender into health research	51
Integrating sex and gender in public health practice	55

Table of Contents

Section Two: Sex and gender in select health outcomes	57
Sex, gender and physical health	57
Sex, gender and mental health and well-being.....	61
Sex, gender, healthy relationships and sexual health	70
Section Three: Sex and gender and socio-economic determinants.....	80
Summary	87

Part III: A Path Forward

Chapter 5: Sex, Gender and Public Health – A Path Forward.....	91
A time to act	91
Appendix A: List of Acronyms.....	94
Appendix B: Body mass index cut-points	95
Appendix C: Indicators of Our Health and Factors Influencing Our Health	97
Appendix D: Definitions and Data Sources for Indicators.....	101
References.....	113

Figures

Figure 1.1 Population distribution by age group, Canada, 1976, 2011 and 2036	13
Figure 1.2 Life expectancy at birth by sex and neighbourhood income quintiles, Canada, 2005–2007	14
Figure 1.3 Excellent or very good self-perceived health and mental health by age group, Canada, 2010	14
Figure 1.4 Proportion of Canadians reporting one or more chronic health conditions by age group, Canada, 2010.....	16
Figure 1.5 Self-reported back problems by sex and age group, Canada, 2010	16
Figure 1.6 Self-reported high blood pressure by sex, origin and select age groups, Canada, 2010	17
Figure 1.7 Self-reported mood disorder by sex and age group, Canada, 2010	18
Figure 1.8 Number of deaths by select causes and sex, Canada, 2008	19
Figure 1.9 Age-standardized mortality rate by sex and select causes of death, Canada, 2008	20
Figure 1.10 Age-standardized potential years of life lost by sex and select causes of death, Canada, 2008.....	21
Figure 1.11 High school non-completion rate by sex, population aged 20 to 24 years, Canada, 1990/1991 to 2010/2011.....	21
Figure 1.12 Unemployment rate by select age groups and sex, Canada, 1990 to 2011.....	22

Table of Contents

Figure 1.13 Average after-tax income for economic families (two or more persons), 2010 constant dollars, Canada, 1976 to 2009.....	23
Figure 1.14 Population living in low income by sex, Canada, 1976 to 2009.....	24
Figure 1.15 Current smokers by sex and age group, Canada, 1999 and 2010.....	24
Figure 1.16 Frequent heavy drinking by sex and age group, Canada, 2010.....	25
Figure 1.17 Cannabis use in the past 12 months by sex and age group, Canada, 2010.....	26
Figure 1.18 Age-specific fertility rate by select age groups, Canada, 1960 to 2009.....	27
Figure 1.19 Sexually transmitted infection rates by sex and select age groups, Canada, 2009.....	28
Figure 1.20 Body mass index by sex and age group, Canada, 2007–2009.....	30
Figure 1.21 Consulting a doctor by origin and sex, Canada, 2010.....	30
Figure 1.22 Dental and eye doctor visits in the past 24 months by sex and age group, Canada, 2010.....	31

Tables

Table 1.1 Our health status.....	15
Table B.1 Body mass index for children and youth aged 2 to 17 years.....	95
Table B.2 Body mass index for adults aged 18 years and older.....	96
Table C.1 Who we are.....	97
Table C.2 Our health status.....	98
Table C.3 Factors influencing our health.....	99
Table D.1 Low income cut offs after tax, Canada, 2009.....	108

Textboxes

The Role of Canada's Chief Public Health Officer.....	9
The Chief Public Health Officer's Report on the State of Public Health in Canada.....	10
Incorporating sex and gender into research.....	52
The Health Portfolio's Sex and Gender-Based Analysis Policy.....	53
Approaches to implementing Aboriginal sex- and gender-based analysis.....	54
Changing perspectives with a sex- and gender lens on a public health issue: the HPV example.....	56
Healthy Dads, Healthy Kids.....	58
Canadian Association for the Advancement of Women and Sport and Physical Activity.....	59
Targeting women: The Heart Truth campaign.....	61
Australia's Men's Sheds program.....	67

Table of Contents

Addressing youth and violence.....	71
Healthy Relationships Curriculum – Men for Change.....	72
Raising awareness about age, gender and sexual health	76
Breaking down barriers: sexual minority youth and education	78
Increasing access to sexual health care: the Immigrant Women’s Health Clinic.....	79
Supporting Aboriginal fathers	85
Acknowledging the importance of fathers’ involvement.....	86

Executive Summary

This is the Chief Public Health Officer's fifth annual report on the state of public health in Canada. The report explores sex (i.e. biological characteristics) and gender (i.e. socio-cultural factors) and their connections with public health and the health status of Canadians. It examines how sex and gender interact with each other and with other determinants of health to influence health behaviours and symptoms, treatment effects and access to care. From this examination, the report outlines interventions, programs and policies that have maintained and improved the current and future health and well-being of Canadians. It also identifies priority areas for action where Canada as a society can better incorporate sex- and gender-related issues in public health resulting in reduced health inequalities.

The State of Public Health in Canada

In 2011, the Canadian population was about 33.5 million, almost equally divided between males and females. While the proportion of males to females varies somewhat by age group, from the age of 65 years onward the proportion of females exceeds that of males.

The life expectancy of Canadians has increased dramatically over the past century. A male born in Canada today can expect to live about 79 years and a female about 83 years. While Canadian women have historically experienced greater longevity, the gap in life expectancy at birth between Canadian men and women has decreased.

Many Canadians at every age consider themselves healthy. The majority of Canadians 12 years and older reported their health as either excellent (22%) or very good (38%), while even more reported their mental health as excellent (37%) or very good (37%). However, not all years are spent in good health. The health-adjusted life expectancy (HALE) from 2004 to 2006 shows that males spent approximately 69.6 years in good health whereas women spent about 72.1 years in good health.

In 2010, 55% of Canadians aged 12 years and older reported living with at least one chronic health condition, the most common being back problems (19%), high blood pressure (18%) and arthritis (16%). Back problems, including scoliosis, sciatica and herniated discs, can result in physical pain and in some cases be disabling. This can also be the case for any one of the 100 or so different

types of arthritis that affect mainly women (61%). Almost one-quarter (24%) of Canadians 30 years and older reported having high blood pressure, a major contributor to heart disease and stroke, and the proportions increased with age to 51% among those 65 years and older.

Some Canadians also live with some form of mental illness. In 2010, mood disorders, such as depression and bipolar disorder, were the most commonly reported mental health conditions affecting 6.9% of Canadians 15 years and older (8.2% of women and 5.0% of men). The highest reported rates of mood disorder were among older adults aged 55 to 64 years (8.3%) and Aboriginal people not living on a reserve (11.7%).

Economic and social factors such as education, employment and income have a direct bearing on health. Between the 1990/1991 and 2010/2011 school years, the percentage of Canadians between 20 and 24 years who had completed high school increased from 81% to 90% (92% of women and 89% of men). The percentage of Canadians between 25 and 34 years who completed a post-secondary education also increased during the same period, from 44% to 72% for women and from 45% to 64% for men. In 2011, the unemployment rate for young Canadians between 15 and 24 years was 14.2%, with a difference between males (15.9%) and females (12.4%). Among Canadians aged 25 to 54 years, 6.2% were unemployed with little difference between men and women. In 2010, 32% of the working population between 30 and 54 years self-reported having work-related stress, with similar rates among both men and women.

Tobacco, alcohol and cannabis are the substances most frequently used by Canadians 15 years and older. While the overall smoking rate in Canada has been declining, 17% of Canadians reported smoking in 2010 with males in all age groups consistently reporting higher rates of smoking compared to females. In the same year, 77% had consumed alcohol (47% of whom consumed it once a week or more – 54% of males and 40% of females), whereas one-in-ten reported using cannabis in the past year (15% of males and 7% of females). Young adults between 20 and 29 years have the highest smoking, drinking and cannabis rates of all age groups in Canada.

Over the past 15 years, reported rates of sexually transmitted infections (STIs) have increased among the

Executive Summary

overall population. Young Canadians under the age of 30 years continue to experience the highest reported rates of chlamydia, gonorrhea and infectious syphilis. In 2008, 74% of all new positive cases of HIV reported were among men, with the highest rates among men between 40 and 49 years of age (32%). Women represent an increasing proportion of those with positive HIV test reports in Canada, and represented 26% of all new cases reported in 2008. Women between 30 and 39 years account for 35% of reported HIV infections among all females.

People who are physically active are at a lower risk of poor health. Less than one-fifth of adults and one-tenth of children met the World Health Organization and Canadian guidelines for physical activity in 2007–2009. Less healthy eating, including over-consumption, combined with inadequate physical activity, can lead to increased body weights, and Canadians are experiencing increasingly high rates of obesity and overweight. In 2007–2009, 24% of Canadian adults were considered to be obese and 37% overweight, an increase from the reported 12% and 32%, respectively, in 1978–1979. For both adults and children, a larger percentage of males than females are either overweight or obese.

Sex, Gender and Public Health

While there are no single agreed-upon definitions, “sex” typically refers to the biological and physiological characteristics that distinguish females and males, and “gender” is associated with the socio-cultural factors that societies ascribe to females and males. However, as opposed to the traditional binary view of men/women and male/female, many of the attributes of sex and gender can be described on continuums to account for the ranges of characteristics and behaviours that exist.

Public health serves to support, promote and protect the health of all Canadians. Sex and gender are critically important to all areas of public health – research, programs and policies. The interrelationships between sex, gender and the broader determinants of health influence risks, opportunities, behaviours and outcomes of men, women, boys and girls differently across the lifecourse.

Applying a sex and gender lens to health identifies patterns and gaps in how both can influence health status. Sex- and gender-based analysis (SGBA) is a

systematic approach to research, policies and programs that explores biological (sex-based) and socio-cultural (gender-based) similarities and differences between women and men, boys and girls. Doing so helps to ensure that interventions are effective and inclusive.

Sex, Gender and Health Outcomes

Biological and socially constructed differences between men and women interact to affect individual susceptibility to particular health risks, health-seeking behaviours, outcomes and treatments. By examining health outcomes in the areas of physical health (e.g. hypertension), mental health (e.g. depression) and sexual health (e.g. STIs), it can be seen how and why these differences occur in terms of the influence of sex and gender.

Physiological and biological changes that occur across the lifecourse affect an individual's likelihood of particular health outcomes as well as their responses to developmental stages and life events. Differences in rates of hypertension (high blood pressure) and depression in men and women suggest that sex hormones may play a significant role in these rates. With increasing androgen levels (i.e. testosterone) during puberty, blood pressure is higher in boys than in girls. Conversely, women may be protected from high blood pressure by female sex hormones (i.e. estrogens). Between puberty and menopause, rates of depression in women are two to three times higher than in men. When levels of estrogens decrease after menopause, hypertension prevalence increases in women while rates of depression begin to decrease. Dramatic hormone changes during pregnancy and postnatally can also cause forms of hypertension and can increase the risk of depression among women.

Biological differences between men and women can also mean that their bodies respond differently to various bacteria and organisms. For example, women's anatomy makes them more susceptible to acquiring STIs through some forms of sexual contact. Sex also influences treatment and medication responses (e.g. antihypertensive medications are significantly less likely to control women's blood pressure) as well as self-reported signs and symptoms (e.g. depressed women experience more feelings of helplessness, worthlessness

and persistent sad moods whereas men experience discouragement, anger and irritability).

Gender plays a key role in the health-seeking behaviours of men and women. Women generally access the health care system more often than do men and therefore are more likely to be routinely screened, tested and treated for health conditions such as hypertension, depression and STIs. Attitudes and misinformation surrounding STI testing procedures, the non-detection of symptoms, questions of confidentiality, and stigma can act as deterrents to testing for both males and females of all ages. The socially constructed concept that men must be tough and strong can foster silence among some men which may prevent accurate diagnosis and treatment of depression. Socially constructed gender roles may also influence different sources of stress among women and men, increasing their risk for hypertension or poor mental health (i.e. depression). In addition, power relations within sexual encounters may affect decisions and the ability to negotiate the use of protection (e.g. refusal to use condoms) influencing the risk, incidence and outcomes of STIs.

Incorporating Sex and Gender into Health Interventions

Broad and targeted Canadian and international interventions – research, programs, initiatives and policies – that have addressed health issues and/or risk factors and consider and/or incorporate sex and gender into their design or execution can make a difference to health. A sex- and gender-based approach is part of systematically planned interventions that are consistent with population health approaches.

Canada embarked on its commitment to sex- and gender-based work when evidence surfaced that pointed to gaps and inequalities created by not addressing research, programs and policies in the context of sex and gender. By ratifying the Beijing Declaration, Canada agreed to promote gender mainstreaming in all relevant policies and programs such as the Health Portfolio's Sex and Gender-Based Analysis Policy. Embracing the inter-relationships between sex, gender and the broader determinants of health needs to become part of mainstream practice in public health.

Sex, gender and physical health

Approaches to preventing and managing the onset of chronic disease must reflect differences among men, women, boys and girls so as to most effectively address and/or avoid adverse health outcomes. Being overweight and/or obese can influence the development of many chronic diseases. As such, it is important to address unhealthy weights as early as possible, and school-based, gender-focused health promotion interventions are ideally positioned to address the gender differences that occur in the physical activity and food and beverage consumption behaviours of boys and girls. Gendered experiences, stereotypes and societal expectations can influence approaches to physical activity. Perceptions of girls' and boys' sports and activities can influence participation across the lifecourse. Communities across Canada offer programs that educate and encourage women and girls in sports and challenge gender stereotypes and homophobia.

The perception of cardiovascular disease (CVD) as a "man's disease" has affected the cardiac health of women, who have been under-represented in cardiovascular research, treatment and health prevention practices. CVD has only recently been recognized as one of the leading causes of death and ill health among Canadian women. Whereas factors such as sex affect symptom presentation and disease identification, gender can influence health care seeking behaviours as well as health practitioners' reactions to symptoms. Heart health organizations in Canada are targeting women in social marketing, public awareness and health promotion campaigns to encourage them to learn about cardiac health.

Sex, gender and mental health

In Canada's first mental health strategy, gender and sexuality are considered priority areas in addressing mental health disparities. Addressing mental health with a sex and gender lens requires increasing understanding, providing sex and gender sensitive services, reducing women's risk factors and improving capacity of LGBTQ organizations to address stigma and offer support. Gender roles, life experiences and event-specific risk factors are often cited as contributors to common mental disorders that disproportionately affect women. The reproductive health of women, particularly postpartum depression

Executive Summary

(PPD), may have long-term health outcomes for mothers and their children. Addressing the outcomes of maternal depression involves a greater understanding of the complex interactions between mental health and other factors. Efforts to increase community awareness and understanding of PPD as well as supports to help manage it are underway. Systematic reviews and evaluations show that positive outcomes for a mother's well-being and infant care are achieved through programs that offer individual support to help parents make the transition into parenthood. Also increasingly programs are recognizing the importance of men's experiences on their partners' pregnancies and mental health, as well as men's own experiences influence their own mental health during fatherhood. Identifying paternal postpartum is lagging due to the tools used to routinely measure effects in women need to adapt to better reflect men's symptomatic criteria. Additional research is needed to expand the focus of postpartum to new fathers from various cultural and socio-economic backgrounds.

Recent research and programs reveal that men are at risk for a range of mental health problems, which are often underdiagnosed and under-reported. Four out of five suicides are completed by men. Addressing issues such as suicide through prevention practices is challenged by a number of factors including gender differences in suicide and suicide ideation. Factors to consider when addressing the mental health of men and boys include the non-detection of male clinical depressive symptoms, a social inability to show weakness, low mental health literacy and the use of risky behaviours such as substance use and violence that can mask mental health problems. Health-promoting strategies for men in community settings are growing. The strategies and programs such as Men's Sheds have been shown to be effective in addressing men's health issues, while allowing social networking and the development of practical skills. Mental health practices found that more men would seek help for mental health issues if the programs suited those with traditional male gender roles. Broad-based media campaigns that challenge male norms must be intensive and target at-risk populations. In addition, some jurisdictions have developed suicide prevention strategies that include broad to targeted initiatives.

Mental health stigma continues to be a barrier to how people seek and acquire treatment for mental health disorders. A population health approach is necessary to address gender-specific risk factors as well as to improve access and delivery of mental health policies and programs. Early education and increasing awareness of mental health disorders is important in challenging misconceptions about mental illness.

Sex, gender, healthy relationships and sexual health

Healthy sexuality involves acquiring knowledge, skills and behaviours for positive sexual and reproductive health as well as options to avoid negative outcomes (e.g. STIs and unplanned pregnancies). Interventions that promote healthy relationships should be delivered as early as possible so that young men and women learn to value and understand the importance of respect, equality and harmony with relationships. To be effective, programs that target at-risk youth need to address a range of individual experiences as well as account for other factors such as gender, culture and sexual orientation. Communities and schools also play an important role in integrating and increasing the scope of interventions that help young people develop healthy relationships including sexual relationships. Interventions that have shown promise in supporting the prevention of intimate partner violence are those that provide the tools to ensure the safety of victims and potential victims and that address violence in a broader context of equality, rights and responsibility. Healthy relationships focused on the concerns of sexual and gender minorities can also challenge heteronormative (the view of heterosexuality as the normal or preferred sexual orientation) understandings of relationships, opening up possibilities for expanding sexual health education to address what constitutes healthy relationships for sexual and gender minority youth and adults.

Healthy relationships rely on having positive perceptions of self-image and sexual health. Repeated exposure to sexualized images can have negative effects on the cognitive and emotional development of girls and boys leading to poor body image, low self-esteem, eating disorders and depression. School-based interventions can

Executive Summary

reach a large number of children and youth; they have been shown to reduce risks of HIV and AIDS, other STIs and unplanned pregnancies over the long term. However, barriers to effective school-based sexual health education programs include allotted time or teaching materials as well as the comfort level of students, teachers, families and the community at large. Practices that show promise include those that address sexual risk and protective factors as well as non-sexual factors, programs that increase the knowledge and skills of parents and community members who interact with youth, and programs that provide access to health services for all youth and include diversity.

One area often overlooked is the sexual health practices of older adults. Despite an increase in cases of STIs among older adults, interventions designed to prevent STIs among this population are limited. Practicing safer sexual behaviours can depend on having access to relevant health care and information or being able to comfortably discuss practices with an available health care practitioner. Stigma associated with sexual health topics, in particular STIs, is a significant barrier to testing, early diagnosis, accessing treatment and support for all ages, genders and sexual orientations. Social marketing campaigns and sexual educational programs can be used to proactively address negative perceptions of sexual health, gender and age and the changing social trends and sexual practices of older adults.

Sex, gender and socio-economic determinants

Looking at sex and gender by selected health outcomes is only part of the broader story, as there are many cumulative socio-economic factors that directly or indirectly influence health across the lifecourse. Examples of socio-economic determinants, work, education and parenting were selected for this report because they influence other factors such as income. The effect of gender on how occupational health issues are experienced, expressed, defined and addressed can help identify risk factors for both women and men. Gender-based stereotyping (e.g. who does what job, the societal value attached to particular jobs, and associated risks of the work) can increase health risks for both men and women. Risk of injury and disease can be further confounded by biology, workplace seniority, social status,

age, tasks, techniques and external life experiences. Being able to identify and track workplace injuries, illness and pain relies on having a health and safety program in place that monitors activities. The lack of such a program and other factors (e.g. reluctance of the employee or employer to report problems) means that workplace health outcomes are un- or under-reported. Workplace interventions need to acknowledge the realities of work such as risk, location and the role of confounding factors (e.g. environment, assumptions). Challenging gender stereotypes and addressing gender bias is necessary to attract and retain individuals in non-traditional fields such as nursing. A comprehensive gender analysis of workplace experiences is necessary to address the work-life issues relevant to retaining male and female workers.

Many Canadians also participate in unpaid and informal work such as informal care. More women than men provide some type of informal care, and women spend more than double the number of hours providing informal care. The proportion of male caregivers has been increasing, with men often caring more for partners with mental health issues and dementia than they had in the past. Men in caregiving roles have fewer opportunities for community support and less social services. Research on programs to support male caregivers is limited given their lack of recognition in this role. Several programs in Canada that support caregivers vary from financial support (e.g. wages, tax relief, and labour policies) to community supports and services. Results of a meta-analysis of caregiver interventions determined that supportive interventions were effective but that the effectiveness was dependent on other factors including gender and ethnicity as well as program deliverables (e.g. duration, setting).

Education is an underlying determinant for many health outcomes. As with other social determinants, sex and gender make a difference in how education is approached and used and on the resulting health effects over the long term. The number of Canadians who successfully complete high school and seek some level of post-secondary education, training or certification has increased over the last two decades. Despite overall educational successes, questions remain as to why boys are not faring as well as girls in school. Applying a sex and gender lens to educational attainment suggests looking at the criteria used to measure success and checking for possible gender

Executive Summary

bias in this measurement; the factors that encourage in-school participation and academic practices and the suitability of activities for gender and diversity; gender roles and expectations after graduation; perceptions of success; and teaching methods and suitability to learning styles by gender and behaviour and management. Strong role models at home are important for all children to achieve academically and socially, and for boys in particular male role models can positively influence their academic performance.

The role that fathers play in parenting and building healthy relationships should not be under-estimated. Where fathers are positively involved, outcomes in their children's cognitive, emotional, relational and physical well-being have been reported. Canada, as a society, has made some progress in supporting research and/or programs on fatherhood. Interventions that target fathers are continuing to grow and recognize the importance of fathers to the health and well-being of Canadians. However, more can be done to see that knowledge about father involvement is disseminated to professionals and policymakers who wish to support families and healthy child development.

Sex, Gender and Public Health – A Path Forward

The majority of Canadians enjoy good to excellent physical and mental health, and are living longer, healthier lives. However, disparities do exist in the health of Canadian women, men, girls and boys. These require a better understanding of the many factors that contribute to this difference. Since an individual's sex and gender play such a complex and crucial role in influencing health behaviours, health outcomes and well-being, it is essential that they be considered in the development, implementation and evaluation of research, programs and policies.

Given their extensive impact on every individual, there is no "one size fits all" solution to address sex- and gender-related health issues. Therefore, a broad, constantly evolving understanding of sex and gender as key determinants of health is essential.

Public health in Canada is a shared responsibility. As a society, we must continue to understand the importance of efforts to promote health and well-being, and where possible, prevent disease and illness. Actions to address the health and well-being of Canadians must be co-ordinated and multi-pronged and take into account Canada's extensive geography and diversity. Actions must also be sustainable and not limited to one-time efforts with short-term impacts. Moving forward requires building on existing initiatives and measuring their impact so we are better able to effect change. Understanding what makes some programs and initiatives work and adapting them to fit the diversity of Canadians is the challenge we must face if we want to continue to improve the health of Canadians. Collectively, Canada has the capacity to understand and address the specific issues of our diverse population to ensure that all Canadians have the opportunity to live as healthy a life as possible.

Introduction

This report, the Chief Public Health Officer's fifth on the state of public health in Canada, focuses on how sex and gender influence public health and the health status of Canadians.

Why a report on the state of public health in Canada?

Canada's Chief Public Health Officer (CPHO) has a legislated responsibility to report annually to the Minister of Health and to Parliament on the state of public health.¹ (See the textbox "The Chief Public Health Officer's Report on the State of Public Health in Canada.") The Public Health Agency of Canada (PHAC) and the position of Canada's CPHO were established in 2004 to help protect and improve the health and safety of all Canadians.¹⁻³ In 2006, the *Public Health Agency of Canada Act* confirmed the Agency as a legal entity and further clarified the roles of the CPHO and the Agency.¹ (See the textbox "The role of Canada's Chief Public Health Officer.")

Public health is about optimizing, promoting and supporting the health of all Canadians through programs, services and policies.^{5, 6} It involves collaborating across

many sectors of society to identify and reduce stressors, risk-taking and other threats to health. By helping people have healthier, longer lives, the public health system can relieve some of the pressures on hospitals and the acute health care system.^{5, 7-9}

Public health is defined as the organized efforts of society to keep people healthy and prevent injury, illness and premature death. It is the combination of programs, services and policies that protect and promote health.⁴

Public health also involves influencing the factors inside and outside the health system that impact our health. Commonly referred to as the determinants of health, these factors include income and social status, social support networks, education and literacy, employment and working conditions, social environments, physical environments, personal health practices and coping skills, healthy child development, biology and genetic endowment, health services, gender and culture, all of which affect Canadians throughout their lifecourse.^{10, 11}



Introduction

The lifecourse is a path that an individual follows from birth to death.¹⁴ This path can change or evolve at any life stage (e.g. childhood, adolescence, young adulthood, mid-adulthood and later life) and varies from person to person depending on biological, behavioural, psychological and societal factors that interact to influence health outcomes of men, women, boys and girls.^{14, 15} Life events, cultural norms and social roles and experiences also interact with different life stages resulting in various effects and outcomes.^{16, 17} A lifecourse approach helps identify health trends and the links between exposures and outcomes. Applying a sex and gender lens to health can help identify the patterns and gaps in how both sex and gender influence people's health status.¹⁸ Interventions, including public policies, can then be targeted to address these trends and links to achieve optimal population health and well-being.^{14, 19-21}

The lifecourse model is a way to study the impact of physical and social exposures at various stages in life – from the prenatal period through to later life – on the health of people and the overall population.^{12, 13}

The goals of the report

The CPHO's reports are intended to highlight specific public health issues that the CPHO has determined warrant further discussion and action in Canada. They also inform Canadians about the factors that contribute to improving their health. These reports do not represent Government of Canada policy; nor are they limited to reporting on federal or provincial/territorial activities. As such, they are not intended to be frameworks for policy but rather a reflection of the CPHO's perspective, based on evidence, on the state of public health across the country. This particular report illustrates how sex and gender interact with each other and with other determinants of health to influence health, health behaviours and outcomes among Canadians; it outlines interventions, programs and policies that have maintained and improved the current and future health and well-being of Canadians; and it identifies priority areas for action

where Canada as a society can better incorporate sex- and gender in public health to influence the effectiveness of health promotion and disease prevention efforts.

What this report is about

This report investigates how sex and gender affect the health of Canadians and highlights why they are relevant to all Canadians, regardless of their age, income or cultural background. It also considers the relevance of applying a sex and gender lens to research, programs, initiatives and policies that aim to achieve better health outcomes for all Canadians.

In developing this report, questions arose about whether there should be separate reports for women's and for men's health. However, it was felt that separate reports would be divisive and exclusionary. Instead, this report draws attention to sex- and gender-rooted health issues and health inequalities. This report is not meant to be a compendium of all issues related to sex and gender. Rather, the intention is to highlight examples of the progress Canada has made and the challenges that lie ahead in incorporating sex and gender into the development, implementation and evaluation of research, policies and programs in public health.

For the purposes of this report, "sex" refers to the biological characteristics (i.e. anatomy and physiology) that distinguish females and males, and "gender" to socially and culturally constructed roles, relationships, norms, beliefs, attitudes, personality traits, behaviours and values that society ascribes to men, women and gender minority individuals on a differential basis.^{22, 216} However, it should be noted that there are no universally accepted definitions or easy separation of the terms. The Canadian Institutes of Health Research's Institute of Gender and Health makes a social/biological distinction between gender and sex with the caveat that they are inter-related and potentially inseparable and that the definitions of sex and gender are evolving.²³ Readers of the Report should keep in mind that the terms "male," "female," "men" and "women" are used interchangeably as appropriate in each section.

The Role of Canada's Chief Public Health Officer

The Chief Public Health Officer (CPHO):

- is the deputy head responsible for the Public Health Agency of Canada (PHAC), reporting to the Minister of Health;
- is the federal government's lead public health professional, providing advice to the Minister of Health and the Government of Canada on health issues;
- manages PHAC's day-to-day activities;
- works with other governments, jurisdictions, agencies, organizations and countries on public health matters;
- speaks to Canadians, health professionals and stakeholders about issues affecting the population's health;
- is required by law to report annually to the Government of Canada on the state of public health in Canada; and
- can report on any public health issue as needed.³

In a public health emergency, such as an infectious disease outbreak or natural disaster, the CPHO:

- briefs and advises Canada's Minister of Health and others as appropriate;
- works with counterparts in other departments, jurisdictions and countries, as well as with experts and elected officials, to communicate with Canadians about how to protect themselves and their families;
- delivers public health information to Canadians via media appearances, public statements, updates to the PHAC website, and columns and public advertisements in daily and community newspapers;
- provides direction to PHAC staff, including medical professionals, scientists and epidemiologists, as they plan and respond to the emergency;
- leads daily national teleconferences, as appropriate, with federal government scientists and experts to share information and plan outbreak responses; and
- co-ordinates with jurisdictions through regular teleconferences with Canada's provincial and territorial Chief Medical Officers of Health and others.³

What does the report cover?

This Report is organized into three distinct sections: The State of Public Health in Canada; Sex, Gender and the Health of Canadians; and A Path Forward.

The first part of the report describes the health and well-being of Canadians. Chapter 1, "The State of Public Health in Canada," presents a demographic profile of the Canadian population and examines the current physical, mental health and sexual health of Canadians. It looks at socio-economic determinants of health and their relationship with health status and well-being. It also describes risk-taking behaviours, including risky sexual behaviours and substance use and abuse. Where possible, data is presented to illustrate the similarities and/or differences in health between individuals in Canada. This section is not intended to provide an analysis on how sex

and gender impact health outcomes. Instead, it presents a high-level "snapshot" of health and well-being in Canada.

The second part of the report examines sex and gender and how they influence health and well-being of Canadians. Chapter 2, "Sex, Gender and Public Health," introduces the concepts of sex and gender and how they are linked to health behaviours and outcomes, both directly and through their connection to the determinants of health. It also briefly explores sex- and gender-based analysis as a tool for analyzing how both sex and gender influence health. Chapter 3, "Sex, Gender and Health Outcomes," uses specific examples in the areas of physical, mental and sexual health to illustrate how sex and gender impact health outcomes, including symptoms, treatment effects and access to care. It also explores the reasons why differences occur. Chapter 4, "Incorporating Sex and Gender into Health Interventions," examines how sex and gender can be incorporated into the development

Introduction

of research, programs, initiatives and policies that influence health and well-being. The chapter provides examples of interventions, and discusses their efficacy in addressing sex and gender in health.

The third part of the report focuses on how Canada, as a society, can improve the health and well-being of Canadians. Chapter 5, “Sex, Gender and Public Health – A Path Forward,” summarizes the findings from preceding chapters, highlights priority areas for action, proposes recommendations and identifies strategies to better incorporate sex and gender into public health.

The Chief Public Health Officer's Report on the State of Public Health in Canada

As detailed in the *Public Health Agency of Canada Act*, the Chief Public Health Officer (CPHO) is required to submit an annual report on the state of public health in Canada to the Minister of Health within six months of the end of each fiscal year. Upon receipt, the Minister shall lay the report before Parliament on any of the first 15 days on which the House is sitting.¹

The *PHAC Act* specifies that the CPHO:

- may prepare and publish reports on any issue related to public health;
- may, in any report, refer to public health problems and their causes, as well as any measures that may, in his or her opinion, be effective in preventing or resolving those problems; and
- must set out the source of the data and information used in the preparation of the report and methodology employed to arrive at the report's findings, conclusions or recommendations.¹

The inaugural report, *The CPHO's Report on the State of Public Health in Canada, 2008: Addressing Health Inequalities*, provided the CPHO with the opportunity to present an overview of public health in Canada, including the health status of Canadians, as well as the country's successes and ongoing challenges in reducing health inequalities.²⁴

The CPHO's Report on the State of Public Health in Canada, 2009: Growing Up Well – Priorities for a Healthy Future highlighted the health status of children ages 0 to 11 years, and focused on the importance of the early years on the long-term health of individuals and populations.¹⁵

The CPHO's Report on the State of Public Health in Canada, 2010: Growing Older – Adding Life to Years focused on the health status of Canada's seniors ages 65 years and over. The report highlighted the fact that Canada's seniors are living longer and that many are experiencing good overall health. The report described physical and mental health, economic and social well-being, access to care and services, and abuse and neglect as some of the main areas of seniors' health and well-being.²⁵

The CPHO's Report on the State of Public Health in Canada, 2011: Youth and Young Adults – Life in Transition focused on the health status of Canada's youth (12 to 19 years) and young adults (20 to 29 years). The report identified factors that influence their health and how we can create the conditions necessary for young Canadians to transition into adulthood. The report highlighted this period of the lifecourse as it is a time of significant transition, where many life-long attitudes and behaviours are established, setting the stage for future health and well-being.²⁰



PART I: THE STATE OF PUBLIC HEALTH IN CANADA

The State of Public Health in Canada

This chapter presents an overview of the demographics of the Canadian population, including their life expectancy and patterns of ill health, disability and mortality. Also discussed are determinants that influence health – income, employment, education, health behaviours and access to health care. Although some health challenges can be related to our genetic make-up, evidence shows that income, education, employment and other social determinants of health can cause or influence the health outcomes of individuals and communities. While it is important to discuss the overall state of public health in Canada, it is equally important to acknowledge that not all populations experience health at the same level. Taking this into account, issues associated with key populations (by age, sex, origin or other combinations), are explored further where possible.

Data presented throughout this chapter often come from surveys. Despite the inherent limitations of self-reported data, such as the subjectivity of individual responses and the exclusion of those living in institutions and on reserves, they can provide valuable information otherwise not available.

Who we are

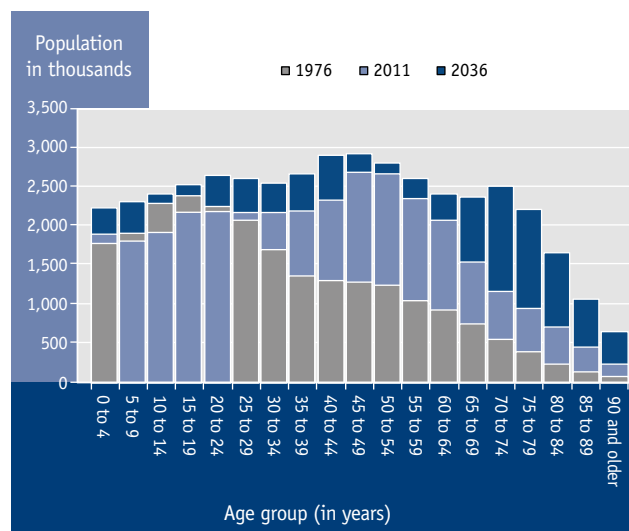
The Canadian population was 33.5 million in 2011, divided almost equally between males (49%) and females (51%).²⁶ Projected proportions for 2011 estimate the Aboriginal population at 1.4 million (62% First Nations, 31% Métis and 4% Inuit), about 4% of the total Canadian population.^{27, 28} The foreign-born population is projected to account for more than 20% of the total population in 2011.²⁹ Based on 2006 data, males make up 49% and 48% of the Aboriginal and foreign-born populations respectively.^{30, 31}

About 84% of Canadians lived in urban areas in 2011.^{32, 33} Since 2001, nearly 90% of the country's population growth has been concentrated in Canada's large census metropolitan areas.³⁴ This is due, in part, to an increasing number of younger rural residents having moved to urban areas, leaving senior residents to make up more of the overall rural population.³⁵ From 2001 to 2006, nearly

1 in 7 Canadians between 25 and 44 years moved from the downtown areas in Toronto, Vancouver and Montreal to surrounding suburbs.³⁶ Those most likely to move to the suburbs included new parents and people with college or trades diplomas and with after-tax income between \$70,000 and \$99,999.³⁶

The population is also aging. The number of Canadians 65 years and older increased between 1976 and 2011 from 9% to 15% of the total population.^{26, 28} This proportion is projected to grow to nearly one-quarter (24%) by 2036 (see Figure 1.1).³⁷ In 2011, children under the age of 12 and youth between 12 and 19 years accounted for less than one-quarter of the population (13% and 10% respectively), whereas young- and middle-aged adults between 20 and 64 years made up 62% of the population.²⁶ Although the population is divided almost equally by sex, the proportion of males and females varies somewhat by age group. From birth to 29 years, males slightly outnumber females at 51% of the population. The proportions reverse between 30 and 64 years with females at 51%.²⁶ From the age of 65 years onward, the male proportion continues to diminish: 47% males compared

Figure 1.1 Population distribution by age group, Canada, 1976, 2011 and 2036^{26, 28, 37}



Source: Public Health Agency of Canada using data from Census 2011 and Canadian Population Estimates and Projections, Statistics Canada.

The State of Public Health in Canada

with 53% females between 65 and 79 years, and 37% males compared with 63% females among Canadians 80 years and older.²⁶

An exception to the aging population trend can be found among Aboriginal peoples who have a much younger population.³⁸ In 2006, almost one-third (31%) were between 12 and 29 years (49% males and 51% females) compared with 23% in the non-Aboriginal population.^{39, 40} Within the Inuit population in the same year, 35% were youth and young adults between 12 and 29 years (50% males and 50% females).^{39, 40}

The life expectancy of Canadians has increased dramatically over the past century to the point where a male born in Canada today can expect to live about 79 years and a female about 83 years.⁴¹ Canadian women have historically experienced greater longevity, but between 1992–1994 and 2006–2008, the difference in life expectancy at birth between Canadian men and women decreased from 6.1 years to 4.6 years.⁴¹ This is not because women are dying at a younger age, but rather because men are living longer.⁴¹

Life expectancy among the Aboriginal population continues to be lower than among the general Canadian population. In 2001, life expectancy at birth for Métis

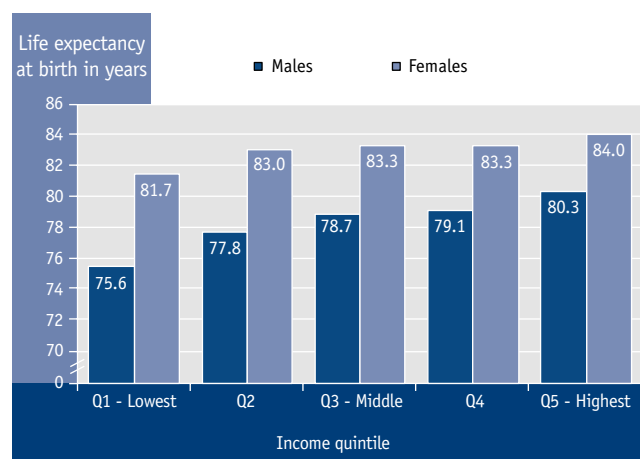
was the highest among Aboriginal populations (71.9 years for males and 77.7 years for females), followed by First Nations (71.1 years for males and 76.7 years for females) and was lowest among Inuit (62.6 years for males and 71.7 years for females).⁴² As with the general population, life expectancy among Aboriginal females is consistently higher than among males.⁴²

Variations in life expectancy are also seen by income. As shown in Figure 1.2, life expectancy in higher income neighbourhoods exceeded those in lower income neighbourhoods in 2005–2007.⁴³ Females at every neighbourhood income level have a higher life expectancy than males, with poor males being particularly disadvantaged.⁴³ As seen in Figure 1.2, the life expectancy gap between the lowest and highest income groups is 4.7 years for men but just 2.3 years for women, suggesting that income levels may have a greater effect among men.⁴³

Our health

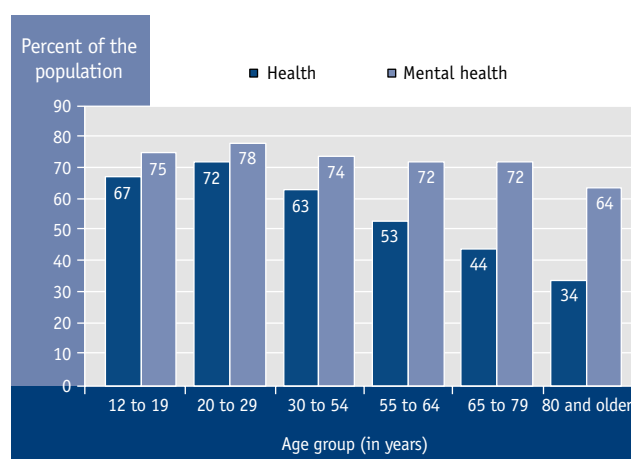
According to the 2010 Canadian Community Health Survey (CCHS), the majority of Canadians 12 years and older reported their health as either excellent (22%) or very good (38%).⁴⁴ Even more reported their mental health

Figure 1.2 Life expectancy at birth by sex and neighbourhood income quintiles, Canada, 2005–2007⁴³



Source: Greenberg, L. & Normandin, C. (2011). Disparities in life expectancy at birth. *Health at a Glance*, April 2011(1), 1-13.

Figure 1.3 Excellent or very good self-perceived health and mental health by age group, Canada, 2010⁴⁴



Source: Public Health Agency of Canada using data from Canadian Community Health Survey, Statistics Canada.

The State of Public Health in Canada

Table 1.1 Our health status

Our health status	Males	Females	Year
Reported health and life expectancy			
Perceived health, very good or excellent* (percent of population aged 12+ years)	59.7	60.5	2010
Perceived mental health, very good or excellent* (percent of population aged 12+ years)	74.5	73.3	2010
Life expectancy at birth (years of expected life)	78.5	83.1	2006–2008
Health-adjusted life expectancy at birth (years of expected healthy life)	69.6	72.1	2004–2006
Patterns of ill health			
Back problems* (percent of the population aged 12+ years)	18.5	19.6	2010
Cancer incidence (new cases age-standardized per 100,000 population per year)	456	369	2011
Diabetes prevalence (percent of the population aged 1+ years)	7.2	6.4	2008–2009
Arthritis* (percent of population aged 15+ years)	12.8	19.7	2010
Asthma* (percent of population aged 12+ years)	7.1	9.8	2010
High blood pressure* (percent of the population aged 30+ years)	24.2	24.4	2010
Mood disorders* (percent of the population aged 15+ years)	5.0	8.2	2010
Causes of death and premature death (per 100,000 population per year)			
Cancers (deaths)	224.4	199.3	2008
Circulatory diseases (deaths)	211.0	208.9	2008
Respiratory diseases (deaths)	64.2	60.3	2008
Cancers, aged 0 to 74 years (PYLL)	1,543.8	1,516.6	2008
Circulatory diseases, aged 0 to 74 years (PYLL)	1,106.6	444.2	2008
Unintentional injuries, aged 0 to 74 years (PYLL)	862.4	317.6	2008
Suicide and self-inflicted injuries, aged 0 to 74 years (PYLL)	446.7	173.8	2008
Respiratory diseases, aged 0 to 74 years (PYLL)	205.3	162.5	2008
HIV, aged 0 to 74 years (PYLL)	50.3	17.9	2008

Abbreviations: HIV, human immunodeficiency virus; PYLL, potential years of life lost.

* Denotes self-reported data.

Note: More detailed information can be found in Appendix D: Definitions and Data Sources for Indicators.

Source: Statistics Canada, Canadian Cancer Society and Public Health Agency of Canada.

A complete list of indicators, definitions and data sources can be found in Appendix C: Indicators of Our Health and Factors Influencing Our Health and Appendix D: Definitions and Data Sources for Indicators.

as excellent (37%) or very good (37%).⁴⁴ While both proportions decreased with age, a greater decline is seen for physical health than mental health (see Figure 1.3).⁴⁴ A slightly higher proportion of females (61%) reported very good or excellent health, whereas a slightly higher proportion of males (75%) reported very good or excellent mental health than females.⁴⁵

Despite relatively high rates of very good or excellent perceived health and mental health, not all years are spent in good health.⁴⁶ The health-adjusted life expectancy (HALE) from 2004 to 2006 shows that, of their 78.9 years of expected life, males spend the equivalent of 69.6 years in good health. During the same period, females with a life expectancy of 83.6 years had a HALE of 72.1 years.⁴⁶

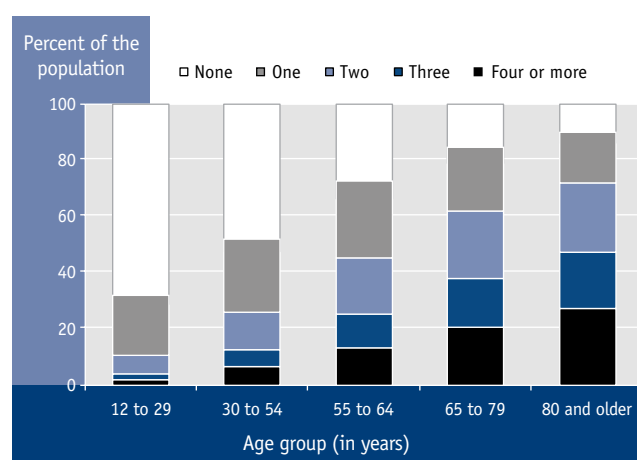
Patterns of ill health

The proportion of Canadians living with specific diseases and health conditions varies across the population. Although chronic health conditions are most often experienced by – and associated with – older members of the population, more than one-half (55%) of Canadians 12 years and older reported living with at least one of a number of chronic health conditions (see Figure 1.4).⁴⁴

The most commonly reported chronic health conditions in 2010 included back problems (19%), high blood pressure (18%) and arthritis (16%).⁴⁴ The proportion of females who reported back problems or high blood pressure (20% and 18% respectively) was similar to the proportion of

The State of Public Health in Canada

Figure 1.4 Proportion of Canadians reporting one or more chronic health conditions* by age group, Canada, 2010⁴⁴



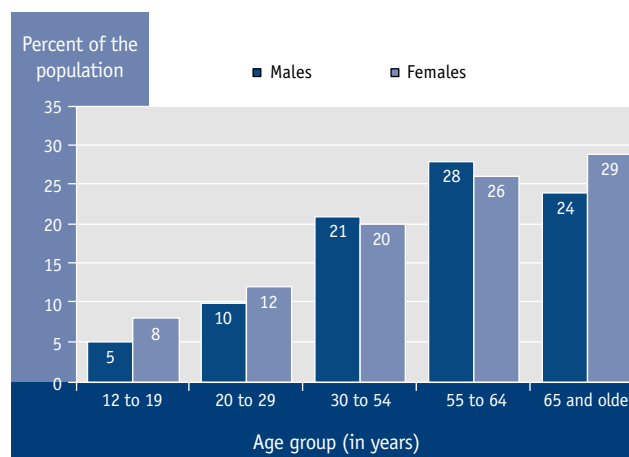
* Conditions include asthma, fibromyalgia, arthritis or rheumatism, back problems, hypertension (high blood pressure), migraines, chronic obstructive pulmonary disease, diabetes, heart disease, cancer, ulcers, effects of a stroke, bowel disorders, Alzheimer's disease, chronic fatigue syndrome, mood disorders, anxiety disorders, epilepsy, cerebral palsy, spina bifida, hydrocephalus, muscular dystrophy, dystonia, Tourette's syndrome, Parkinson's disease, amyotrophic lateral sclerosis (ALS), Huntington's disease and multiple sclerosis.

Source: Public Health Agency of Canada using data from Canadian Community Health Survey, Statistics Canada.

males who reported these conditions (19% and 18% respectively).⁴⁴ For arthritis, however, a significantly larger proportion of females reported a diagnosis (19% versus 13%).⁴⁴

While rates of reported back problems are similar for males and females, they do vary by age, as shown in Figure 1.5.⁴⁴ Although back problems are the most commonly reported chronic health condition among Canadians 12 years and older, the data do not identify the specific nature of the problems affecting those individuals. Back problems could include a range of diseases or disorders such as scoliosis, sciatica, or herniated discs as well as injuries to the spinal cord, bones or muscle tissue.⁴⁷ Most of these types of back problems result in some degree of pain, from mild to severe, and in some cases disabling. Among Canadians 12 years and older who reported having back problems in

Figure 1.5 Self-reported back problems* by sex and age group, Canada, 2010^{44, 48}



* Other than arthritis and fibromyalgia

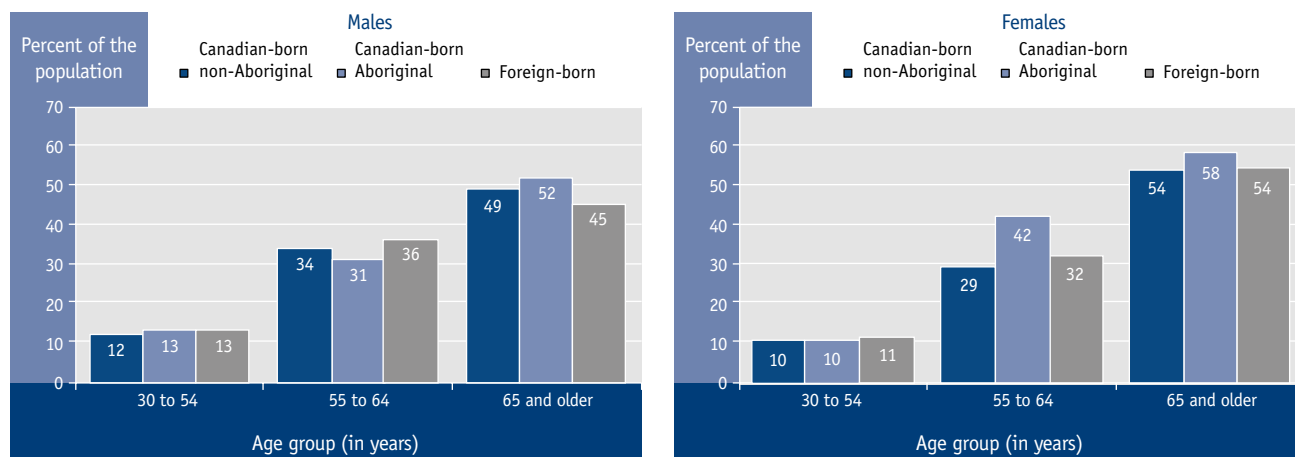
Source: Public Health Agency of Canada using data from the Canadian Community Health Survey, Statistics Canada.

2010, 50% of the females and 42% of the males also reported experiencing regular pain or discomfort.⁴⁴

High blood pressure has been linked to heart attacks, heart failure, kidney failure, dementia and, among males, erectile dysfunction and is a major contributor to some of the top causes of death in Canada.⁴⁹⁻⁵¹ In 2010, nearly one-quarter (24%) of Canadians 30 years and older reported having high blood pressure.⁴⁴ This proportion increases with age: 42% of those 55 years and older and 51% of those 65 years and older reported having high blood pressure.⁴⁴ It also varies by ethnicity and sex (see Figure 1.6).⁴⁴ Increasing physical activity, smoking cessation and improving eating habits can all reduce the risk of developing hypertension.^{52, 53}

Over 100 different types of arthritis affect the joints, ligaments, tendons, bones and other components of the musculoskeletal system. These range in severity from mild to crippling.⁵⁴⁻⁵⁶ Over the long term, arthritis can lead to chronic pain and decreased mobility and function, predisposing people to depression, cardiovascular disease, diabetes and other chronic health conditions.⁵⁴ Key risk factors associated with arthritis include physical inactivity, overweight and obesity, joint injuries, smoking,

Figure 1.6 Self-reported high blood pressure by sex, origin and select age groups, Canada, 2010⁴⁴



Source: Public Health Agency of Canada using data from Canadian Community Health Survey, Statistics Canada.

occupation, and infection – all of which can be modified to reduce risk.⁵⁷

Of the 16% of Canadians over the age of 15 years who reported being diagnosed with arthritis in 2010, 39% were men and 61% were women.⁴⁴ The prevalence of arthritis was slightly lower among foreign-born (15%); however, as with those born in Canada, more foreign-born women (19%) than foreign-born men (12%) reported having it.⁴⁴ Arthritis is also one of the most prevalent chronic health conditions among the Aboriginal



population.⁵⁸ According to the 2006 Aboriginal Peoples Survey, 20% of respondents 15 years and older reported being diagnosed with arthritis or rheumatism.⁵⁹ That same year, 21% of First Nations not living on a reserve (16% of men and 25% of women), 21% of Métis (18% of men and 24% of women) and 12% of Inuit (8% of men and 16% of women) reported being diagnosed with arthritis or rheumatism by a physician.⁵⁹

Although not among the most commonly reported chronic health conditions, asthma, diabetes and cancer also affect many people. Asthma, which is characterized by coughing, shortness of breath, chest tightness and wheezing, was reported by 9% of the population aged 12 years and older (7% of males and 10% of females) in 2010.^{45, 60, 61} Early onset of asthma has been linked to low birth-weight, exposure to tobacco smoke and family history, whereas later onset has been linked to genetic predisposition, obesity and increased exposure to allergens and environmental factors such as pollution.^{60, 61}

According to the 2008/2009 Canadian Chronic Disease Surveillance System, close to 2.4 million Canadians aged one year and older were living with diagnosed diabetes.⁶² Although both type 1 and type 2 diabetes have been linked to genetic anomalies, type 2 diabetes is also associated with being overweight or obese.⁶²⁻⁶⁴ About 178,000 new cases of cancer were expected to be

The State of Public Health in Canada

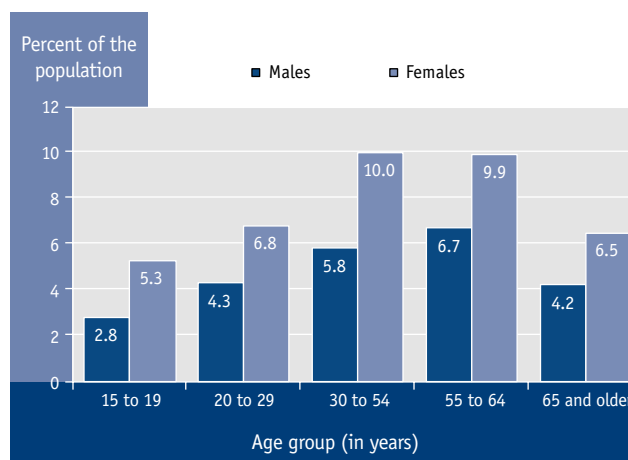
diagnosed in 2011, 52% in men.⁶⁵ Cancers of the breast, lung, colon/rectum and prostate were expected to account for 54% of all cancers diagnosed in the same year.⁶⁵

While the top three chronic health conditions most commonly reported in 2010 were physical conditions, many Canadians also reported some form of mental illness. Mental illness can affect people of all ages, cultures, education and income levels.⁶⁶ However, those with a family history of mental illness, substance abuse issues, certain chronic health conditions or who have experienced stressful life events are more at risk.⁶⁶ In addition, sexual orientation and sexual behaviour is a significant predictor of mental health issues among vulnerable youth.⁶⁷

The most commonly self-reported mental health condition in 2010 was mood disorders such as depression, bipolar disorder, mania or dysthymia.^{44, 48} The overall percentage of Canadians 15 years and older who reported having been diagnosed with a mood disorder was 6.9%.⁴⁴ A greater percentage of females (8.2%) than males (5.0%) reported mood disorders, overall and within different age groups (see Figure 1.7).⁴⁴ Older adults between 55 and 64 years old had the highest reported rates (8.3%) in the same year.⁴⁴ The percentage was highest among



Figure 1.7 Self-reported mood disorder by sex and age group, Canada, 2010⁴⁴



Source: Public Health Agency of Canada using data from Canadian Community Health Survey, Statistics Canada.

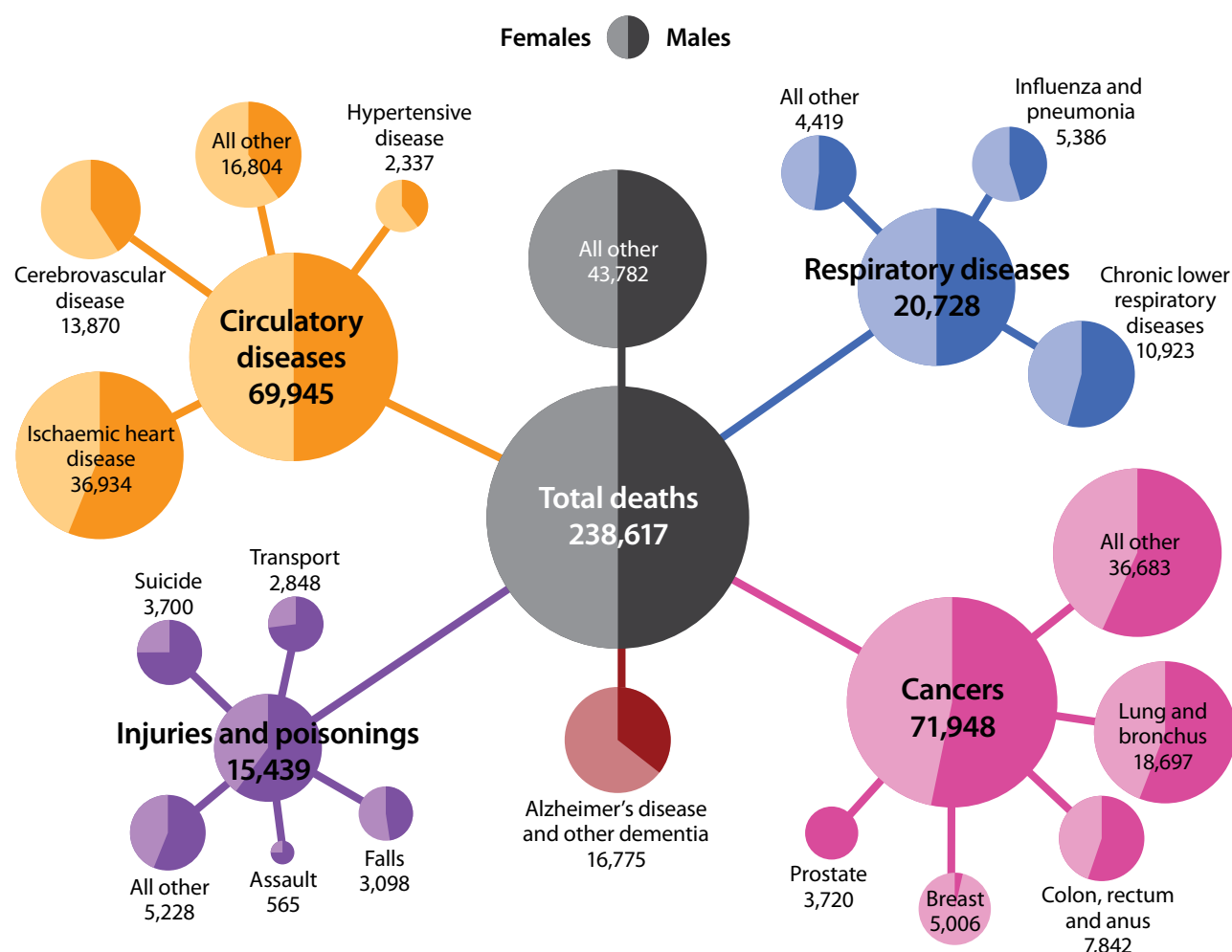
Aboriginal people not living on a reserve (11.7%), with females having a much larger percentage of self-reported diagnoses at 14.2% compared with 8.9% for males.⁴⁴ Rates of mental illness in Canada may be underestimated as many people remain undiagnosed and those with severe conditions may not be captured at all.⁶⁸

Causes of death

In 2008, cancers became the leading overall cause of death in Canada (30%), followed by circulatory diseases (29%) and respiratory diseases (9%) (see Figure 1.8).⁶⁹⁻⁸⁸ While cancers are the number one cause of death for males (31% of male deaths), females most often died due to circulatory diseases (30% of female deaths).⁶⁹⁻⁸⁸

Deaths related to circulatory disease were most often due to ischaemic heart (53%), cerebrovascular (20%) and hypertensive (3%) diseases.⁷⁷ While ischaemic heart disease caused more deaths among males (56%), more females died of cerebrovascular (59%) and hypertensive (61%) diseases (see Figure 1.8).⁷⁷ Other causes of death also affect one sex more than the other. Of deaths related to injuries and poisoning, almost two-thirds (64%) were among males.⁸⁷ Males also accounted for about three times as many deaths due to assaults (79%),

Figure 1.8 Number of deaths by select causes and sex, Canada, 2008⁶⁹⁻⁸⁸



Source: Public Health Agency of Canada using data from Canadian Vital Statistics, Death Database, Statistics Canada.

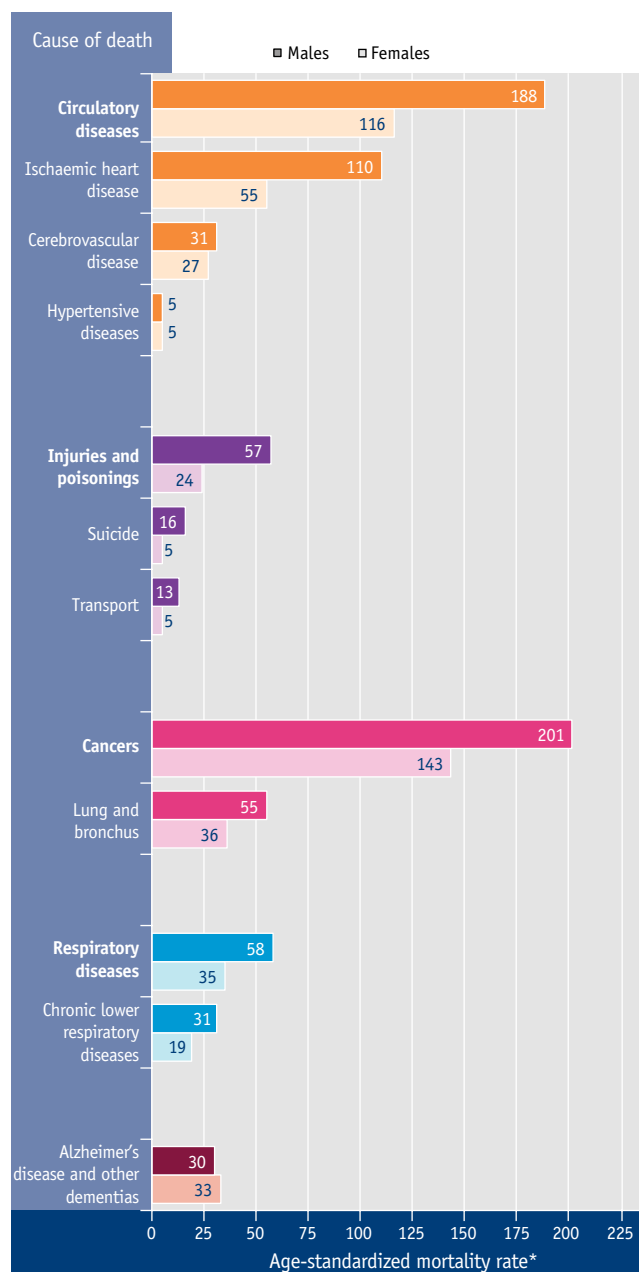
suicide (75%) and transport incidents (72%).⁸⁷ On the other hand, the female proportion of all deaths due to Alzheimer's disease and other dementias (68%) was more double that of men.^{73, 74}

Because the population distributions of males and females by age are not identical, the age-adjusted sex-specific mortality rates due to these causes, particularly for deaths in older age groups, may give a better indication of mortality risk (see Figure 1.9). For example, although only 12% more of all ischaemic heart disease deaths occurred among males than females, the age-standardized mortality rate for males was twice that of

females – 110 deaths per 100,000 population compared with 55 deaths per 100,000 population.^{28, 77} Whereas females die more often from cerebrovascular disease than do males, the fact that females live to an older age and suffer those deaths later in life results in males actually having a higher age-standardized mortality rate of 31 deaths per 100,000 population compared with 27 deaths per 100,000 female population.^{28, 77} For deaths occurring at younger ages when the ratio of females to males is more even, the differences in cause-specific age-standardized mortality rates more closely resemble

The State of Public Health in Canada

Figure 1.9 Age-standardized mortality rate by sex and select causes of death, Canada, 2008^{28, 70, 73, 74, 77, 78, 87}



* per 100,000 population

Source: Public Health Agency of Canada using data from Canadian Population Estimates and Projections, and Vital Statistics, Death Database, Statistics Canada.

the magnitude of differences in numbers of deaths as seen in Figure 1.9.

While knowing the number of deaths due to a particular disease or condition is important to understanding the health of the Canadian population, so too is knowing the age at which those deaths occur. Measuring the number of potential years of life lost (PYLL) to premature death provides a better sense of the impact a given disease or condition has on the health of the population. For example, if a Canadian dies of cancer at age 45 years, he or she has potentially lost 30 years of life (conservatively assuming a life expectancy of 75 years at birth, as is commonly done in these calculations).

In 2008, most years of lost life were due to premature deaths associated with cancers (1,530 years per 100,000 population), circulatory diseases (777 years per 100,000 population) and unintentional injuries (591 years per 100,000 population).⁸⁹ While men and women had comparable PYLL rates for cancers and respiratory diseases, PYLL rates for circulatory diseases, unintentional injuries, suicide and self-inflicted injuries as well as human immunodeficiency virus (HIV) infection were more than double for men than for women (see Figure 1.10).⁸⁹

Factors influencing health

Economic and social factors such as education, employment and income have a direct bearing on health.^{10, 90} While some health challenges can be related to our genetic make-up, evidence shows that Canadians with adequate shelter, a safe and secure food supply, access to education, employment and sufficient income for basic needs adopt healthier behaviours and have better health.

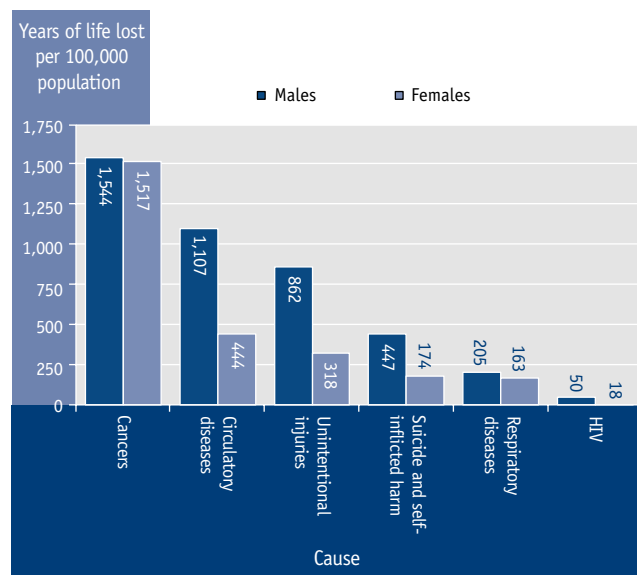
In general, an improvement in any of these can produce an improvement in both health behaviours and outcomes at the individual, group or population level. These social determinants of health strongly interact to influence overall health, and they show important similarities and differences by sex.

Education

Between the 1990/1991 and 2010/2011 school years, the percentage of Canadians between 20 and 24 years who completed high school increased from 81% to 90%.⁹¹

The State of Public Health in Canada

Figure 1.10 Age-standardized potential years of life lost by sex and select causes of death, Canada, 2008⁸⁹

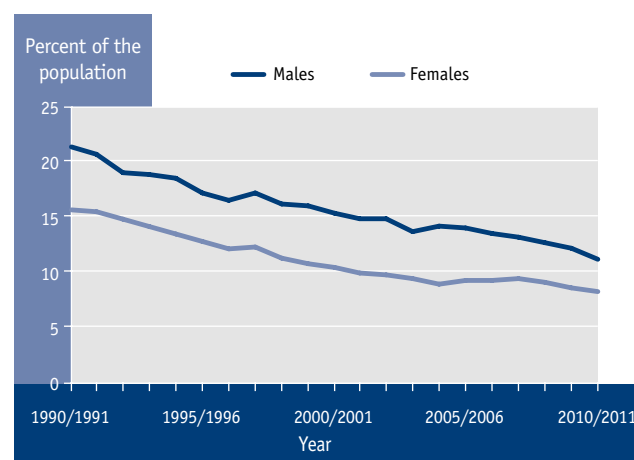


Source: Public Health Agency of Canada using data from Canadian Vital Statistics, Death Database, Statistics Canada.

Men, however, continue to have consistently higher non-completion rates when compared with women, with 89% versus 92% completing high school in 2011 (see Figure 1.11).⁹¹ In the 2009/2010 school year, the high school non-completion rate of 6% for the foreign-born population aged 20 to 24 years was lower than the overall Canadian rate.⁹² Conversely, Aboriginal peoples aged 20 to 24 years not living on a reserve had the highest rates of high school non-completion, averaging 26% over the 2007/2008 to 2009/2010 school years – more than double the rate for the non-Aboriginal population.⁹²

Between the 1990/1991 and 2010/2011 school years, the percentage of Canadians between 25 and 34 years who had completed a post-secondary education increased from 44% to 68%.⁹¹ Again, differences can be seen between males and females, with the number of women in this category increasing sharply from 44% in 1990/1991 to 72% in 2010/2011, whereas the number of men increased moderately, from 45% to 64% in the same time.⁹¹

Figure 1.11 High school non-completion rate by sex, population aged 20 to 24 years, Canada, 1990/1991 to 2010/2011⁹¹



Source: Public Health Agency of Canada using data from Labour Force Survey, Statistics Canada.

In 2006, two-thirds (70%) of Canada's foreign-born population between 25 and 34 years had completed post-secondary studies, with more women (72%) completing studies than men (68%).⁹³ About 42% of the Aboriginal population (37% of First Nations, 34% of Inuit and 50% of Métis) between 25 and 34 years were post-secondary graduates (diploma, degree or certificate in apprenticeship or trades, college or CEGEP, or university) in 2006, with a higher rate among women (45%) than men (38%).⁹⁴ In the same year, 9% of Canadians between 25 and 34 years had completed a post-secondary degree above bachelor level, in comparison with only 2% of the Aboriginal population.⁹⁴

Between 1991 and 2009, the number of people who completed a registered apprenticeship training increased by 57%.⁹⁵ Graduation rates increased by 49% for males and by 176% for females.⁹⁵ The greatest increases for men were seen in training to be landscape and horticulture technicians and specialists; heavy equipment operators; plumbers, pipefitters and steamfitters; welders; and hairstylists and aestheticians.⁹⁵ For women, the greatest increases were in training to be plumbers, pipefitters

The State of Public Health in Canada

and steamfitters; welders; electricians; carpenters; and electronics and instrumentation technicians.⁹⁵

Employment and working conditions

Unemployment and a stressful or unsafe workplace have been associated with poorer health outcomes.^{10, 90} People who have more control over their work circumstances and fewer stress-related demands associated with their job tend to be healthier and live longer than those in more stressful or riskier work environments.^{10, 90}

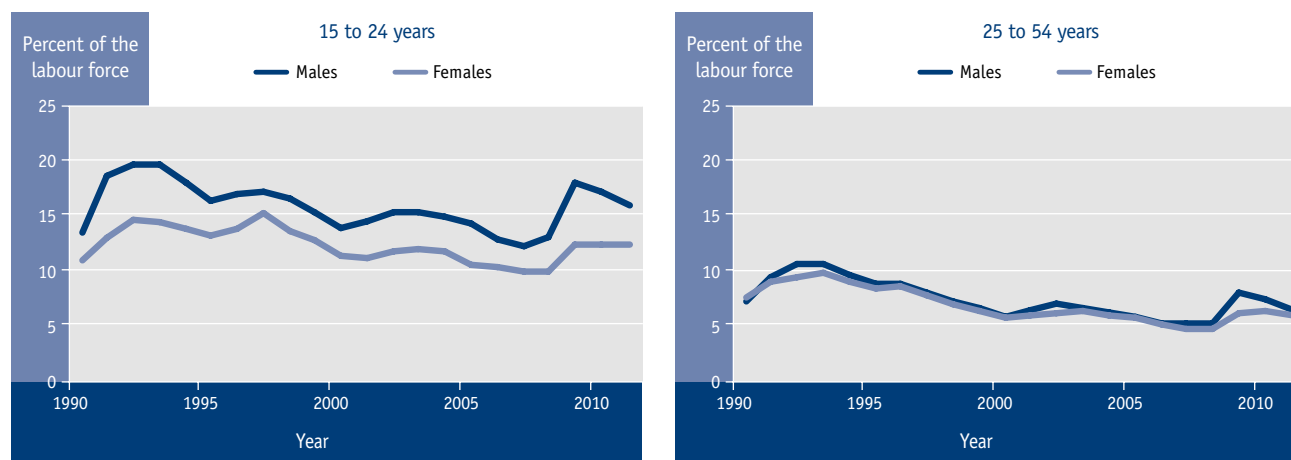
Over the past century, Canada has transitioned from being a primary producer of agricultural produce and raw materials to an industrial nation with a robust service sector economy. In 1911, more than one-third (37%) of the employed population worked in agriculture, forestry and fishing; by 2006 only 3% worked in those same industries.^{96, 97} Today, wholesale and retail trade (15%); health care and social assistance (10%); and educational services (7%) are the main sectors of the Canadian work force.⁹⁷

In 2011, the unemployment rate for young Canadians between 15 and 24 years was 14.2%, with clear differences between males (15.9%) and females (12.4%) (see Figure 1.12).⁹⁸ While the unemployment rate of 16.6% among recent immigrants in this age group is



higher than the national rate, the rate of 7.8% among immigrants who have been in Canada more than 10 years was significantly lower in the same year.⁹⁹ The unemployment rate for Canadians between 25 and 54 years was 6.2%, with little difference between males (6.4%) and females (6.0%) in 2011 (see Figure 1.12).⁹⁸ The unemployment rate among immigrants (8.4%) was higher than the national rate, regardless of length of time since immigration (10.8% among recent immigrants; 7.1% among immigrants who have been in Canada 10 or more years).⁹⁹

Figure 1.12 Unemployment rate by select age groups and sex, Canada, 1990 to 2011⁹⁸



Source: Public Health Agency of Canada using data from Labour Force Statistics Survey, Statistics Canada.

In 2006, the unemployment rate among Aboriginal peoples between 15 and 24 years was nearly twice the national rate at 22%, with rates highest among First Nations (27%) and Inuit (26%) populations.¹⁰⁰ In the same year, unemployment among Aboriginal males and females between 25 and 54 continued to be high, with rates of 14% and 12% respectively.¹⁰⁰ Inuit populations between 25 and 54 years had the highest overall unemployment rates at 19%, whereas Métis populations had the lowest at 8%.¹⁰⁰ The unemployment rate was highest among Inuit males, between 25 and 54 years, at 23%.¹⁰⁰

High levels of work-related stress have been linked to increased risks of physical injury at work, high blood pressure, cardiovascular disease, depression and other mental health conditions.¹⁰¹⁻¹⁰⁶ Personal behaviours, such as smoking, drinking and drug misuse, may also increase and lead to further health complications.^{101, 104, 106, 107} In 2010, nearly one-third (32%) of the working population between 30 and 54 years self-reported having “quite a bit” or “extreme” work-related stress, with similar rates among men and women (31% and 34% respectively).⁴⁴ Although younger adults also reported relatively high rates of work-related stress, the proportion was higher among young women than young men (28% compared with 24%).⁴⁴ Those between 25 and 54 years who had not completed high school reported the lowest rates of work-related stress (27%), whereas those in the same age group who had completed a post-secondary education reported the highest rates (34%).⁴⁴

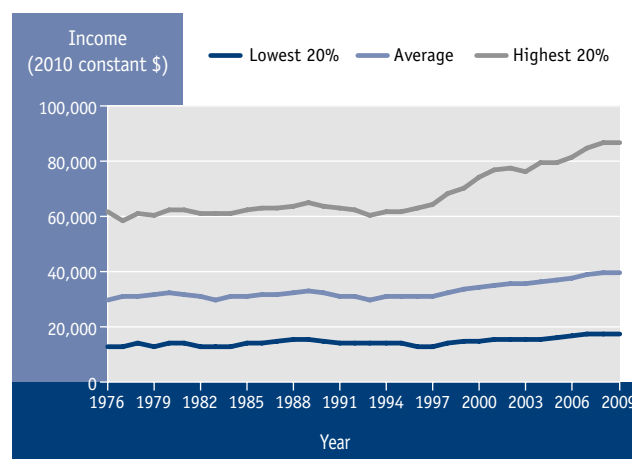
According to data collected by the Association of Workers' Compensation Boards of Canada, about 250,000 accepted time-loss injuries occurred in 2010.¹⁰⁸ The majority of these (63%) were reported by men, and more than one-third (34%) were among people working in the manufacturing, construction, and transportation and storage industries.¹⁰⁸ The same year saw more than 1,000 workplace-related fatalities, mainly of men (96%).¹⁰⁸ More than one-half (57%) of the workplace fatalities were among Canadians 60 years and older and more than one half (56%) were in the manufacturing, construction, and transportation and storage industries, which employed 19% (2,895,900 men compared with 377,200 women) of the estimated 17,041,000-strong workforce in 2010.^{108, 109}

Income

Canadians have seen an overall increase in personal income (adjusted for inflation) over time, but increases have not been consistent for everyone. In fact, the gap between those with the highest and lowest income has widened significantly between 1976 and 2009 (see Figure 1.13).¹¹⁰ Gaps are also seen in the median income of Aboriginal and foreign-born populations in Canada compared with the total population. In 2005, the median total income of the Aboriginal population between 25 and 54 years was just over \$22,000, of the foreign-born population was just over \$27,000, and of the total population in the same age group was over \$33,000.^{111, 112} While their median incomes were lower than that of the total population, Aboriginal and foreign-born men had larger incomes (\$25,000 and \$34,000 respectively) than Aboriginal and foreign-born women (\$20,000 and \$23,000 respectively).^{111, 112}

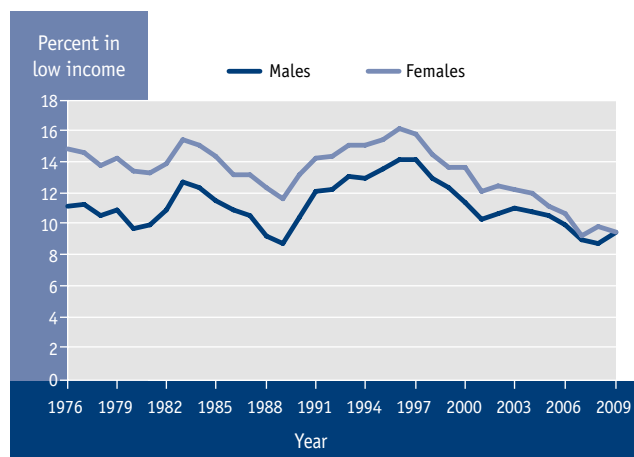
Although women face living in low income more often than do men, the difference in these rates has disappeared over time. As of 2009 the low-income rates stood at 9.5% for men and women (see Figure 1.14).¹¹³ The number of children under the age of 18 years living

Figure 1.13 Average after-tax income for economic families (two or more persons), 2010 constant dollars, Canada, 1976 to 2009¹¹⁰



Source: Public Health Agency of Canada using data from Survey of Labour and Income Dynamics, Statistics Canada.

Figure 1.14 Population living in low income by sex, Canada, 1976 to 2009¹¹³



Source: Public Health Agency of Canada using data from Survey of Labour and Income Dynamics, Statistics Canada.

in low-income households has declined from a peak of 18.4% in 1996 to 9.4% in 2009.¹¹³ The rate living in low-income households was more than double (21.5%) for children under the age of 18 years living in single parent households headed by women.¹¹³ The 5.1% of Canadian seniors living in low income (3.3% of men and 6.6% of women) in 2009 was also a large decrease from

30.4% in 1977 (25.0% of men, 34.7% of women).¹¹³ In addition, 18.7% of Aboriginal and 14.4% of foreign-born populations lived in low-income households in 2005.^{111, 112}

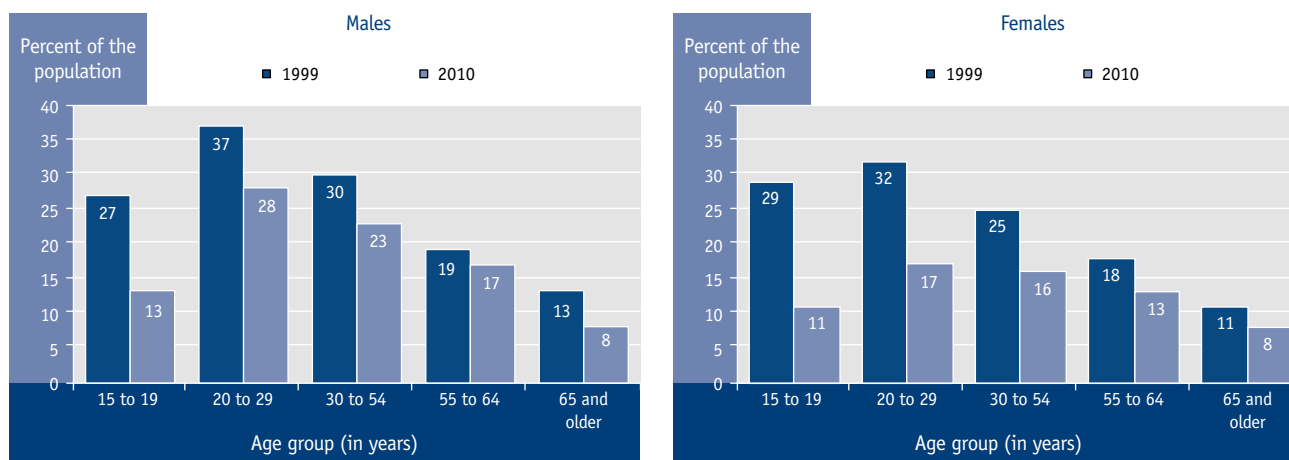
Health behaviours

Individual behaviours, such as being physically active and eating well, can contribute to good health, whereas smoking, heavy drinking, drug misuse and sedentary behaviour can have detrimental health effects. Ultimately, health behaviours are individual choices that people make. However, the physical, social and economic environments where individuals live, work and learn can influence these choices.^{114, 115}

Smoking

The effects of smoking on health and well-being are well documented: smoking has been linked to increased risk of lung cancer, heart disease and stroke.¹¹⁶⁻¹¹⁸ It can also interfere with various drug therapies, causing medications, including antidepressants, to be less effective.¹¹⁹⁻¹²¹ While the overall smoking rate has declined since 1999, 17% of Canadians 15 years and older reported smoking (14% of females and 20% of males) in 2010.¹²²⁻¹³³ Men have consistently reported higher rates of smoking compared with women, with young adults between 20 and 29 years reporting the highest smoking rate of all

Figure 1.15 Current smokers by sex and age group, Canada, 1999 and 2010^{134, 135}



Source: Public Health Agency of Canada using data from Canadian Tobacco Use Monitoring Survey, Health Canada.



age groups in Canada during the same periods (see Figure 1.15).¹³⁴⁻¹⁴⁵ In 2010, 22% of young adults were smokers, with a higher rate among young men (28%) than young women (17%).¹³⁴

Smoking rates are higher than average among some sub-populations compared with the Canadian population as a whole. In 2006, 19% of all Canadians were daily or occasional smokers compared with 39% of Métis, 46% of First Nations not living on a reserve and 68% of Inuit.^{59, 142} Inuit women had the highest smoking rate among the Aboriginal population at 71%.⁵⁹ In 2008/2010, 57% of First Nations living on a reserve reported being daily or occasional smokers.¹⁴⁶

Variations in smoking rates can also be seen by education level. In 2010, smoking rates for people (ages 25 years and older) who had not completed high school were double the rate seen in those who had completed a post-secondary education (24% compared with 12%).¹³⁴

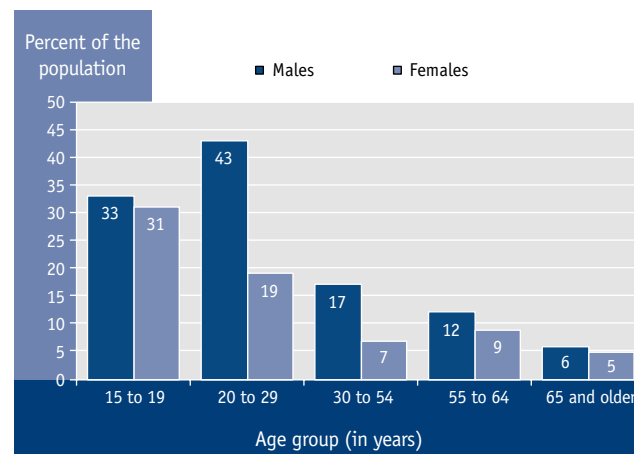
Alcohol consumption

Alcohol is the psychoactive substance most commonly used by Canadians.¹⁴⁷ Alcohol intoxication can lead to a variety of risks including harmful effects on physical and mental health, personal relationships, work and education; in extreme cases, it can even cause death.¹⁴⁷⁻¹⁵¹

In 2010, 77% of Canadians 15 years and older had consumed alcohol in the past year.¹⁵² Of those, nearly one-half (47%) consumed alcohol at least once per week – 54% of males and 40% of females.¹⁵² Among drinkers, 9% (10% of males and 6% of females) consumed 5 or more drinks at least once a week in the past year.¹⁵² Consuming large amounts of alcohol frequently, and especially over a short period of time, can lead to poor judgment, impulsive behaviour and alcohol poisoning.¹⁵³ Rates of frequent heavy drinking – consuming five or more drinks on one occasion, one or more times per week – was highest among males in all age groups, with the highest rates being among young men (see Figure 1.16).¹⁵² Variations in heavy drinking can also be seen by education level. In 2010, rates of heavy drinking for people (ages 25 years and older) who had not completed high school were more than double the rate seen in those who had completed a post-secondary education (13% compared with 6%).¹⁵²

In 2006, 78% of the Aboriginal population 15 years and older had consumed alcohol in the past year.⁵⁹ Of those, 39% (48% of males compared with 32% of females) consumed alcohol at least once per week.⁵⁹

Figure 1.16 Frequent heavy drinking* by sex and age group, Canada, 2010¹⁵²



* Consuming five or more alcoholic beverages on one occasion at least once a week.

Source: Public Health Agency of Canada using data from Canadian Alcohol and Drug Use Monitoring Survey, Health Canada.

Among drinkers, 10% (15% of males compared with 6% of females) consumed 5 or more drinks at least once a week in the past year.⁵⁹ According to the 2002/2003 First Nations Regional Health Survey (RHS), 66% of First Nations 18 years and older living on a reserve had consumed alcohol in the past year.¹⁵⁴ Of those, 18% (23% of males compared with 12% of females) consumed alcohol at least once per week.¹⁵⁴ Overall, 9% of First Nations living on a reserve reported having consumed five or more drinks on one occasion more than once a week (11% of males and 5% of females).¹⁵⁴

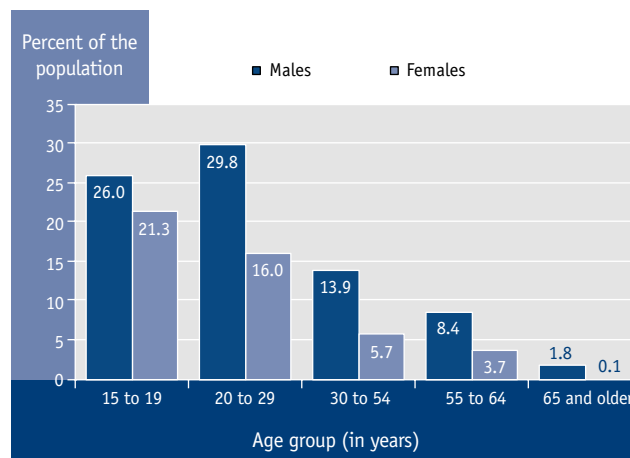
Alcohol-related acute-care hospitalizations totalled 1.2 million days in 2002, of which two-thirds were among males. That same year, there were an estimated 4,258 deaths attributed to alcohol (82% of males), including 1,246 due to cirrhosis of the liver (882 males and 364 females), 909 due to motor vehicle crashes (746 males and 163 females) and 603 due to suicides (493 males and 109 females).¹⁵⁵

Drug use

Short- and long-term effects of illicit drugs vary. Short-term effects of cannabis, for example, can include an increase in heart rate and a decrease in blood pressure.¹⁵⁶⁻¹⁵⁸ It can interfere with concentration, depth perception and reaction time, affecting driving, among other things.¹⁵⁶⁻¹⁵⁸ Long-term use of cannabis can lead to respiratory distress and increased risk of cancer and may cause impaired memory and information processing.¹⁵⁶⁻¹⁵⁸ Other illicit drugs – cocaine, hallucinogens and ecstasy – have been linked to various health and social problems including panic attacks, paranoia, and risky or violent behaviour and to physical effects such as convulsions and increased blood pressure.¹⁵⁹⁻¹⁶² Over the long term, and depending on the substance, harmful effects can include psychosis, impaired brain function affecting memory and lung and nasal tissue damage.¹⁵⁹⁻¹⁶² The use of illicit drugs (e.g. abuse, misuse, or dependence) can affect performance at school and work, and in extreme cases even cause death.¹⁵⁹⁻¹⁶²

The drug most commonly used by Canadians in 2010 was cannabis.¹⁶³ One-in-ten Canadians over the age of 15 years (15% of males and 7% of females) reported having used cannabis in the past year.¹⁶³ While youth and young

Figure 1.17 Cannabis use in the past 12 months by sex and age group, Canada, 2010¹⁵²



Source: Public Health Agency of Canada using data from Canadian Alcohol and Drug Use Monitoring Survey, Health Canada.

adults between 15 and 29 years have the highest reported rates of cannabis use in Canada, males, regardless of age, have the highest reported rates overall (see Figure 1.17).¹⁵² Variations in cannabis use can also be seen by education level. Other than cannabis, the illegal drugs most commonly used were hallucinogens (1.1%), ecstasy (0.7%) and crack/cocaine (0.7%).¹⁶³

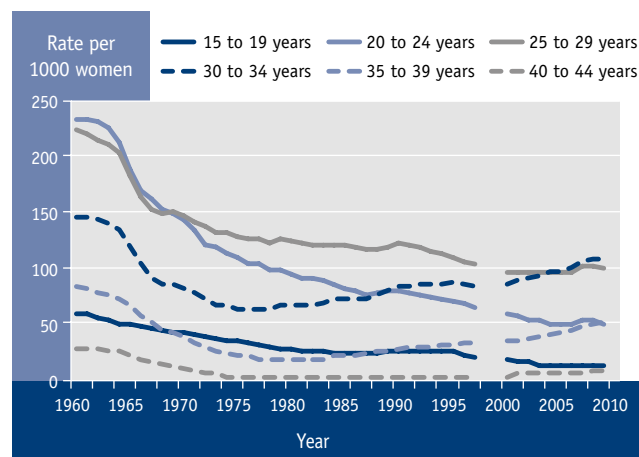
Pharmaceutical drugs prescribed for therapeutic purposes, including opioid pain relievers, stimulants, tranquillizers and sedatives, may also be abused due to their psychoactive properties.¹⁴⁷ In 2010, 1% of those who used psychoactive drugs did so for non-therapeutic reasons.¹⁴⁷

Sexual health

There have been significant changes in the age-specific fertility rates in Canada over the past 50 years (see Figure 1.18).¹⁶⁴⁻¹⁶⁶ The number of births has remained fairly stable over the past 50 years at more than 370,000 births each year.¹⁶⁵⁻¹⁶⁷ The current total fertility rate of 1.7 children per female aged 15 to 49 years has also changed relatively little since the mid-1970s but is less than one-half of what it was in 1960.^{164, 165} Although Aboriginal women in Canada are also experiencing a decrease in fertility rates, the rate of 2.6 children per

The State of Public Health in Canada

Figure 1.18 Age-specific fertility rate by select age groups, Canada, 1960 to 2009¹⁶⁴⁻¹⁶⁶



Note: Data for Newfoundland excluded for 1960; no data available for 1998 and 1999.

Source: Public Health Agency of Canada using data from Canadian Vital Statistics, Birth Database, Statistics Canada.

woman aged 15 to 49 years (3.4 children per Inuk woman; 2.9 children per First Nations woman; and 2.2 children per Métis woman) between 1996 and 2001, is still well above the Canadian average.^{164, 168}

In 2010, 29% of 15- to 17-year olds reported being sexually active (28% young boys and 30% of young girls).⁴⁴ While rates were considerably lower among the foreign-born population (13%), rates among Aboriginal peoples not living on a reserve in 2010 and First Nations living on a reserve in 2008/2010 were considerably higher (43% and 47% respectively).^{44, 146} Among adults between 18 and 49 years, 94% reported being sexually active, with similar rates among the foreign-born population (91%), Aboriginal peoples not living on a reserve (96%) and First Nations aged 18 years and older living on a reserve (72%) in 2008/2010.^{44, 146}

Rates of sexually transmitted infections (STIs) officially reported to the Canadian Notifiable Disease Surveillance System increased among the overall Canadian population over the past 15 years.¹⁶⁹⁻¹⁷¹ Untreated STIs, whether symptomatic or not, can have long-lasting effects on health. STIs have been linked to pelvic inflammatory disease, infertility, ectopic pregnancies, miscarriages and low birth-weight babies as well as genital warts and

various types of cancers including cervical, anal and penile.^{172, 173}

In 2009, young women between 20 and 24 years had the highest reported rate of chlamydia infection, more than seven times the overall national rate and more than five times the overall female rate (see Figure 1.19).¹⁶⁹ Young men of the same age had the highest reported chlamydia infection rate, although their rate was one-half that of their female peers.¹⁶⁹

The highest rates of reported gonococcal infections in 2009 were among young men and women between 20 and 24 years (see Figure 1.19).¹⁷¹ Among youth between 15 and 19 years, the rate was more than twice as high in adolescent girls as in adolescent boys; among adults 25 years and older, men had a higher gonorrhea rate than did women.¹⁷¹

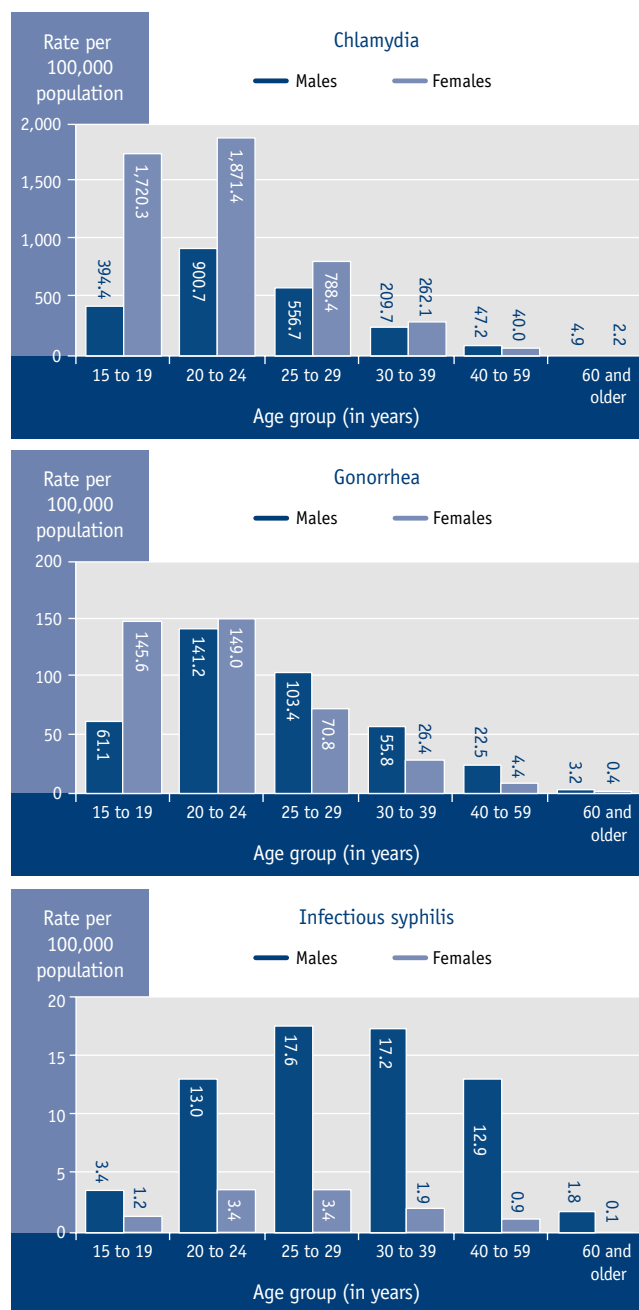
Unlike chlamydia and gonorrhea, reported rates of infectious syphilis in 2009 were higher in males than in females in all age groups (see Figure 1.19).¹⁷⁰ Young men between 25 and 29 years had the highest reported rate

The Canadian Notifiable Disease Surveillance System allows for the monitoring of reportable sexually transmitted infections (STIs). The number of reported cases of STIs and the resulting calculated population rates do not account for all infections in the population. In many cases, an infected individual does not show symptoms and as a result may not be tested.¹⁷⁴

with 17.6 cases per 100,000 population.¹⁷⁰ The reported rates of infectious syphilis for females were much lower, with the highest rate that year being 3.4 cases per 100,000 population for both 20- to 24-year-old and 25- to 29-year-old young women.¹⁷⁰

An estimated 65,000 people were living with HIV infection at the end of 2008.^{175, 176} Nearly three-quarters (74%) of all new HIV infections reported in 2008 were among men, with the highest rates of all new cases being among men between 40 and 49 years (32%).¹⁷⁶ Men who have sex with men (MSM) accounted for the largest

Figure 1.19 Sexually transmitted infection rates by sex and select age groups, Canada, 2009¹⁶⁹⁻¹⁷¹



Source: Public Health Agency of Canada using data from STI (Sexually Transmitted Infections) Surveillance and Epidemiology.

proportion of new positive cases (45%).^{175, 176} Women represent an increasing proportion of those with positive HIV test reports in Canada, and represented 26% of all new cases reported in 2008.^{175, 176} Women between 30 and 39 years account for 35% of reported HIV infections among all females.¹⁷⁶ The two main risk factors for HIV infection among women were heterosexual contact and injection drug use.^{175, 176}

Aboriginal people are also disproportionately affected by HIV in Canada, and more specifically Aboriginal women. Aboriginal people accounted for 13% of all new HIV infections in 2008, a rate estimated to be about 3.6 times higher than among the non-Aboriginal population.¹⁷⁵ Between 1998 and 2008, women accounted for nearly 50% of all HIV infections reported among Aboriginal people compared with 21% among the non-Aboriginal population.¹⁷⁵

While STIs are generally viewed as affecting younger people, older Canadians are also at risk. The proportion of new infections reported among those 40 years and older has been increasing.^{169-171, 175-177} Several factors may contribute to an increased risk such as limited knowledge associated with transmission, increasing divorce rates, access to drugs for the treatment of erectile dysfunction, and misconceptions about sexuality among middle-aged and older adults by those in the health care and policy fields.^{175, 178-183}

While human papillomavirus (HPV) is not a notifiable STI in Canada, the majority (estimated at more than 70%) of sexually active Canadians will contract an HPV infection at some point in their lives.¹⁷³ Although most cases will be asymptomatic and require no treatment, persistent infections of certain types of HPV contribute to anal and genital warts and, anal, cervical and penile cancers.¹⁷³

Physical activity and healthy eating

While many factors can affect a person's health, research studies report that people who are the most physically active are at a lower risk for poor health.^{184, 185} Physical inactivity is a modifiable risk factor for a wide range of chronic health conditions including coronary heart disease, stroke, hypertension, colon cancer, breast cancer, type 2 diabetes and osteoporosis.^{184, 186, 187}



In order to maximize the health benefits associated with being physically active, World Health Organization (WHO) and Canadian guidelines suggest that adults should accumulate at least 150 minutes of moderate-to-vigorous physical activity per week.¹⁸⁷⁻¹⁸⁹ According to the 2007–2009 Canadian Health Measures Survey (CHMS), only 17% of males and 14% of females achieved this level of physical activity, and most Canadian adults between 20 and 79 years spend the majority of their waking hours – 68% for men and 69% for women – being sedentary.¹⁸⁷

Levels of physical activity among children between 6 and 19 years were also measured in the 2007–2009 CHMS. As with adults, the majority of their waking hours – 60% for boys and 63% for girls – were sedentary.¹⁹⁰ WHO and Canadian guidelines suggest that children and youth should accumulate at least 60 minutes of moderate-to-vigorous physical activity every day.¹⁸⁸⁻¹⁹⁰ While only 7% of children (9% of boys and 4% of girls) attained the suggested level of activity, 44% (53% of boys and 35% of girls) were engaged in at least 60 minutes of moderate-to-vigorous physical activity at least three days a week.¹⁹⁰

The types, quantity and quality of food eaten can also affect health.^{191, 192} But eating nutritious foods is also dependent on accessibility and availability.¹⁹¹⁻¹⁹⁴ Healthy eating requires having “food security,” that is, having physical and economic access to sufficient, safe and nutritious foods to meet the dietary needs and food preferences for a healthy and active life.^{195, 196}

In 2010, 8% of Canadian households (excluding those in Prince Edward Island and New Brunswick) reported experiencing moderate to severe food insecurity at some point in the previous year.⁴⁴ Among the provinces, an income gradient was associated with food insecurity, as 23% of households in the lowest household income quintile reported some form of food insecurity compared with 1% of households in the highest household income quintile.⁴⁴ Also, the prevalence of food insecurity was higher in households with the lowest household education attainment level (less than completed high school) (14%) than in those with the highest household education attainment level (completed post-secondary education) (6%).^{44, 196} Further challenges to healthy eating exist in northern and remote communities due to the availability of quick, less expensive and less healthy foods.¹⁹⁷⁻¹⁹⁹ These communities do not have as many food choices and healthy foods are often more expensive than in more populated regions of the country.¹⁹⁷⁻¹⁹⁹ In the 2007–2008 Inuit Health Survey, approximately 70% of Nunavut households reported experiencing moderate to severe food insecurity over the past year.^{197, 200}

Less healthy eating, including over-consumption, combined with inadequate physical activity can lead to increased body weight.^{191, 201} Obesity is a risk factor for many chronic diseases including high blood pressure, type 2 diabetes, gallbladder disease, coronary artery disease, osteoarthritis and certain types of cancer. Obesity presents a considerable health challenge in Canada.¹⁹¹ Body mass index (BMI) is a common measure based on height and weight that is used to determine healthy and unhealthy weights (see Appendix B: Body mass index cut-points for detailed BMI breakdown). While BMI has been seen as an adequate measure for a portion of the population, standard BMI categories may not accurately reflect the rate of overweight and obesity in all populations.²⁰²⁻²⁰⁶ Regardless, BMI is still the most

The State of Public Health in Canada

commonly used measure to classify overweight and obesity.²⁰⁷

In 2007–2009, 24% of Canadian adults were obese and 37% were overweight based on their measured height and weight.²⁰⁸ This is a substantial increase from the 12% reported as obese and 32% reported as overweight in 1978–1979.²⁰⁹ Obesity is not only a problem for adult Canadians, however, measured heights and weights of Canadian children in the same period showed that 10% of 6- to 17-year-olds were obese and 18% were overweight.²⁰⁸ As with adults, this is a significant increase from the 4% reported as obese and 14% reported as overweight in 1978–1979.²⁰⁹ For both adults and children, a larger percentage of males than females were either overweight or obese (see Figure 1.20).²⁰⁸ Differences in income have been linked to differences in adult obesity rates, yet men and women seem to be affected differently. While females tend to show an inverse association between income and obesity (i.e. as income increases, rates of obesity decrease), there is no clear pattern for males.¹⁹¹

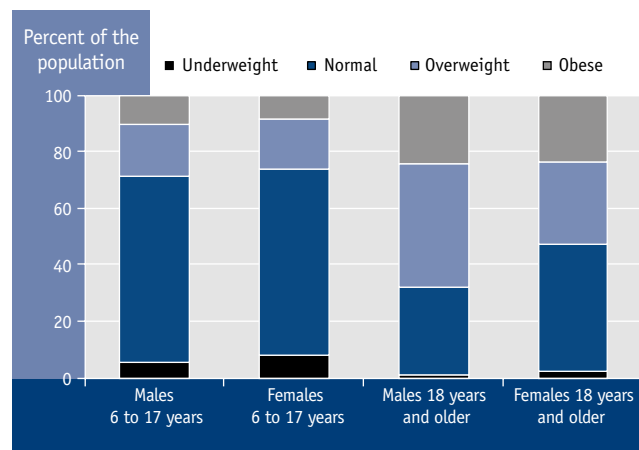
Self-reported data from the 2010 CCHS suggest that recent immigrants to Canada have much lower rates of

overweight and obesity (39%) compared with the national rate (53%).⁴⁴ However, rates among immigrants who have lived in Canada for 10 or more years equal the national rate.⁴⁴ Among Aboriginal peoples not living on a reserve, 66% of adults 20 years and older and 40% of children and youth are either overweight or obese, based on self-reported height and weight.⁴⁴ For First Nations living on a reserve or in northern communities, 62% of children (3 to 11 years), 43% of youth (12 to 17 years) and 75% of adults (18 years and older) were considered overweight or obese based on self-reported height and weight measurements according to preliminary results from the 2008/2010 RHS.¹⁴⁶

Accessing primary care

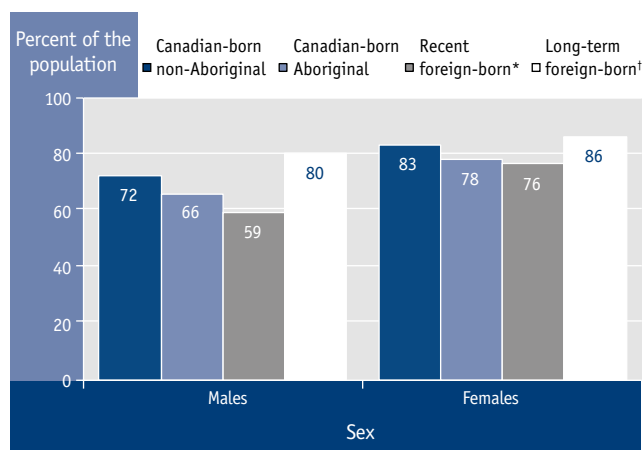
Access to primary care is fundamental to health. In 2010, about 85% of Canadians (89% of females and 81% of males) reported having a regular family doctor.⁴⁵ While the majority of Canadians may have a regular family doctor, not everyone consults a physician annually. Recent immigrants reported the lowest rates of consulting either a family doctor or general practitioner (76% of women and 59% of men) whereas immigrants who had been in

Figure 1.20 Body mass index by sex and age group, Canada, 2007–2009²⁰⁸



Source: Public Health Agency of Canada using data from Canadian Health Measures Survey, Statistics Canada.

Figure 1.21 Consulting a doctor by origin and sex, Canada, 2010⁴⁴



Note: * Recent foreign-born has been living in Canada for 10 years or less.

† Long-term foreign-born has been living in Canada for more than 10 years.

Source: Public Health Agency of Canada using data from Canadian Community Health Survey, Statistics Canada.

The State of Public Health in Canada

Canada for 10 or more years had the highest reported rates (86% of women and 80% of men).⁴⁴ Regardless of whether or not they had a family physician, more women (83%) reported consulting a physician compared with men (72%) (see Figure 1.21).⁴⁴

Not only do people seek treatment through Canada's publicly funded health care system, they also benefit from a number of disease prevention and health promotion services such as immunization. Currently, all of Canada's provinces/territories have developed publicly funded immunization strategies.²¹⁰ Rates of vaccine-preventable infectious diseases are low in Canada since the majority of Canadian children have been immunized against a range of potentially serious illnesses. In 2009, about 92% of two-year-olds had been immunized against measles, mumps and rubella, 77% against diphtheria, pertussis and tetanus and 83% against polio.²¹¹

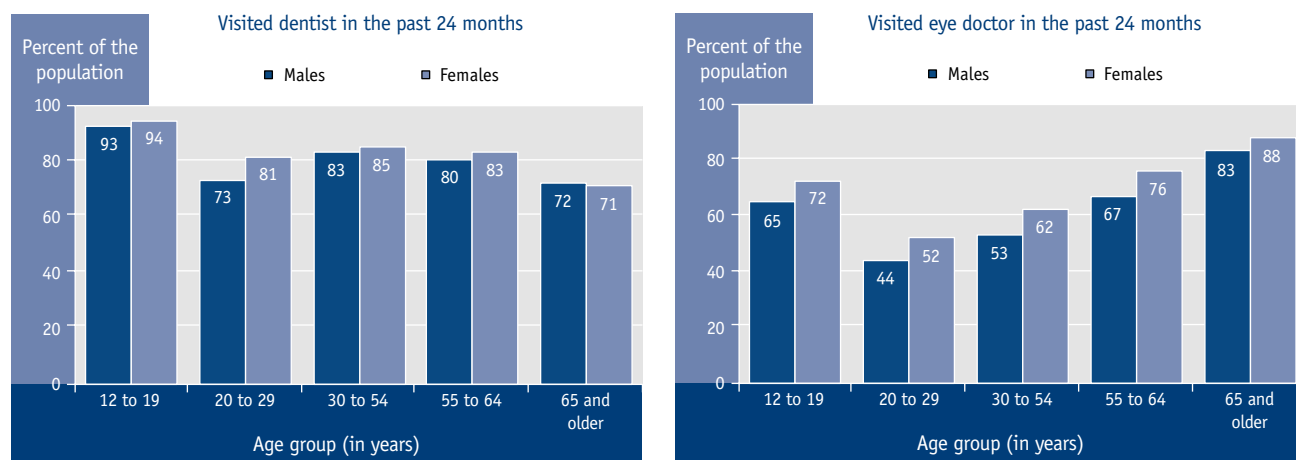
Nevertheless, immunization coverage is below target for several vaccine-preventable diseases. Reduced coverage rates may be the result of barriers to awareness and access, leading to delays in receiving timely immunization; varying provincial/territorial immunization programs for some vaccines across the country; or because of differing cultural norms and personal beliefs.^{210, 212} In Canada, immunization is a shared responsibility among the federal, provincial and territorial governments.²¹³

The federal government is responsible for approving and regulating vaccines, monitoring vaccine safety and providing evidence-based recommendations on the use of vaccines in Canada.^{213, 214} The provinces and territories are responsible for funding, program planning and delivering immunization programs in their respective jurisdictions.²¹³ As there is no timely-mechanism or national immunization registry system to collect immunization records consistently, the Public Health Agency of Canada has collaborated with provinces and territories to establish standards for reporting immunization coverage and surveys to estimate national immunization coverage.^{210, 215}

In 2010, 72% of the population reported having received the influenza vaccination in the previous two years.⁴⁴ Vaccine coverage for seasonal influenza varies among different age groups, with the highest vaccination rates (91%) being reported by seniors.⁴⁴ Among people with chronic health conditions, 81% were vaccinated in the previous two years.⁴⁴ During the same period, 67% of Aboriginal and 74% of foreign-born populations also received the seasonal influenza vaccine.⁴⁴

Accessing non-insured health services, such as dental and eye care, is equally important. In 2010, 82% of Canadians reported they had seen a dentist in the previous two years, though this percentage decreased with age (see Figure 1.22).⁴⁴ That same year, 64% of

Figure 1.22 Dental and eye doctor visits in the past 24 months by sex and age group, Canada, 2010⁴⁴



Source: Public Health Agency of Canada using data from Canadian Community Health Survey, Statistics Canada.

Canadians reported having seen an eye doctor in the previous two years.⁴⁴ Unlike dental visits, the percentage of people seeing an eye doctor in the previous two years increased with age (see Figure 1.22).⁴⁴ More women reported visiting a dentist (83%) or eye doctor (68%) than did men (81% and 59% respectively).⁴⁴

Summary

Although the health of Canada's population is considered very good, a closer inspection of differing rates of death, disease and disability among various groups shows that some Canadians experience worse health and a lower quality of life than do others. Many factors influence these outcomes including the aging of the population, increasing survival rates for potentially fatal conditions, and changes in personal choices about eating, physical activity and the use of substances such as tobacco and alcohol. These are not the only factors at play; evidence shows that income, education, employment and working conditions can affect individual health behaviours and outcomes. The following chapter will introduce the concepts of sex and gender and how they are linked to health behaviours and outcomes, both directly and through their connection to the determinants of health. It also briefly explores sex- and gender-based analysis as a tool for analyzing how both sex and gender influence health.

PART II: SEX, GENDER AND THE HEALTH OF CANADIANS

Sex, Gender and Public Health

This chapter both explains the concepts of sex and gender and discusses why and how sex and gender matter to public health. It describes and broadly examines the ways in which sex and gender interact with other determinants of health and how they influence health behaviours and outcomes. In addition, this chapter identifies sex- and gender-based analysis (SGBA) as a tool to help researchers, policy makers and program advisors understand and address the influence of sex and gender on health. SGBA can improve the effectiveness and efficiency of services and programs by showing how to create supportive conditions for better health and reduce specific risks and barriers to achieving optimal health for all Canadians.

Clarifying sex and gender

Although the two terms are often used interchangeably, sex and gender have different meanings.

While there are no agreed-upon definitions, “sex” typically refers to the biological and physiological characteristics that distinguish women and men.²¹⁶⁻²¹⁸ Sex is a multi-dimensional construct that encompasses characteristics such as hormones, genes, anatomy



and physiology.²¹⁹ Although sex is often referred to in binary terms – men/women or male/female – many of the attributes of sex (e.g. variation in hormone levels, chromosomal differences, etc.) are often described as existing on a continuum.²¹⁶⁻²²¹

Sex refers to the biological characteristics such as anatomy (e.g. body size and shape) and physiology (e.g. hormonal activity or functioning of organs) that distinguish males and females.²²

Gender refers to the array of socially and culturally constructed roles, relationships, attitudes, personality traits, behaviours, values and relative power and influence that society ascribes to two sexes on a differential basis.²²

Similarly, “gender” is commonly associated with socially and culturally constructed roles, relationships, behaviours, relative power and other traits that society ascribes to females, males and people of diverse gender identities.^{216, 217, 222, 223} As with sex, gender is often thought of in binary terms – masculine/feminine or male/female.^{217, 218} However, the masculine/feminine division does not accurately reflect or capture the range of human experience or the expressions of self and identity that gender encompasses.²¹⁶⁻²¹⁸ Most of us experience or embody gender on a spectrum or as a continuum of characteristics and behaviours rather than as mutually exclusive categories. While gender and sex are inter-related, sex neither determines gender, nor gender sex. For example, someone born female might have a masculine gender identity. Some individuals identify as transgender, that is, their gender identity and/or gender expression differ from their biological sex.^{216, 217, 224-226}

Gender has multiple dimensions including, but not limited to, gender roles, gender identities and gender relations.²¹⁹

Gender roles, identities, expressions, norms and relations can serve both as protective and/or risk factors for health.²²⁷ Evidence shows that gender norms – social expectations of appropriate roles and behaviours for males and females – influence overall health and well-being, as does the social reproduction of these norms in

institutions and cultural practices.^{228, 229} A variety of key social institutions, such as the family, culture, media, education, law, and religious and political establishments shape gender expectations, experiences, roles and relationships.^{216, 227} These institutions can also serve to continue and/or perpetuate social and cultural norms and images and ideals of masculinity and femininity that are neither always based in reality nor positive for human growth and development. These societal perceptions can also serve to increase pressure and stress for females and males who are either unable to – or discouraged from – fulfilling or assuming certain roles and responsibilities because they do not fit the prescribed norm.^{216, 217, 227}

Gender norms and roles influence attitudes and behaviours in many areas, including relationships, parenting,

schooling, work and health practices (e.g. seeking care, support and treatment).^{216, 228} Gender roles can also create economic and cultural pressures that affect the health of females and males differently.²¹⁸ Gender norms concerning work roles, the division of paid and unpaid labour and the occupations of males versus females can result in different exposures and vulnerabilities. These, in turn, result in varying health needs, behaviours and outcomes. For example, women are more often the primary caregiver (i.e. of children and/or elderly parents), which can create obstacles or barriers to education, employment and career advancement, resulting in increased stress or burden that impacts their health.^{218, 230-232}

Why sex and gender matter to public health

Public health serves to support, promote and protect the health of all Canadians.⁴ It strives to ensure that all people – from birth to the end of life – enjoy universal and equitable access to the basic conditions that are necessary to achieve optimal health and well-being.^{5, 6} By helping to provide opportunities to achieve optimal health and well-being, more Canadians can live longer, healthier lives.

A greater awareness and understanding of the role of sex and gender in an individual's health can help to improve the health of all Canadians.²³³ Sex can be a factor that influences health, for example, men and women may show different symptomology for diseases and conditions and may respond differently to drugs and therapeutics due to physiological and hormonal differences as well as differences in body composition.²¹⁸ Some diseases and conditions may exclusively affect women or men, may be more prevalent in either of the sexes or may affect men and women differently.¹⁸

Gender is another important variable. It can affect health as a result of the different roles and responsibilities ascribed to people according to their gender. For example, masculinity is often associated with strength and resilience, which means that some masculine individuals (whether they are male or female) may be less likely to seek help for health concerns if they prefer to "tough it out." Males tend to take more safety-related risks and are more often injured.^{218, 225, 228} On the other hand, femininity

Gender identity refers to how we define ourselves on the gender continuum (as man, woman or another identity in a spectrum of gender identities). This identity can affect our feelings and behaviours.^{216, 226} Gender identity is not the same as sexual orientation – one can identify as female and be sexually attracted to women, men, neither or both. Rather, gender identity encompasses one's sense of being a woman or man. Most individuals develop a gender identity within the context of societal prescriptions about the appropriate expression of gender for their biological sex (as female or male). In other words, as we learn to think of ourselves as female or male, we also learn what behaviours, emotions, relationships, opportunities and work are considered appropriate for females and males.²¹⁶

Gender roles are the means by which we express or enact our gender identity.²¹⁶ They are the "behavioural norms typically applied to males and females in societies, that influence individuals' everyday actions, expectations and experiences, for example, how we dress or talk, what we aspire to do and what we feel are valuable contributions to make as a woman or a man."²¹⁶

Gender relations "refer to how we interact with or are treated by people in the world around us, based on our ascribed gender. Gender relations affect us at all levels of society and can either restrict or open opportunities for us."²¹⁶

is often associated with appearing “delicate,” which can discourage some females and males from participating in certain physical activities that might otherwise improve their physical and mental health.^{216, 218}

Exploring gender can be complex due to the dynamic and changeable nature of the social and cultural environment in which Canadians live. Cultural norms and values can shape and determine gender, and such norms and values differ from place to place and evolve over time. As a result, our experiences of health are a complex blend of our “maleness” and “femaleness” mixed with our cultural identity and social environment.¹⁸ Attention to gender contributes to a greater understanding of how cultural and social environments can affect both males’ and females’ exposure to disease and injury, access to resources that promote and protect health, and differences in risk factors, including the manifestation, severity, frequency and social and cultural responses to illness and disease.¹⁸

Applying a sex and gender lens to health can help identify how both influence health status.¹⁸ It is crucial to understand and appreciate the impacts of sex and gender and to attend to these impacts in public health.²¹⁹ Doing so facilitates better health for all Canadians and encourages more comprehensive health research, policies and programs. This results in public health interventions that are more effective and inclusive.^{219, 234, 235}

Consideration and integration of sex and gender into health research, policies and programs is critical to progress and advancement in population health.²³⁶ A population health approach “considers the full range of social, economic and physical factors that can influence health and plans how interventions will be informed, targeted, implemented and evaluated accordingly.”²¹⁸ The approach focuses on maintaining and improving the health status of the entire population to reduce health inequalities among population groups.^{11, 237, 238} Taking a population health perspective that is cognizant of sex and gender differences can increase knowledge and encourage awareness and participation. Doing so will aid researchers and policy makers in developing promising practices that will help address health issues for all Canadians.^{216, 217}

Sex, gender and the broader determinants of health

Sex and gender interact with a variety of other determinants of health to influence individual and population health.²¹⁸ Each determinant of health can, in turn, influence health risks, opportunities, behaviours and outcomes at every stage of life.^{10, 16} (See “Determinants of health.”) Consequently, each determinant of health by itself is important for optimal health and well-being.¹⁰ In addition, these factors intersect with each other, creating complex and varied contexts within which people make choices and enact behaviours that ultimately also affect health outcomes across and within populations.^{10, 216-218, 232, 233}

Within the broader determinants of health, socio-economic factors such as income, education and employment, often referred to as the “social determinants of health” interact with both sex and gender and can lead to differences in health status.^{218, 239} These factors relate to an individual’s place in society – the circumstances in which people are born, live, work, play, interact and age.^{240, 241} Socio-economic factors can contribute to inequalities in health outcomes not only between women and men, but among and between different

Determinants of health

- income and social status
- social support networks (e.g. family, peers)
- education and literacy
- employment and working conditions
- social environments (e.g. community, workplace)
- physical environments (e.g. housing, community infrastructure)
- personal health practices and coping skills
- healthy child development (including/during pregnancy)
- biology and genetic endowment (e.g. sex)
- health services
- gender
- culture (e.g. Aboriginal status, racial and cultural identities)¹⁰

groups of women and men.²¹⁸ These factors can influence opportunities for good health and well-being.^{10, 240, 241}

Each determinant has the potential to influence a person differently depending on their sex and gender.²¹⁸ To enable all Canadians to achieve good health and well-being, people need opportunities to access the conditions and services necessary to achieve optimal health.^{216, 217}

Canadians constitute a diverse population marked by differences in income, living conditions, geographic location, level of education, employment, ability, age, sex, gender, sexual orientation, Aboriginal status and racial and cultural identities. Diversity can influence opportunities for health; exposures and susceptibility to risk; and access to health, social services and supports. It can also contribute to increased risk or affect exposures to various risk factors, diseases and health outcomes, ultimately resulting in inequalities in health status.^{22, 242, 243}

By understanding and addressing factors that contribute to inequalities in health, it is possible to influence and create the conditions for meeting the diverse needs of individuals, supporting healthy choices, diminishing and/or reversing unhealthy living practices, mitigating risky behaviours, reducing barriers and promoting positive lifelong health.^{10, 16, 216-218, 240, 241}

Sex- and gender-based analysis: a tool

Gender mainstreaming in public health is a process of working towards systematic and consistent consideration of both sex and gender in the development, implementation and evaluation of studies, policies and programs in the interest of advancing health equality. While many recognize the benefits of applying a sex and gender lens to public health action, some challenges remain.

SGBA is a valuable tool for analyzing how both sex – rooted in biology – and gender – rooted in social roles shaped by environment and experience – influence an individual's health and well-being.²⁴⁵ Being a man or woman can have a considerable impact on our resources and opportunities for good health, exposure and susceptibility to health risks, access to and effectiveness

Health inequalities are differences in health status experienced by various people or groups in society. These can be the result of genetic and biological factors, choices made or by chance, but often they are due to unequal access to key factors that influence health, for example, income, education, employment and social support.²⁴

Diversity refers to variations or dissimilarities between and among people. It is often used to denote observable differences, such as visible ethnic variations in a population and distinctions in age or location of residence. However, diversity can also include differences that are not always evident, such as sexual orientation and level of education.^{216, 217}

of health services and programs, and overall health outcomes.^{22, 245}

SGBA allows for critical examination of research, policies and programs to ensure they meet the diverse needs of all women and men, girls and boys. It can help identify how various factors may differentially affect women's or men's health status, including their access to and interaction

Gender mainstreaming, as defined by the United Nations Economic and Social Council, is the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in any area and at all levels. It is a strategy for making the concerns and experiences of women and men an integral part of design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres, so that women and men benefit equally and inequalities are not perpetuated. The ultimate goal of mainstreaming is to achieve gender equality.²⁴⁴

Sex- and gender-based analysis (SGBA) is a systematic approach to research, policies and programs that explores biological (sex-based) and sociocultural (gender-based) similarities and differences between women and men, boys and girls.^{22, 218}

with the health care system and related public health and social services (see Chapter 4 “Incorporating Sex and Gender into Health Interventions” for more information on how SGBA can be considered and implemented into public health practice).^{22, 216, 217, 236}

SGBA is consistent with the population health approach in that it analyzes variations in health status by sex and gender. It also demands consideration of the different ways determinants of health influence the health of men and women, boys and girls.²¹⁸ As a tool, SGBA can challenge the assumption that women and men are affected in the same way by research, policies and programs or that the risk, cause, impact and service delivery of certain health issues are unaffected by sex and/or gender.²² Rather than assuming that “one size fits all,” SGBA reminds us to ask questions about differences and similarities between and among individuals of different sexes or gender identities.²¹⁷ By asking these questions, SGBA can help reduce inaccurate assumptions and lead to positive changes in how programs are offered and how we can most effectively allocate resources.^{216, 217}

SGBA is both necessary and possible in all areas of health research, planning and policy-making. It can help foster a deeper understanding of how women and men differ in patterns of illness, disease and treatment. It can also advance research and development on how these factors and patterns are influenced by social structures, experiences, norms and culture.^{216, 217} When this information is then applied to practice, it can encourage appropriate and effective developments, recommendations and interventions, ultimately in an effort to promote, improve and maintain positive health outcomes for all women and men, girls and boys and those who do not strictly identify themselves using these categories.²⁴⁶ It helps ensure that interventions reach those at greatest risk and are appropriate to their needs, which improves both effectiveness and efficiency. It can help to secure the best possible health for all Canadians.^{22, 216, 217}

Summary

Sex and gender are critically important considerations to all areas of public health including research, programs and policies. Understanding the relationships among sex, gender and the other determinants of health and how they intersect to influence health opportunities, risks and outcomes is critical to achieving optimal health and well-being for all Canadians.



Sex, Gender and Health Outcomes

This chapter highlights one specific example in each of the areas of physical health, mental health and sexual health to illustrate key points in how health outcomes, including symptoms, diagnostic tools, treatment effects and access to care, are affected by sex and gender. It is not meant to provide an in-depth sex- and gender-based analysis of these issues but rather a brief demonstration of the ideas. The examples are not necessarily the most important or critical health issues affected by sex and gender. Nevertheless, they demonstrate the varied ways in which sex and gender can influence a range of issues. Using these illustrations, it can be seen how and why many health outcomes differ between men and women and can gain insights into the influences of sex and gender on those differences.

Physical Health

As seen in Chapter 1, some of the most common physical health issues for Canadians are chronic conditions that affect individuals across the lifecourse. One of the most prevalent of these is hypertension (high blood pressure), a leading modifiable risk factor for cardiovascular disease which, as seen in Chapter 1, is a leading cause of death



for both men and women in Canada.²⁴⁷ Since hypertension usually has no symptoms, it is easy to overlook its presence, allowing it to go undiagnosed.²⁴⁷ Although hypertension is equally prevalent in men and women, they are neither equally affected nor do they have the same risks. To help improve the likelihood of screening and diagnosis, it is useful to understand the level of risk for men and women, how their risk varies and how the disease may affect individuals differently because of their sex and gender. This chronic condition is used to illustrate those influences on the physical health of Canadians.

How sex influences physical health risks and outcomes

The two numbers that make up the measure of blood pressure are systolic pressure (the “top” number) and diastolic pressure (the “bottom” number).²⁴⁷ The percentage of Canadian men and women with high systolic or diastolic pressure or both are roughly equal. When those numbers are considered separately, however, women are more often diagnosed with isolated systolic hypertension (with normal diastolic blood pressure) than are men, whereas men are diagnosed with diastolic hypertension more often than are women.²⁴⁸ Systolic blood pressure has been shown to be a better predictor of risk for cardiovascular disease and kidney disease than diastolic blood pressure.²⁴⁹ In addition, hypertension is a greater risk factor for heart failure for women than for men.²⁵⁰⁻²⁵²

Prevalence and incidence rates of hypertension increase with age in both men and women. However, among those who are younger than age 70, the annual rate of newly diagnosed cases is slightly higher for men than for women, whereas from the age of 70 years and onward it is the reverse, with the annual incidence rate for women being higher.²⁴⁷ Prevalence also starts out higher in men, yet tends to be higher in postmenopausal women than in men of the same age.^{247, 253, 254} Evidence shows that sex hormones, specifically androgens such as testosterone, play a role in those differences. As early as adolescence, with increasing androgen levels during puberty, blood pressure is higher in boys than in girls.²⁵⁵ Conversely, premenopausal women may be protected from hypertension by female sex hormones such as estrogens;

as levels of these decrease after menopause, the prevalence of hypertension increases.²⁵⁵

Two sex-specific forms of hypertension occur only during pregnancy: gestational hypertension and preeclampsia can seriously harm both mother and child and can even be fatal.²⁵⁶ While both conditions resolve after the birth, they have been shown to increase the risk of future hypertension or cardiovascular disease for these women.²⁵⁷⁻²⁵⁹ Oral contraceptive users, regardless of age, level of physical activity, family history of hypertension, body mass index, alcohol consumption, cigarette smoking or ethnicity, are at increased risk of hypertension compared with women who do not use oral contraceptives.²⁵⁴

Men and women also respond differently to treatment for hypertension. Canadian data show that among those aged 60 years and older who were using antihypertensive medications, women were significantly less likely to have their blood pressure controlled. Similar results have been found in other countries, but in all cases the sex and gender influences on this effect are not clear.²⁴⁸

How gender influences physical health risks and outcomes

Canadian men and women who are aware that they have hypertension are equally likely to have it treated.²⁴⁸ However, compared with women, men are significantly less likely to be aware of their hypertension and as such fewer receive treatment for their condition.²⁴⁸ Men may be less aware of their hypertension because gender influences their health care-seeking behaviour. Men tend not to seek out care because social norms promote the idea that it is more masculine to not been seen as weak and to “tough it out,” whereas the idea of caring for one’s health and showing vulnerability are seen as feminine traits.²⁶⁰

By interacting more often with the health care system than men, women have more opportunities to have their blood pressure checked, increasing their awareness of their hypertension status.^{44, 261} In 2010, women – particularly younger women – were consistently more likely to report having had their blood pressure checked within the last two years than were men.⁴⁴ The two most common reasons given by Canadians who had never had

their blood pressure checked were that they did not think it was necessary and that they had not “gotten around to it.” Men and women were equally likely to respond in this way. However, significantly more women reported that they had not had their blood pressure checked because their doctor did not think it was necessary.⁴⁴

Gender intersects with sexual orientation which can influence health outcomes. For example, in addition to the general stresses experienced by all Canadians, sexual minorities can be affected by the additional stress associated with the stigma, discrimination and harassment they often experience.^{262, 263} Given that stress is a risk factor for hypertension, this “minority stress” may help explain the fact that when self-reported rates of hypertension are broken down by sexual orientation, outcomes vary from those of the population as a whole.^{44, 262-264} The roughly equal rates of hypertension in men and women hold true among heterosexual Canadians, but not for gays, lesbians and bisexuals. Rates of hypertension are higher among gay and bisexual males than rates among lesbian and bisexual females. Gay and bisexual males also have higher rates of hypertension than do heterosexual males, whereas lesbian and bisexual females have lower rates than do heterosexual females.⁴⁴

Obesity, sodium intake and lack of physical exercise are all risk factors for hypertension. These factors, in turn, are related to gender and socio-economic factors.^{265, 266} For example, there is some evidence that hypertension rates vary by income, although the patterns vary with gender. Canadian data shows that prevalence of hypertension tends to decrease as income increases for women, whereas for men it tends to fluctuate as income changes, with no clear pattern.⁴⁴

Mental Health

Sex and gender play a critical role in the mental health and well-being of Canadians. Biology and the physiological changes that occur over the lifecourse affect an individual’s likelihood of particular outcomes and also influence their responses to developmental stages and life events. For example, biological and socially constructed differences between men and women interact to affect individual susceptibility to particular mental health risks and health-seeking behaviours. They also affect

the responses of the health care sector and society as a whole, to mental health. It is important to recognize how culturally imposed gender roles affect the control that some men and women have over the socio-economic determinants of their mental health.^{68, 267, 268}

Of the various mental health issues and illnesses that affect Canadians, schizophrenia, suicidal behaviours and mood disorders provide some compelling examples of the differences in mental health status that may be related to sex and gender. For example, while rates of schizophrenia are roughly equal among men and women, men develop the illness earlier in life whereas women develop it later when they also display mood symptoms more prominently.²⁶⁹ In the case of suicide, men account for four out of every five deaths by suicide in Canada, yet women attempt suicide more often. Most individuals who attempt or complete suicide have some form of mental illness – most often depression.^{68, 269-271}

As seen in Chapter 1, mood disorders, including bipolar disorder and depression, are the most common forms of chronic mental illness, affecting individuals of all ages.²⁶⁹ In 2002, 12.2% of Canadians 15 years or older (15.1% of females and 9.2% of males) met the criteria for having experienced an episode of major depression at some point during their lifetime.⁶⁸ Rates increased with age after puberty, except among the oldest age range, and were consistently higher among females.⁶⁸ These rates, based on self-reported data may actually be an underestimate given the potential for recall bias in survey responses. Additionally, they do not include those living in care facilities, such as seniors living in residential care where it is estimated that 44% of residents live with a diagnosis or symptoms of depression.²⁷² Survey data also indicate that the rates of depression among Aboriginal populations are higher than among Canadians overall. In 2001, 12% of First Nations adults not living on a reserve suffered an episode of major depression during the previous year, compared with only 7% of all Canadians that year. As with the overall population, First Nations women experience higher rates of depression than do First Nations men. Only 3.1% of the Inuit population met the criteria of having experienced a major depressive episode based on 2001 Statistics Canada survey responses.⁶⁸ However, suicide rates in Inuit regions are more than 11 times higher than the rest of Canada.²⁷³ It is possible that some incidences



of depression may not be acknowledged, particularly among men where depression may manifest as alcohol abuse, violence or conflict with the law.^{68, 269}

The specific example of depression is used here to examine the influence of sex and gender on the mental health of Canadians.

How sex influences mental health risks and outcomes

Depression is the most common mental health problem among women, among whom it may also be more persistent and more severe.^{268, 269, 274} Before puberty however, rates of depression are slightly higher in boys than in girls. Between puberty and menopause, rates in women are two to three times higher than in men. After menopause, the prevalence rates of depression in women begin to decline until they become similar to those in men near the end of the lifecourse.²⁷⁵ This pattern of sex differences in prevalence rates over the lifecourse

suggests that sex hormones may play a significant role in rates of depression.

Women may be at risk of depression both during and after pregnancy, due in part to the dramatic hormonal changes that occur at that time.^{267, 276} Up to 13% of women experience depression at some point during pregnancy, and following pregnancy up to 80% of women may experience mild mood disturbances lasting a few days, known as the “baby blues,” which generally do not require clinical treatment.^{68, 277} However, hormonal and other physical changes combined with caring for a newborn and other environmental stressors can trigger postpartum depression (PPD), a serious condition that affects about 10% to 15% of mothers and is characterized by long-lasting depressed feelings, low self-esteem, anxiety and agitation.^{68, 276, 278} Previous depressive episodes are a risk factor; 25% of women with a history of depression and over one-half of women with previous episodes of PPD are at risk.⁶⁸ Research also shows that, compared with Canadian-born women, immigrant women are more likely to suffer from PPD; they may be especially vulnerable if they are socially isolated and lack the support of an extended family.^{279, 280} There is also evidence that the risk of depression increases for women during the transition to menopause. Again, it is fluctuating hormone levels which appear to be the cause of the increased risk.²⁸¹

Although many studies have examined the possible link between levels of women's sex hormones and depression, few have explored any possible connection between male sex hormones and depression. Research has attempted to explain lower rates of depression in men in terms of differences in the way in which male and female brains respond to stress.^{282, 283} The results of these are inconclusive, however, and more research is needed.

Self-reported signs and symptoms of mental health often differ between men and women. Women tend to report feelings of helplessness or worthlessness as well as persistent sad moods, whereas men are more likely to report feeling discouraged, angry and irritable.²⁶⁹ It is unclear whether this is a biological difference in the symptoms or a gender influence in how those symptoms are described and interpreted.

How gender influences mental health risks and outcomes

Gender plays a key role in the diagnosis of depression. Women report higher levels of distress than do men and are more likely to seek help from health care professionals for mental health concerns.^{68, 267} When experiencing similar symptoms, women are more likely than men to perceive an emotional problem. Similarly, even when men and women present identical symptoms or score similarly on depression measures, physicians are more likely to diagnose depression in women than in men.^{267, 268} Accurate diagnosis is further impeded by men's tendency to acknowledge physical symptoms more easily than emotional ones.²⁷⁰

One of the principal barriers preventing men from seeking help for mental health problems is the expectation that they be tough and strong. This societal expectation may foster a silence that prevents accurate diagnosis and treatment of psychological disorders. Rather, men may adopt negative coping mechanisms and act out with hostility, violence, alcohol and/or drug abuse and other risky behaviours. This may mask their depression and result in damaging consequences to themselves or others.^{68, 268-270}

Because of their socially constructed role, men may be particularly affected by unemployment and changes in socio-economic status. A 2005 United Kingdom study indicated that men who experienced a drop in socio-economic status were four times more likely to develop



poor mental health, including depression, than men who had improved their socio-economic status. While more women than men in the study experienced poor mental health, there was no apparent difference between those who experienced upward or downward changes in socio-economic status.²⁸⁴ A study of 2000/2001 Canadian Community Health Survey (CCHS) data however, found that men who were recent immigrants and who had low incomes reported lower rates of depression than their middle- or high-income counterparts, whereas low-income recent immigrant women reported higher rates of depression than their middle-/high-income counterparts.²⁸⁵ This difference suggests that there may be an absence of risk for low-income recent male immigrants or even a low-risk advantage.

Due to internalized and environmental homophobia, biphobia and transphobia, and consequential prejudice and discrimination, sexual and gender minorities commonly experience anxiety and depression and are more likely to have thoughts about or complete suicide.²⁸⁶ Historically, Two-Spirit Aboriginal people were valued members of their communities, recognized for their special gifts. Since the imposition of a western worldview they have become stigmatized and devalued, which adds to distress and impacts on the mental health of some of these individuals.^{287, 288} Gender expectations and roles may also lead to disproportionate rates of poor mental health among sexual minorities. For example, gay men in particular transgress the gender role expectations of “masculinity” (head of the traditional heteronormative family, etc.). This may lead to stigmatization, alienation and discrimination, which can cause reduced self-esteem and internalized homophobia, and hence depression, substance use and other mental health issues.^{263, 289, 290} Data from the 2003 and the 2005 CCHS indicate that comparatively high proportions of bisexuals reported mental health problems. Bisexual men described their mental health to be “fair” or “poor” at more than twice the rate of heterosexual men, whereas bisexual women were over three times as likely as heterosexual women to report “fair” or “poor” self-perceived mental health.²⁹¹ Significantly higher proportions of sexual minority groups also reported diagnoses of mood and anxiety disorders than did the heterosexual population. Gay and bisexual men were almost three times as likely as heterosexual

men to report a mood disorder, while lesbians were one-and-a-half times and bisexual women more than three times as likely as heterosexual women to report such a diagnosis.²⁹¹

Overall, lesbian, gay and bisexual (LGB) Canadians are more likely to consult mental health service providers and have higher utilization rates of professionals providing emotional and mental support. It has been suggested that there is a positive norm for using mental health services in LGB communities and that lesbians and bisexual women in particular may consider psychological counselling to be important. This health care-seeking behaviour could be triggered by stress related to discrimination faced by individuals in this population.²⁹¹

To date, little research has examined the physical, mental and sexual health needs and concerns of transgendered and transsexual youth or adults.^{286, 292} One recent large-scale study that examined the mental health needs of 392 male-to-female and 123 female-to-male transgendered persons found that low self-esteem was common among all participants. In addition, 60% were classified as clinically depressed, and 32% reported attempting suicide. The study also found that attempted suicide was significantly associated with depression and low self-esteem as well as with a history of forced sex, drug and alcohol treatment and gender-based discrimination.²⁹³ In general, gender minorities have difficulty addressing their trans health needs with health care professionals who are under-prepared and inadequately trained to deal with the comprehensive health needs of this population.²²⁹

Stress is considered a major risk factor for depression, and socially constructed gender roles may influence the different sources of stress experienced by men and women.⁶⁸ The 2002 Mental Health and Well-being Survey asked respondents to identify the most important source of feelings of stress in their lives. A greater percentage of men than women reported their work situation and finances as the most important sources of stress. Women were more likely to report that caring for a child, personal or family responsibilities, and health of family were the most important sources of stress.⁶⁸ Other sources of stress for women include environmental factors such as sexism, heterosexism and the associated discrimination; experiences of physical and sexual violence, including as

a result of childhood maltreatment or intimate partner violence; and the pressures of lone parenting.^{225, 267} These differences in sources of stress seem to reflect societal constructions of gender roles and expectations of men as providers and women as caregivers.

Socially determined gender roles more frequently place women in situations where they have little control over important decisions concerning their lives. For example, women more often carry the responsibility of caring for relatives with physical or mental illnesses while lacking the social support required to perform this function. Resultant feelings about such a lack of autonomy can result in low morale and high stress and are associated with depression.²⁶⁷

Sexual Health

Sexual health outcomes are often described in terms of their links to fertility and sexually transmitted infections (STIs). Sexual health also encompasses attitudes and behaviours pertaining to sexual acts (e.g. intercourse) and other factors (e.g. relationships) that may influence the sexual health of men and women in positive or negative ways. In this section, nationally notifiable STIs are used to illustrate the relationship between sex, gender and sexual health outcomes.

As discussed in Chapter 1, the rates of STIs reported to the Canadian Notifiable Disease Surveillance System (CNDSS) differ for men and women. In 2009, young adults between 20 and 24 years had the highest reported rates of chlamydia, with the rate among young women twice that among young men.¹⁶⁹ The highest reported rates of gonorrhea were also among those in the same age group, but in this case, there was no significant difference between young men and young women. However, the infection rate was more than twice as high among adolescent girls than adolescent boys (15 to 19 years), whereas among adults 25 years and older, men had higher rates than women.¹⁷¹ Unlike chlamydia and gonorrhea, reported rates of infectious syphilis in 2009 were higher in males than in females in all age groups.¹⁷⁰



How sex influences sexual health risks and outcomes

Biological differences between men and women can result in differences in susceptibility and in the effects of STIs. In general, female anatomy makes women more vulnerable to acquiring STIs through some forms of sexual contact, which partly accounts for the higher reported rates of particular STIs in this population.^{294, 295} Physiological changes in the cervix during adolescence increase the risk of infection among girls in this age group.²⁹⁶

If left untreated, STIs can lead to dangerous outcomes in both men and women. Women with chlamydia or gonorrhea are at risk of developing pelvic inflammatory disease that may lead to scarring of the fallopian tubes, infertility and potentially fatal ectopic pregnancy.²⁹⁶⁻²⁹⁹ Babies born to women with chlamydia may be premature or have eye infections or pneumonia, whereas those who contract gonorrhea during birth can suffer blindness, joint infections or life-threatening blood infections.^{297, 298}

Although complications from chlamydia and gonorrhea are less common in men, both can lead to epididymo-orchitis (painful swelling of the epididymis portion of the spermatic ducts and the testes) as well as scarring of the urethra, possibly resulting in infertility.^{297, 298, 300}

Outcomes of a syphilis infection can be equally serious for both men and women if left untreated. Syphilis can cause damage to the brain, heart, bones and other internal

organs, possibly causing death regardless of biological sex of the infected person. Women who are infected during pregnancy can also pass this infection to their babies, which can result in congenital abnormalities, stillbirth, developmental delays, seizures or death.^{301, 302}

How gender influences sexual health risks and outcomes

In addition to biological sex differences, gender influences affect the risk, incidence and outcomes of STIs as well as the likelihood that someone will be tested for and diagnosed with these conditions. Gender acts through societal roles and expectations about power sharing within sexual encounters, to affect sexual health outcomes.

The consistent use of male and female condoms and dental dams is known to be among the best ways to prevent STIs.³⁰³ Several gender-related issues affect the use of such protection, however. For example, negotiating the use of barrier protection during sexual activity is influenced by the gendered nature of sexual relations and the power relations between the individuals involved. Depending on the circumstances, the likelihood of not using protection may increase, thereby increasing the risk of contracting STIs.

In male-female relationships, preventing pregnancy may also motivate the use of condoms. However, such a decision may be influenced by gender norms and roles in which the woman has been given the option, and often the expectation, to control pregnancy prevention for herself.²⁵³ If other contraception methods are being used, condoms may be considered unnecessary, increasing the risk of STIs in new or non-monogamous relationships. For some men, cultural influences, such as being seen as “macho,” may deter them from using condoms.^{304, 305} For men who have sex with men (MSM), increased condom use in the 1990s paralleled increased knowledge of the dangers of HIV and AIDS, which indicates the value of education regarding condom use.³⁰⁶

Both men and women may also participate in consensual sex for reasons other than personal pleasure, such as the desire to please others, or in exchange for money, drugs or other material goods.^{175, 307} Those involved in survival sex (exchanging sex for money, drugs, shelter or food),

or who are abused or forced to have sex against their will may be at a particular disadvantage in negotiating the use of protection during sexual activity. Survival sex, unwanted sex and sexual assault more often place women at risk, although they are a concern for both men and women.^{225, 307} All of these situations may make it more difficult to negotiate the use of condoms or other latex barriers.¹⁷⁵

According to the 2010 CCHS, almost two-thirds (65%) of sexually active single youth and young adults, between 15 and 29 years, reported using a condom the last time they had sexual intercourse during the past year.⁴⁴ The proportion was higher among males (70%) than females (60%).⁴⁴ Less than one-half (47%) of single adults between 30 and 49 years had used a condom during their last sexual encounter in the past year – 50% of men and 43% of women.⁴⁴ According to the 2008/2010 First Nations Regional Health Survey (RHS), 18% of sexually active First Nations youth (between 12 and 17 years) living on a reserve or in northern communities reported only occasionally or never using a condom.¹⁴⁶ Among sexually active First Nations adults living on a reserve or in northern communities, nearly one-half (48%) reported never using a condom.¹⁴⁶

Having unprotected sex with multiple partners may also increase an individual’s risk of contracting an STI simply by increasing the chance of being exposed to someone already infected. In 2010, 14% of Canadians between 15 and 49 years who reported having had sex in the previous 12 months said they had had more than one sexual partner (17% of males and 11% of females).⁴⁴ Younger respondents between 15 and 29 years were much more likely to report multiple partners than were those aged 30 to 49 years (27% compared with 7%). In both age groups, the proportion of males reporting multiple partners was much higher than the proportion of females – 32% compared with 22% for the younger group, and 9% compared with 5% for the older group.⁴⁴ Although multiple partners were reported across all types of relationships, those who were single (including widowed, separated or divorced) reported the highest proportion overall (36%) of multiple partners in the past year.⁴⁴ More specifically, younger (15 to 29 years) divorced females and younger separated males were the most likely (77% and 65% respectively) to report multiple partners,

while younger widows (0.0%) and older (30 to 49 years) married females (0.7%) were the least likely.⁴⁴ Among sexually active First Nations youth (12 to 17 years), 44% reported in the 2008/2010 RHS that they had more than one sexual partner in the past year.¹⁴⁶ For First Nations adults, a higher proportion of males (23%) than females (17%) reported having more than one partner.¹⁴⁶

Adolescence is a particularly important period when social contexts provide clues and cues about what constitutes safer or riskier sexual behaviour. Early age of sexual debut has been associated with increased likelihood of early age pregnancy and STIs.^{308, 309} In 2010, of those between 15 and 29 years who reported having had sexual intercourse, the average age of first intercourse for both males and females was around 17 years with 26% having done so for the first time before age 16 years (27% of males and 25% of females).⁴⁴ In comparison, among adults aged 30 to 49 years, the average age of first sexual intercourse was a little older than 18 years (slightly younger than age 18 years for males and closer to age 19 years for females). In addition, only 18% reported that they had had sexual intercourse before age 16 years, and the proportion was much higher among males than females (23% compared with 14%).⁴⁴ This suggests that the age of sexual debut in Canadians is decreasing and the gender gap is closing. According to the 2008/2010 RHS, 47% of Aboriginal youth between 15 and 17 years reported being sexually active.¹⁴⁶

Although STI rates are highest in Canadians under 30 years of age, they are increasing faster among adults between 40 and 59 years. The reasons for these increases in older adults are not entirely clear, but it has been noted that middle-age or older people are usually ignored in prevention programs that tend to focus on younger age groups who are more at risk.^{310, 311} Older adults rarely discuss the topic of sexual health during visits with their physician and often delay seeking treatment, perhaps due to shame, fear and embarrassment in discussing their sexual health concerns.^{177, 310} Given their stage of life, older adults may consider condom use unnecessary because they are less concerned about pregnancy risk.³¹⁰

Timely and appropriate testing, diagnosis and treatment prevent the spread of STIs and ongoing negative health consequences. However, as mentioned earlier, gender

norms influence access to care and men and women do not access health care systems at the same rate or for the same reasons.²⁶⁰ Since women tend to interact more frequently with the health care system, they are more likely than men to have the opportunity for routine screening or to seek treatment for STIs.^{44, 312} This may partly explain the differences in reported infection rates: because more women are tested, more infections are diagnosed and reported among women than men.

Various factors may prevent men and women from being tested for STIs. One is misinformation surrounding testing procedures, such as the assumption that Pap tests also test for all STIs, or that STI testing for men involves a painful urethral swab.^{313, 314} Males have also reported concerns related to sexualization of the clinical experience, fearing that they or the provider may see, or react to, the interaction sexually since it involves the genitals.³¹⁴ Stigma also acts as a deterrent to testing for males and females of all ages, and is a particular problem for sexual and gender minorities.^{313, 315, 316} College students in the United States reported concerns about testing for STIs, including the gender of the provider, accessibility, confidentiality and potential damage to their reputation.³¹⁷ In 2009, 27% of surveyed Toronto youth feared they would be judged or subjected to embarrassment if they accessed sexual health services.³¹⁸ Screening sites and clinic procedures have been found to be more welcoming and directed towards females, which may discourage males from accessing the services. Research in British Columbia also found that privacy concerns, inaccessible clinic hours, clinic decor and perceived homophobia were barriers to testing for some young men and women.³¹³

The private and personal nature of sexual health issues can make it difficult for many individuals to seek and receive services. This is particularly the case for marginalized groups whose experiences with gendered power relations and their intersections with other social, environmental and structural influences have important implications for a person's ability to negotiate safer sex practices and/or to access appropriate sexual health services.^{315, 319} Stigma and discrimination faced by sexual minorities because they transgress the socially constructed gender role expectations and notions of "femininity" and "masculinity" can negatively influence

their health care-seeking behaviours and experiences as well as whether they disclose their sexual orientation and behaviours to their health care providers.^{313, 320}

Primary care settings need to continue to improve their provision of sexual health services so as to meet the needs of sexual and gender minority individuals.^{229, 321}

Sexual health education has also yet to adequately address the needs of sexual and gender minorities individuals; coupled with persistent homophobia and transphobia in schools, workplaces and other public arenas, some sexual and gender minority individuals face multiple vulnerabilities that contribute to STI/HIV infection risk, and must overcome serious barriers to enacting sexual self-efficacy (i.e. the belief in one's ability to deal effectively with their sexuality).³²¹⁻³²³

Summary

This discussion demonstrates how sex and gender influence behaviours, risks, and ultimately, health outcomes. Approaches to prevent or improve outcomes and/or provide services for those affected need to take into account the roles of biological sex and gender in general. They also need to enhance efforts to address diversity across sexual orientations, ages and settings. The examples included in this chapter highlight the importance of accounting for sex and gender. They also illustrate the significance of constructing interventions that appropriately balance individual and structural approaches to reducing risk and promoting health over the lifecourse. This information can be used as a starting point for determining approaches that ensure all Canadians can benefit from interventions, programs and supports.



Incorporating Sex and Gender into Health Interventions

This chapter explores broad and targeted Canadian and international interventions – research, programs, initiatives and policies – that address health issues and/or risk factors and consider and/or incorporate sex and gender into their design or execution. In doing so, this chapter shows how incorporating sex and gender into programs, policies and research makes a difference to health.

Examples of programs, policies and research that have incorporated sex and gender (in textboxes as well as in the text) are not intended to be a compendium of health issues. They are intended to complement – not mirror – the health issues and risk factors identified in Chapter 3 and also consider the broader determinants of health.

The examples are chosen because they:

- address a known health inequality or gap;
- illustrate differences in experiences and outcomes;
- are available with some measure of effectiveness; and/or
- represent a specific region, sub-population or issue at different stages of the lifecourse.

Portraying a targeted perspective does not negate the existence or the severity of the health issue among populations not profiled. For example, profiling a men's specific health issue or intervention does not suggest that the issue or response is isolated to men; rather this is an example of how Canada, as a society, is considering and incorporating sex and gender in health interventions.

This chapter is organized into three sections:

- The first section illustrates how considering sex and gender is important to health outcomes as well as health research and public health practices.
- The second considers how sex and gender are related to select physical, mental and sexual health outcomes.
- The third shows how sex and gender affect the socio-economic determinants of health and contribute to health inequalities. Addressing determinants of health appropriately can make a difference to health and well-being.

Section One: Sex and gender and public health interventions

Considering sex and gender when developing and delivering programs, policies and practices is important to achieving better health outcomes. Doing so, in part, involves taking actions that generate positive relationships between sex and gender as well as among the broader determinants of health. A sex- and gender-based approach is part of systematically planned interventions that are consistent with population health approaches.^{11, 218}

Integrating sex and gender into health research

There are many reasons for integrating or considering sex and gender into health research that include scientific, methodological and ethical reasons.^{219, 260, 324-327}

The challenges that remain, however, stem from not knowing what sex and gender mean and/or how they apply as well as differences in approach and intensity by research field. Research standards and methodological recommendations are being developed across a number of jurisdictions to address these knowledge gaps.^{216, 219, 326-330}

Historically, research often relied exclusively on male subjects with specific cultural and racial characteristics, the resulting data extrapolated to the entire population.²¹⁶ Women were systematically excluded from research to avoid issues with pregnancy and breastfeeding during research, particularly clinical trials.^{216, 331} Later research showed that sex alone had significant influences on human health in terms of physiology and chemistry and response to disease, pain and treatments.^{216, 219, 328, 331} Failing to implement and consider sex in research compromised its validity and the applicability of programs. Following the advocacy of women's movements, research began to focus on sex differences between men and women including the division of data by sex, treatment of women in clinical practices and consideration of social issues such as sex roles and sex-role socialization.²³³ The evolution of the concept of gender followed, setting the stage for differentiation of sex and gender as two distinct concepts and a recognition that both matter to women's and men's health.²³³ Understanding that sex- and gender-based health research was about everyone's health – not solely

Incorporating Sex and Gender into Health Interventions

about women's health – was a transformative change that is still gaining momentum and endorsement across research areas.^{217, 233, 328} (See the textbox “Incorporating sex and gender into research.”)

Canadian researchers have long criticized approaches that assume that “one size fits all” in terms of programming and services and revealed the problems associated with “gender-neutral” approaches when applied to everyday issues.^{216, 217, 233, 328}

Canada embarked on its commitment to sex- and gender-based work when evidence surfaced that pointed to gaps and inequalities created by not addressing research, programs and policies in the context of sex and gender. By ratifying the Beijing Declaration, Canada agreed to promote gender mainstreaming in all relevant policies and programs.^{217, 342} As part of this agreement, the federal Health Portfolio uses sex- and gender-based analysis (SGBA) to develop, implement and evaluate research,

Incorporating sex and gender into research

Canada has been working towards increasing data capacity in terms of women's health indicators related to numerous health issues (e.g. cancer, musculoskeletal disorders, mental health and violence). Since 1999 and the establishment of *Women's Health Surveillance: Plan of Action for Health Canada* a number of developments, including the *Women's Health Surveillance Report* (2003), pointed to the need for sex- and gender-based indicators.^{253, 332, 333} The plan recommended on-going identification of priorities for indicators based on gaps in women's health surveillance.^{332, 333} Measuring the health status of women is extremely important, partly because much of the previous knowledge base failed to include sufficient data on women's health.^{253, 333}

While some progress has been made, comprehensive indicators in the area of men's as well as trans' health remain to be fully realized. Measuring status, including measurements of sex and gender, can work toward developing comparable and diverse outcomes.³³⁴

The Prairie Women's Health Centre of Excellence developed *A Profile of Women's Health in Manitoba*, a comprehensive review of over 140 indicators of Manitoba women's health including health status, health services use, socio-economic influences, health system performance and lifestyle choices.³³⁵ The review is recognized for applying a gender-based analysis to include, where possible, factors on diversity such as location, race and culture.^{335, 336} Similar to the Manitoba review, *Ontario Women's Health Status Report* also applies a gender-based analysis to both the health and the determinants of health of Ontario women. This report looks at the physical, social, emotional, cultural and spiritual well-being of women and provides information on the demographics, morbidity

indicators, reproductive health, and health behaviours of women. It also provides additional information on sub-populations such as lone mothers, senior women, immigrant and visible minority women, Aboriginal women and rural and northern women.³³⁷

The Health Behaviours of School-Aged Children (HBSC) study is an example of research that broadly includes sex and gender factors as well as the experiences of adolescent boys and girls to understand their mental and physical health and their interactions with the determinants of health.³³⁸ Canada is one of 43 countries that collect data every four years on 11-, 13- and 15-year-old boys' and girls' health and well-being, social environments and health behaviours.³³⁸⁻³⁴⁰ This age is important being as it is a period of increasing autonomy that significantly influences how health and health-related behaviours develop.³⁴⁰ The data allows for cross-national comparisons, trends analysis as well as more in-depth analysis on particular topics.³⁴⁰ Findings are analyzed and examined based on gender; they look beyond the differences between girls and boys to include underlying issues. For example, a recent report, *The Health of Canada's Young People: A Mental Health Focus*, looked at mental health issues and the influence of sex and gender and satisfaction with life and body, relationships, substance use and academic performance.³³⁸ Also explored are factors such as relationships with parents, peers and pressure to conform to cultural as well as social norms.³⁴⁰ As a result of the extensive international HBSC research findings, the World Health Organization (WHO) recommended that member states consider the importance of implementing gender-specific intervention programs.³⁴¹

Incorporating Sex and Gender into Health Interventions

CHAPTER 4

programs and policies. Within the Portfolio, organizations such as the Canadian Institutes of Health Research (CIHR) developed guidelines for research applicants to consider how gender and/or sex might be integrated in areas of health research (including clinical, health systems and social factors).^{23, 343} These guidelines provide key questions to ask about where and how sex and/or gender play a role in the research approach, hypotheses, methods and ethics.³⁴³ CIHR also established the Institute of Gender and Health, which is the only health research funding institute that specifically focuses on gender, sex and health.²³ CIHR and its partner organizations within

the federal Health Portfolio (including the Public Health Agency of Canada and Health Canada) are committed to upholding SGBA. (See the textbox “The Health Portfolio’s Sex and Gender-Based Analysis Policy.”)

A population health approach relies on consistently measuring health indicators (variables that assess the health status as well as factors that influence health) and identifying trends that provide a comprehensive picture of the health of the population.^{13, 239} Effective research involves understanding the different factors influencing health outcomes and building knowledge

The Health Portfolio’s Sex and Gender-Based Analysis Policy

Canada’s commitment to SGBA began in the late 1980s and early 1990s when evidence pointed to gaps created by not developing research, programs and policies in the context of sex and gender. In addition, there was a push for gender equality as per constitutional commitments. In 1995, at the United Nations Fourth World Conference on Women with the *Beijing Declaration and Platform for Action*, the Government of Canada committed to mainstreaming gender-based analysis and equality across federal organizations.^{217, 342, 344} As a result government departments agreed to promote gender mainstreaming in all relevant policies and programs.²²⁰ A review by the Auditor General of Canada in 2009 found mixed progress in implementing gender-based analysis, mainly due to a lack of training, knowledge and guidance about putting it into practice.³⁴⁵

The Government of Canada’s Health Portfolio has a policy in place to use SGBA to develop, implement and evaluate research, programs and policies.²²⁰ The current SGBA policy replaces *Health Canada’s Gender-Based Analysis Policy* (2000) and expands to the entire Health Portfolio (which comprises the following organizations: Health Canada, Public Health Agency of Canada, Canadian Institutes for Health Research, the Hazardous Materials Information Review Commission and the Patented Medicine Prices Review Board).²²⁰ The policy supports:

- a comprehensive understanding of variations in health status, experiences of health and illness,

health service use and interaction with the health system;

- the development of sound science and reliable evidence that captures sex- and gender-based health differences among people; and
- the implementation of rigorous and effective research, programs and policies that address sex- and gender-based health differences among people.²²⁰

The Portfolio’s SGBA policy has five guiding principles: accountability to implement and affect change; continuous improvement by building on experiences and incorporating lessons learned and best practices; integrated approach where SGBA is a natural part of doing business; achieving balance and equal representation in programs and policies; and shared responsibility requiring the participation of all staff in the context of their work and for management to provide leadership to support SGBA.²²⁰ Developments have included CIHR’s guidelines for *Gender and Sex-Based Analysis in Research* and the *Health Portfolio Sex and Gender-Based Analysis Policy*. The broad-based *Aboriginal Specific Sex and Gender-Based Analysis* addresses factors that relate to Aboriginal perspectives on sex and gender.^{346, 347} While evaluations are still pending on how effectively and efficiently programs have engaged SGBA, it is accepted that integrating SGBA into the development, implementation and evaluation of all programs can ensure gender equality, greater effectiveness and efficiency in program delivery and research rigour.^{220, 334, 346}

Incorporating Sex and Gender into Health Interventions

accordingly.²³⁹ Too often data are under-reported, under-collected or aggregated in ways that mask variations associated with sex as well as miss other

important factors such as age, ethnicity and socio-economic status. Sex-based disaggregated data exists in some areas and show differences, however, there are

Approaches to implementing Aboriginal sex- and gender-based analysis

Our Voices: A First Nations, Métis and Inuit Sex- and Gender Based Analysis

Our Voices is an Aboriginal-specific sex- and gender-based analysis (ASGBA) online toolkit that includes data sources, reports, studies and examples that are culturally appropriate and important to First Nations, Métis and Inuit health issues. Our Voices profiles ASGBA information on select issues for health status, health determinants and health services. Organizations, governments, researchers and health officials as well as individuals can access training and information on how to apply ASGBA to their work, thus encouraging better analysis of health issues. The original goal is to build awareness and capacity, improve access and better inform Aboriginal women's health policy, thus moving towards closing the gap in health disparities experienced by First Nations, Métis and Inuit women compared with broader population of women in Canada.³⁴⁷

Assembly of First Nations – Gender-Based Analysis Framework

In 2010, the Assembly of First Nations Women's Council developed a *Gender Based Analysis (GBA) Implementation Strategy* to build capacity and offer training across First Nations regions and in communities in order to meet United Nations Millennium Development Goals of gender equity. This includes implementation, evaluation and monitoring in order to effectively mainstream gender-based analysis. In particular, this approach is used to act against violence towards Aboriginal women and girls.³⁴⁸

Native Women's Association of Canada – a culturally relevant gender-based analysis

While early gender-based frameworks acknowledged the equitable outcomes and impacts to men and women, they have not adequately addressed the unique social and cultural needs and circumstances of all populations.^{349, 350} A history of colonization and male-

centred leadership has disproportionately affected the health of Aboriginal populations in terms of violence, illness and disease as well as socio-economic factors such as poverty, underemployment and inadequate housing.^{349, 350} A culturally relevant gender-based analysis offers some understanding of how gender roles have developed within Aboriginal societies and the path forward. The Native Women's Association of Canada has developed the Culturally Relevant Gender Application Protocol, a means to incorporate culture and gender perspectives and an accountability framework into policy processes.^{349, 350} The protocol contains three components: equity in participation; balanced communication; and equality in results. Within each component, actions are inventoried with measures that track performance and opportunities for best practices and lessons learned. Success is measured based on developments as well as changes in attitudes towards gender – and particularly towards women – and the accountability for long-term outcomes.³⁵¹

Pauktuutit Inuit Women of Canada – an Inuit-specific gender-based analysis of health determinants tool

In 2007, Pauktuutit Inuit Women of Canada began developing an Inuit-specific gender-based analysis tool. The project consisted of two parts; the first was the creation of a culturally relevant gender-based analysis framework, and the second involved culturally relevant health indicators for Inuit women.^{352, 353} In 2008/2009, Pauktuutit used the Inuit-specific gender-based analysis tool to demonstrate overall how food security impacts Inuit women and men differently, as well as to assess how changes to Nutrition North Canada (formerly Food Mail Program which subsidizes shipping of certain nutritious foods to isolated northern communities) might impact Inuit women and men living in the North. Pauktuutit was able to test their tool and gain valuable insight into the needs of the Inuit populations and the unique challenges facing men and women regarding food security.^{352, 354}

limited analyses that explain and understand why and how differences occur. Accounting for and highlighting diversity creates opportunities for better evidence-informed decision-making. This helps to ensure programs are designed that are able to meet the needs of those at greatest risk thereby avoiding an increase in health gaps.^{333, 334} Applying SGBA to research helps to explain the complexity of health determinants, behaviours and outcomes, why differences occur and what can be done to address these gaps.³³³

Tools that incorporate sex, gender and other aspects of diversity into health indicators take SGBA to another level of sophistication. For example, the Aboriginal Women and Girls' Health Roundtable (2005) highlighted the need to develop gender analysis in the context of First Nations, Métis and Inuit populations. As a result, Aboriginal-Specific Sex- and Gender-Based Analysis was developed to look at specific factors with Aboriginal perspectives as well as a sex and gender lens thus encompassing the unique cultural histories and perspectives of First Nations, Métis and Inuit while highlighting differences between and among these populations.^{346, 347} (See the textbox "Approaches to implementing Aboriginal sex- and gender-based analysis.") The *Our Voices* strategy evolved from the identified need to include issues specific to Aboriginal women's health toward a sex- and gender-based approach to data and programs.^{346, 347}



Integrating sex and gender in public health practice

Considering sex and gender in public health interventions involves a broader approach than addressing male and female health outcomes. A sex- and gender-based approach to interventions challenges assumptions that male, female and trans youth and adults similarly experience health outcomes and the interventions intended to address health issues.²³³ Such an approach also challenges tendencies to focus on differences rather than understanding the factors that influence these differences. This approach also encourages planners and practitioners to identify how differences play out in programs and to consider how issues are framed, defined and communicated, how information is collected (and by whom), and how interventions will address the needs of diverse groups.^{218, 233}

For example, human papillomavirus (HPV) immunization is a widely recognized public health practice where applying a sex- and gender-based approach can show different perspectives for disease, outcomes and interventions. (See the textbox "Changing perspectives with a sex and gender lens on a public health issue: the HPV example.") This example is intended to show the difference made by applying a sex and gender lens and does not assess the program per se.

The typical "one size fits all" approach masks diversity among individuals and the broad determinants of health. While it is easier to ask what is happening with girls or women and boys or men and to tailor programs accordingly, this assumes a simple binary classification of male or female rather than a masculine and feminine continuum. In addition, gender norms – in terms of expectations, roles and behaviours – and the continuum of these norms among social and cultural practices directly influence the health and well-being of girls and boys and women and men.²²⁸ These expectations can directly influence attitudes towards health practices such as prevention, support and treatment as well as social practices, including relationships with partners, children and work.^{216, 217, 228}

Gathering information on "males" or "females," and assuming that it is indicative of biological sex and/or being masculine or feminine does not fully address

Incorporating Sex and Gender into Health Interventions

important aspects of identity and biology that need to be addressed in sub-groups of the population. People who identify as trans (transgendered, transsexual, transitioning) do not reflect a homogeneous group. Identifying themselves as “other,” a choice often provided by surveys, perpetuates invisibility and lack of identity.²²⁹

A recent American trend analysis of medical publications from 1950–2007 showed that sexual and gender minority persons were largely invisible or excluded from studies and that medical professionals often did not recognize the health care needs of this diverse population.³⁵⁷ Assuming gender neutrality can further health disparities

Changing perspectives with a sex and gender lens on a public health issue: the HPV example

Applying a sex and gender lens can influence how public health is practiced and understood. Addressing human papillomavirus (HPV) is a good example of how perspectives of practices can vary when sex and gender are considered. While much attention has been paid to the virus and its link to cervical cancer and the use of vaccination to reduce this risk, HPV is also related to other cancer outcomes that can also impact men. HPV has over 100 types and can impact many areas of the body, with varying outcomes for men and women.^{173, 218, 355} Men also play a role in the transmission of disease.²¹⁸

Increasing rates of HPV, especially among young women, and the associated risk of cervical cancer brought about the development and authorization of the HPV vaccination for young females (between 9 and 26 years) according to the immunization needs and schedules of the provinces and territories. In Canada, immunization is a shared responsibility among federal, provincial and territorial governments.³⁵⁵ The federal government is responsible for regulation and oversight of vaccines while the provinces and territories fund and deliver immunization programs.²¹³ By 2008, all provinces and territories had introduced HPV vaccinations programs for girls as part of their routine immunization.³⁵⁵ The vaccine is now used to prevent the infection caused by HPV and its possible long-term health outcomes, particularly cervical cancer.³⁵⁵

Approaching HPV prevention practices with a sex and gender lens can reveal different perspectives, for instance:

- Pap tests and prenatal screening have identified that women over 20 years old (who were not previously vaccinated or screened) are being increasingly diagnosed with HPV;
- Studies have shown a high HPV prevalence rate among heterosexual males and a high rate of

transmission of HPV to female partners from men with existing penile warts;

- Men who have sex with men (MSM) are also at-risk for HPV related cancers (such as throat and anal); and
- Those who may be immune compromised are also at risk for HPV.^{218, 355}

The initial vaccination program does not fully address risks to those outside of the target group (girls 9 to 26 years) including older women, the role males play in transmitting HPV, and protecting boys and men against HPV and HPV-related cancers.^{355, 356} Applying a sex and gender lens would suggest considering these different perspectives. The practice of immunizing only girls may raise questions to some practitioners, as to why boys are excluded and how their long-term risks are being addressed and as well as why do young girls have the responsibility of addressing transmission.^{355, 356} Taking sex and gender considerations into account suggests that the HPV-related health needs of both young and older women and men need to be addressed through public health practices, while continuing to reduce overall health risks.³⁵⁶ However, consideration does not necessarily suggest this would be the most effective practice in terms of costs and risk reduction, nor does it negate the need for on-going health screening processes for all individuals.

In early 2012, the National Advisory Committee on Immunization recommended the use of the HPV vaccine for all males between 9 and 26 years and females 9 to 45 years.³⁵⁵ Evaluations will need to be undertaken to measure how the intervention affects men, women and various sub-populations.³⁵⁵ New data will need to be collected and analyzed to compare results to baseline measures and evaluate effectiveness, including long-term outcomes such as incidence of related cancers.³⁵⁵

as programs fail to examine sex and other socio-economic determinants contributing to ineffective interventions and unintended (but adverse) outcomes.²³³ While the continuums of sex and gender are considered throughout this chapter, the continuum is often lost in the examples of research, programs and policies, and identifying and addressing health issues of trans sub-populations is an on-going challenge.

Embracing the inter-relationships between sex, gender and the broader determinants of health needs to become part of mainstream practice in public health.^{15, 20, 25, 233, 333} The necessary work – in particular, knowledge translation and dissemination of sex- and gender-based research – is less than straightforward as the issues are complex and difficult to measure and communicate.³³³ Nevertheless, accounting effectively for sex and gender health inequalities can contribute to cost savings to the health system and better services in communities.^{216, 333} Further, the exclusion of sex and gender from research, programs and policies is ultimately unethical.²³³ The remainder of this chapter focuses on the effective and promising approaches and interventions that consider sex and gender in terms of select examples of health outcomes as well as the social determinants of health.

Section Two: Sex and gender in select health outcomes

Sex, gender and physical health

Approaches to preventing and managing the onset of chronic disease must reflect differences among men, women, boys and girls so as to most effectively address and/or avoid adverse health outcomes. As outlined in previous chapters, interventions that focus on disease prevention and support healthy living (healthy behaviours and choices) can reduce risk factors for some adverse health outcomes.^{184, 358-360} Opportunities to positively influence health exist at different points across the lifecourse. Some approaches consider the influence of sex and gender that have worked to incorporate different needs within their design and execution.

Promoting healthy weights

Being overweight or obese is a major public health challenge with many contributing factors.^{193, 361, 362} Unhealthy weights can influence the development of many chronic diseases in later life.^{193, 361-363} Generally, those who have poor nutrition and lower levels of daily physical activity are most likely to have excess body weight and hence an increased risk of developing related adverse health outcomes across the lifecourse.^{361, 362} The WHO has developed strategies to address diet, physical activity and health.³⁶⁴ It recommends broad inter-sectoral approaches aimed at several factors, including education, as well as tailoring interventions that take into account context, gender roles and culture.³⁶⁴

An Alberta-based study examined whether sex and gender should be considered in the development and implementation of healthy weight interventions for youth.³⁶³ The study suggested that because differences exist between pre-adolescent boys and girls in terms of behaviours, diet and physical activity, interventions should incorporate sex and gender. Understanding differences based on sex and gender as well as other factors (such as cultural and geographic location) are important to increasing our understanding of how to encourage positive healthy practices among youth.³⁶³ (See the textbox “Healthy Dads, Healthy Kids.”) The results of the study reinforce the need for increased sex and gender consideration in health interventions to maximise effectiveness and delivery.³⁶³

While Canada has recently developed strategies to address obesity, sex and gender were not specifically highlighted. Recognizing gender differences in these areas would allow for the development of more effective health promotion programming.^{363, 365, 366} Providing a gender-focused health promotion intervention could better address physical activity among girls and healthy eating among boys.³⁶³ To be effective, healthy weights programs will also need to consider the needs of visible minorities, sexual minorities and those who live in rural and remote regions.

Systematic reviews and meta-analyses found that school-based health programs can be effective in promoting healthy weights.^{374, 375} The studies have shown the importance of sex-based programming with a gender-based perspective. Generally, girls benefit from learning

Incorporating Sex and Gender into Health Interventions

Healthy Dads, Healthy Kids

To address the growing concern of unhealthy weights in Australia, the University of Newcastle (New South Wales, Australia) developed the Healthy Dads, Healthy Kids (HDHK) program in 2008/2009 to help overweight fathers lose weight and positively influence health behaviours of their children.³⁶⁷⁻³⁶⁹ This family-based program recruited overweight or obese men with children between the ages of 5 and 12 years.³⁶⁸⁻³⁷⁰ Evaluations of the trial program after 6 months revealed that 85% of fathers had achieved

a weight loss greater than 5% of their body weight, reduced their waist circumferences, lowered their blood pressure, increased their physical activity levels, reduced their calorie intake and improved their overall diet.³⁶⁸⁻³⁷¹ Their children had also improved their physical activity levels, reduced their resting heart rate and decreased their calorie intake.³⁶⁸⁻³⁷⁰ Due to its success, the program has been expanded to other communities in Australia.^{370, 372, 373}

environments with a social context that emerge through observation, role-playing/cognition and transition; boys benefit more from programs targeted in environments that support their interests.³⁷⁶ Canadian-based research synthesized best practices on achieving appropriate evaluation techniques that address childhood obesity and related chronic diseases.³⁷⁷ This research considered effectiveness, program development and evaluation as well as the impact on broad population health and certain sub-populations. Results indicated that interventions do not focus on the needs of sub-populations of children and youth – particularly young males – despite the known longer-term rates of obesity-related chronic disease among men.³⁷⁷

School-based programs were found to be beneficial for physical activity interventions, but the benefits were short term, and more could be done to integrate effective programs that address and encourage maintenance of healthy weights.³⁷⁷ The comprehensive school health framework encompasses a whole of school approach that support students educational outcomes while also integrating school health.³⁷⁸ The Pan-Canadian Joint Consortium for School Health, a partnership between federal, provincial and territorial ministries of health and education, supports and encourages the interrelationship between learning and health.^{378, 379} The Consortium works across jurisdictions and sectors to share information and experiences, identify best practices, leverage resources, minimize duplication, foster partnerships and conduct further research in promising area.³⁷⁹ Systematic reviews of comprehensive school health approaches have found

that multifactorial interventions, particularly those involving changes to the school environment, were effective in promoting healthy eating and physical activity.³⁸⁰ Research also showed that age and gender mattered as comprehensive school health programs showed greater benefits in girls and older students.³⁸⁰

Where men and women are involved in similar physical activities, gender-neutral statistics on activities and chronic disease can mask the underlying motivation for exercise and the effectiveness of programs.²¹⁹ The socially constructed contexts in which gender influences physical activity is important to how interventions are managed. In addition, policy and program initiatives need gendered evaluations to assess their effects on and among women and men, girls and boys.

Sex and gender stereotypes influence perceptions of ability and physical activity. Enrolments in sports and physical activities across the lifecourse show stereotypical preferences. Girls often prefer “feminine” activities, for example figure skating, instead of more contact style sports, for example hockey, which see higher enrollment among boys. Similarly, some older women report feeling uncomfortable weight training in a gym as they report perceiving this to be a masculine activity.³⁸¹ What is typically considered “locker-room talk” can take on gendered or sexist language and behaviours; particularly for those boys who do not perform well in physical activities and sports. Strong, physically active girls who exhibit qualities and/or skills socially connected with boys can be stigmatized as tomboys or have

their behaviours extrapolated into presumed sexual orientation.³⁸¹

Students should be able to participate in physical education classes and team sports in a safe, inclusive and respectful environment. Participation in sports, locker room access and privacy for changing clothes often create stress for some youth.²²³ To address the issue of physical activity for transgender and transsexual youth, the Canadian Teachers' Federation created a guide to assist educators in supporting transgender and transsexual youth who, like their cisgender peers, should be able to participate in physical activity classes and recreational and/or competitive sports.²²³ Policies and procedures should be inclusive, regardless of gender identity or gender expression, in an environment free of discrimination and harassment.³⁸² Schools can create this environment by educating staff and coaches, and by working with parents so transgender and transsexual youth are understood and accommodated in schooling.³⁸³

Communities across Canada offer programs that educate and encourage women and girls in sports. Broad-based initiatives such as the Canadian Association for the Advancement of Women and Sport and Physical Activity (CAAWS) have created several projects to promote sport for girls and women and challenge gender stereotypes and homophobia. (See the textbox "Canadian Association for the Advancement of Women and Sport and Physical



Activity.") In 2009, Canadian Heritage adopted *Actively Engaged: A Policy on Sport for Women and Girls* to promote meaningful opportunities for women and girls as athletes, coaches, technical leaders and officials, both nationally and internationally, by having sporting organizations provide quality experiences and equitable support.^{384, 385} The objective of the policy is to foster a positive sporting environment for women and girls that will transcend through a lifetime of sport participation.³⁸⁶ Evaluations of this approach are to begin five years after implementation.³⁸⁶

Sex differences in physical capacity, where men often seem to have more strength and endurance, is also an

Canadian Association for the Advancement of Women and Sport and Physical Activity

For over 30 years, the Canadian Association for the Advancement of Women and Sport and Physical Activity (CAAWS) has developed a national network of programs to promote physical activity and active lifestyles for girls and women across the lifecourse. Established to tackle issues around equitable sport and physical activity, CAAWS seeks to create environments where girls and women have equal opportunities to participate and lead in sport and physical activity.^{384, 385} The organization has developed a wide range of documents and activities including the development of the handbook *Towards Gender Equity for Women in Sport* and a policy manual suggesting ways to put research into action.³⁸⁴ Earlier CAAWS'

programs – Girls@Play and Girls Playing on Boys' Teams – encouraged girls to break down gender barriers in sport. More recent activities focus on engaging women "55 – 70+" (e.g. Sport for More) and mothers (e.g. Mothers in Motion) in active lifestyles.³⁹⁴⁻³⁹⁶ Programs, such as Active & Free, target girls between 9 and 18 years to choose sport and physical activity over tobacco, and the program On the Move which has now expanded to address the needs of Aboriginal and newcomer (new to neighbourhood) girls and young women in physical activities.^{397, 398} CAAWS continues to build new relationships and find mechanisms to support sport and physical activity among Canadian girls and women.³⁸⁵

issue.³⁸⁷ For example, the higher number of ankle and knee injuries among female endurance athletes is seen as a result of the differences in physical composition of muscle and tendons.³⁸⁸⁻³⁹³ However, while physiology plays a significant role, young men often receive more appropriate care and training at an earlier age.³⁹⁰⁻³⁹³ Women's participation in sport and physical activities has required them to challenge gender stereotypes and roles as well as to seek out community facilities available to them.³⁸⁷

The Public Health Agency of Canada's Innovation Strategy illustrates how SGBA as well as health equity considerations can be incorporated into programs and practice.^{399, 400} In 2011, 37 projects funded in the first phase of the Innovation Strategy's *Achieving Healthier Weights in Canada's Communities* initiative were reviewed to determine the manner and extent to which sex, gender, and equity considerations were taken into account.⁴⁰⁰ As a result of that analysis, the Agency identified ways it could improve its own practices to support and encourage organizations to more clearly consider those factors in developing, implementing and evaluating their interventions. Those improvements were reflected in the next round of solicitations.

- Project proposals were rated in part on the extent to which health equity as well as sex, gender and sexuality roles and factors were integrated in the implementation, adaptation, and evaluation of the proposed interventions.
- The solicitation materials supported organizations in developing those elements, by:
 - providing examples of gender differences in obesity, and describing different societal expectations and roles of men and women that could influence healthy weights (e.g. access to financial resources, who purchases food, roles in child care and how that could affect activity and eating patterns of both caregiver and the children), and
 - describing ways to address gender-specific needs in the design, implementation and evaluation of the intervention.⁴⁰⁰

Promoting heart health

Addressing the influence of sex and gender on health requires challenging assumptions and historic practices. These assumptions about sex, gender and health influence perceptions of risk as well as individual and collective approaches to healthy living. For example, the fact that women generally live longer than men and that men are more likely to have heart disease (see Chapter 1 for data) assumes that women are not impacted by heart disease.²⁴² As a result, past approaches, particularly around cardiovascular health focused on men's health which has influenced the identification and treatment of disease for women.²⁴²

Historically, health and disease research has rarely considered sex and gender in relation to prevention, identification, diagnosis, treatment or management of ill health.²⁴² Cardiovascular health is a prime example of how research has typically focused on male norms and standards that apply neither to women nor to all men.^{242, 401-403} Evidence shows that factors such as sex affect symptom presentation and disease identification whereas gender can influence treatment-seeking as well as health care practitioners' reactions to cardiac symptoms.²⁴² The combined interaction of sex, gender and the broader health determinants can affect health status, health system responses and short- and long-term health outcomes.^{18, 242}

Perceptions of cardiovascular disease (CVD) have affected the health of women, who used to be under-represented in cardiovascular research, treatment and health prevention practices.^{242, 402, 403} CVD has only recently been recognized as one of the leading causes of death and ill health among Canadian women.^{77, 404} Prior to this CVD was assumed to be a "man's disease" with only 13% of Canadian women (and 15% over 35 years) identifying heart disease as their most significant health concern.⁴⁰⁵ To address this perception, heart health organizations began targeting women through social marketing, public awareness and health promotion programs.^{406, 407} In 2008, the Heart and Stroke Foundation of Canada launched The Heart Truth campaign to call on women to put their own health first, change their habits, recognize heart attack and stroke symptoms and seek prompt treatment.^{406, 407} (See the textbox "Targeting women: The Heart Truth campaign.")

Targeting women: The Heart Truth campaign

A broad public health campaign, The Heart Truth was created to raise awareness about heart disease and stroke among women and encouraged them to reduce their risk factors. Based on the effective National Heart Lung and Blood Institute campaign in the United States, Canada launched its national campaign through the Heart and Stroke Foundation of Canada in 2008.^{406, 407} At that time it was clear that attention was needed on this issue: the face of heart disease in Canada was changing, becoming younger, increasingly female and ethnically diverse.⁴⁰⁷ Canadian women often did not understand the breadth of their risk factors and the connections between risk factors such as high blood pressure, elevated cholesterol, family history of heart disease and others. The Heart Truth employs a multi-pronged approach that involves using life stories, educational materials, a website, social media

tools, community kits, broad public service advertising, media programming and sponsor promotion.⁴⁰⁷ The Red Dress is the official symbol of The Heart Truth campaign. Each year in March, the Red Dress symbol comes to life at The Heart Truth celebrity fashion show, the campaign's signature media event where Canadian celebrities lend their profile to raise awareness of women's risk for heart disease and stroke.⁴⁰⁷

Evaluations of the Heart Truth campaign in Canada have shown positive results. Awareness that heart disease and stroke is a most serious health concern (32%) and leading cause of death (59%) among women in Canada (over 35 years) has increased.⁴⁰⁵ Before the campaign started, overall awareness of heart disease and stroke as a leading cause of death was only 33%.⁴⁰⁵

Sex, gender and mental health and well-being

Each of the annual Chief Public Health Officer's reports has stressed the importance of mental health and well-being as well as the need to support individual Canadians and their families and communities. Applying a sex- and gender-based approach to mental health interventions can help better understand how the determinants of health contribute to mental health and well-being.⁴⁰⁸

Policies and strategies are beginning to recognize the role of the broader determinants of health in mental health. In 2006, the Standing Senate Committee on Social Affairs, Science and Technology report *Out of the Shadows at Last: Transforming Mental Health, Mental Illness and Addictions Services in Canada* highlighted the relevance of the broader determinants of health – including sex and gender – to good mental health.⁴⁰⁹ The Standing Senate Committee's recommendations for a Canadian body to promote mental health with federal and provincial/territorial support led to the creation of the Mental Health Commission of Canada (MHCC) in 2007.^{409, 410} The MHCC's framework emphasizes the importance of a population health approach as well as the importance of mental health literacy and of resilience.⁴¹¹ As the socio-economic determinants interrelate with gender, taking this approach

should implicitly benefit both men and women in tailored ways. However, the framework was criticized for not citing specific sex- and gender-based prevention, intervention or system responses.^{270, 412}

In 2012, the MHCC released Canada's first mental health strategy, developed in part from the testimony of Canadians with mental health problems and illness as well as of their families.⁴¹³ Among the six strategic directions identified in the strategy (promotion and prevention; recovery and rights; access to services; disparities and diversity; First Nations, Inuit and Métis; and leadership and collaboration), gender and sexuality are considered as priority areas in addressing disparities and diversity.⁴¹³ This involves looking at the different ways that gender influences vulnerability and how gender needs can be considered in prevention and early intervention efforts. Addressing the impacts of stigma and discrimination based on sexual orientation and gender identity can affect both mental health and how effectively needs are met.⁴¹³ Regarding sex and gender, the mental health strategy recommends:

- increasing understanding of gender and sexual orientation;

- providing mental health services that are sensitive to gender and sexual orientation;
- reducing risk factors for women's mental health (e.g. poverty, caregiving and family violence); and
- improving the capacity of lesbian, gay, bisexual, transsexual and questioning (LGBTQ) organizations to address stigma and offer support within communities.⁴¹³

The following discussion highlights examples that demonstrate the influence of sex and gender on mental health and were chosen based on several factors: prevalence and/or rate of the issue; a lack of awareness, stigma and the need to draw attention to the subject/issue; or issues that affect many populations but in different ways.

There is a positive relationship between the frequency and severity of these factors and the frequency and severity of mental health problems.^{268, 278} For many, mental health outcomes result from major life events – having a child, losing a loved one (as a result of death or separation) or experiencing poverty or abuse.^{268, 278} Evidence shows that protective factors against the development of mental health problems (such as depression) include resilience, self-esteem, coping skills and a sense of control; being able to access and make informed choices about resources and services; and having a supportive environment (family, friends, and accessible health and social service providers).⁴¹⁴ Supporting mental health now and into the future involves building evidence on causes and mitigating their impacts; promoting mental health and well-being across the lifecourse; and increasing the capacity of health care providers to identify and address not only mental health outcomes but also to identify and influence broader factors that influence these outcomes.^{414, 415}

Addressing depression: reproduction and mental health example

Gender roles, life experiences and event-specific risk factors (such as intimate partner violence, low socio-economic status and associated disadvantages) are often cited as contributors to common mental disorders that disproportionately affect women.²⁶⁸ The over-representation of women in rates of depression and

anxiety suggests that more can be done to address individual factors such as reducing stress, addressing risk factors, and developing resilience among girls and women.^{268, 411, 416} While there are many underlying factors that influence women's mental health and well-being, this discussion focuses specifically on depression and reproductive health, and postpartum depression (PPD) in particular. Despite this focus on women, the discussion raises questions about what is happening among men and other sub-populations (e.g. lower socio-economic status) as they become parents.

Managing reproductive processes and/or life events (e.g. premenstrual syndrome, childbirth, infertility, menopause, and sexual distress) can influence mental health. While many Canadian women (up to 80%) experience mild mood disturbances after giving birth, about 10% to 15% of women can be affected by postpartum depression.^{276, 278, 417, 418} In fact, this is likely an under-estimate given that PPD is often stigmatized and under-diagnosed.⁴¹⁷ While the cause of PPD is unclear, research has identified many contributing factors (e.g. physiological hormonal changes, life stress, partner conflict, caring for a newborn, low self-esteem and lack of social support) that put some sub-populations at greater risk.^{68, 276, 278, 419-421} Possible long-term health impacts include a significant likelihood of experiencing depression later in life.^{417, 419} In addition, adverse outcomes of PPD may influence mother's relationship with her infant.^{417, 419, 420} Addressing PPD and its risk factors involves consideration of biology and socio-economic factors as well as knowledge of the interactions and interrelationships.⁴²² Many studies have been inconclusive about the effectiveness of prevention interventions; however there are still opportunities for interventions to reduce, mitigate and manage the effects of PPD on families.

The Saskatoon Postpartum Depression Support Program is a community wellness program that offers support to mothers managing PPD.^{423, 424} An evaluation of this and other similar programs found that most women, particularly those with their second baby (more women are underdiagnosed for their first baby and seek help with the second and subsequent), reported that they had benefited from a number of aspects of these types



of programs.^{418, 421, 424} Overall, most women benefited from group discussions and peer support. However, others reported that these programs could be expanded to offer greater social and cultural relevance (e.g. for older or for Aboriginal women).^{417, 418, 424, 425}

Mother Reach London & Middlesex (Ontario) educates and supports women and their families who are at risk for, or coping with, prenatal and postpartum mood and anxiety disorders.⁴²⁶ The Mother Reach weekly drop-in program offers opportunities to gain educational support, and connect with other mothers with similar issues. A Father Reach program is also available in the community. Collaborative agreements with mental health professionals and other counseling supports are in place to support families. The Mother Reach Coalition is comprised of a team of community members and professionals in London and Middlesex County whose purpose is to provide and promote public and professional awareness of prenatal and perinatal mood and anxiety disorder.⁴²⁶ Mother Reach is held at the Merrymount Family Support and Crisis Centre where additional education and resource supports are available along with a Nurse Practitioner led clinic, mental health counseling, emergency respite care and a

variety of parenting and support groups.⁴²⁶ Systematic reviews of similar type programs show that positive outcomes for a mother's well-being and infant care can be achieved through environments and programs that offer individual treatment and support for those entering parenthood.^{417, 418, 424, 427, 428}

Addressing the outcomes of maternal depression involves a greater understanding of the complex interactions between mental health and other factors. Meta-analysis results have been inconclusive as to whether socio-economic factors are predictors for PPD.^{279, 429} However, most studies have been limited in reach given they were conducted on demographically similar populations (e.g. Caucasian, heterosexual, and relatively high socio-economic status).^{279, 429} Also needed are studies on the moderating effects of psychosocial, cultural and spiritual factors on depression.²⁷⁹ For some mothers community, family and traditional values and practices can be protective and offer support to women and their children. On the other hand, some mothers may be influenced by traditional and cultural practices that may under-recognize illness and influence seeking treatment.⁴³⁰

Some sub-populations, such as recent female immigrants, can experience challenges and barriers to receiving adequate and equitable care.^{279, 280, 430} Given the complexity of the psychosocial issues facing some immigrant women, there is a need to develop a comprehensive response to these health challenges of immigration to include:

- acknowledging that responsibilities and policies surrounding immigration can contribute to stress;
- offering adequate community resources and social services to address broader social determinants of health;
- including cultural elements into prevention strategies;
- working towards equitable access to culturally appropriate services;
- building capacity for marginalized communities; and
- offering culturally relevant interventions at the individual level.⁴³⁰

In the area of reproduction and mental health, Canadian researchers and clinicians have played significant roles in knowledge development and translation. Since the

1980s, Canadian researchers have been involved in leadership areas within the North American Society for Psychosocial Obstetrics and Gynecology, The Marce Society (for postpartum mental disorders) and the International Association for Women's Mental Health. In 1993, Canadian researchers worked on the first book on this topic, *Psychological Aspects of Women's Health Care: The Interface Between Psychiatry and Obstetrics and Gynecology* and subsequent editions have been translated into several languages and used in clinician training internationally.⁴³¹

Further efforts are being made to increase knowledge and understand mental health issues in a gender-based research context in research centres across Canada.⁴²² For example, the Centre for the Study of Gender, Social Inequities and Mental Health, based at British Columbia's Simon Fraser University brings together researchers and community partners from Canada, United States, United Kingdom and Australia to work together to develop programs and policies on intersections between gender, social inequities and mental health as well as the necessary interventions.⁴³²⁻⁴³⁴ Research development, knowledge exchange, training and capacity building is on-going in five priority areas: mental health policy and reform; recovery and housing; reproductive mental health; violence, mental health and substance use; and the criminal justice system, mental health and substance use.^{432, 434}

Men's experiences with impending and new fatherhood, paternal depression, stress about partners' pregnancies and the role they play in women's mental health are important factors that are slowly being considered and implemented in research, programs and policies.^{417, 435-438} Research has found that depressive symptoms during new fatherhood as well as partners' pregnancies and postpartum periods are also significant problems for men.^{270, 438} In particular, having a depressed partner, a poor relationship between the parents, and low social support are the most common correlates of depression in men during pre and post natal periods.⁴³⁸ An increase in depression in one partner may lead to an increase in the other.⁴³⁸ While paternal depression among new fathers is receiving media attention, identifying the problem is lagging because the tools currently used to assess depression may not adequately identify symptoms in men. Scales such as the Edinburgh Postnatal Depression

Scale, Beck Depression Inventory, General Health Questionnaire and Postpartum Depression Screening Scale routinely measure effects in women. They can also be effective to measure paternal depression in men; however, research suggests that the scales will need to be adapted to better reflect men's symptomatic criteria.⁴³⁹⁻⁴⁴⁴ Paternal postpartum depression has been studied by few researchers and has primarily focused on middle-class, married Caucasian fathers. Additional research is needed to expand the focus to new fathers from various cultural and socio-economic backgrounds.^{442, 444} Addressing depression and anxiety of new parents also requires consideration of the needs of sub-populations, for example, sexual minorities. More work also is required to identify and address the reproductive mental health of men and the role they play in women's reproductive mental health.

Preventing suicide: addressing male suicide

Recent research and programs reveal that men are at risk for a range of mental health problems, in particular depression.^{270, 445} Mental illnesses among men are often underdiagnosed and under-reported and mental health issues of men are often considered a "silent crisis" and this suggests the mental health gender gap may not be as wide as originally thought.²⁷⁰ Differences between men and women in outcomes and diagnoses may be the result of factors that are biological, as well as how problems are socially and culturally framed, how symptoms are manifested and experienced.⁶⁸ In addition, focusing on and addressing the manifested physical symptoms as well as practicing certain coping strategies (e.g. substance use) may mask or disregard underlying mental illness.⁶⁸

Suicide is an example of a gender paradox in public health. While four out of five suicides are completed by men, women attempt suicide more often and also have higher reported rates of depression than men.^{68, 269, 270, 274, 446} Thus, addressing suicide through prevention practices is challenged by a number of factors including gender differences in suicide and suicide ideation.⁴⁴⁷ A sex- and gender-based approach points to questions about differences in underlying experiences, social roles and behaviours as well as gender bias in diagnostic tools.

Incorporating Sex and Gender into Health Interventions

CHAPTER 4



While clinical depression is a suicide risk, epidemiological and clinical research reports that the prevalence of depression is inversely correlated to the frequency of suicide.⁴⁴⁸ Several factors to consider when addressing men's suicide are that men are less likely to seek the necessary help and care; they can be reluctant to show perceived weakness; they differ from women in the way symptoms appear and how the illness is diagnosed and treated; and many inflict self-harm in decisive and violent means.⁴⁴⁷ Alcohol and other substance misuse may be a way of self-medicating depression or anxiety.^{68, 448}

Suicide among older men is concerning and more needs to be done to address this at risk population.^{25, 68, 87} In 2006, the Canadian Coalition for Seniors' Mental Health (CCSMH) developed their CCSMH National Guidelines for Seniors' Mental Health, which focuses on several mental health issues facing Canada's seniors. Suicide was specifically targeted via the *National Guideline, The Assessment of Suicide Risk and Prevention of Suicide*, which examined seniors' suicide in social and cultural contexts, specifically the sex and gender aspects of behaviour and the role of culture in risk factors.⁴⁴⁹ Building on the guidelines for the prevention of suicide, CCSMH developed a *Late Life Suicide Prevention Toolkit* for health care providers, physicians, nurses, front-line workers and mental health professionals and to be used in health education programs.⁴⁵⁰

Suicide is often associated with younger men and notably sexual minority men.^{25, 68, 451} A 2011 review of suicide and suicide risks in diverse American sexual and gender minority populations indicates that there has been insufficient research on suicidal behaviour in this population and the extent to which public health policies, prevention strategies and targeted interventions are needed and are effective.²⁸⁶ The review also indicates that, in general, there is no authoritative or reliable way to establish rates of completed suicide in the sexual and gender minority population. However, international research indicates links between sexual and gender minority status and elevated rates of both suicide ideation and attempts.^{286, 452} It also points to links between mental disorders and suicide attempts of sexual and gender minorities.²⁸⁶ While mental disorders are the leading risk factor, the report also points to other explanatory factors including the social stigma, prejudice and discrimination that sexual and gender minorities face at an individual level – rejection by family and friends, harassment, bullying and physical violence – as well as on an institutional level with non-inclusive laws and policies.²⁸⁶

Some jurisdictions have developed suicide prevention strategies that include broad to targeted initiatives. New Brunswick, for example, has been acknowledged for its broad suicide prevention strategy which identifies and targets those at greatest risk for suicide.⁴⁵³ The program builds on existing community-based resources and the capacity of local partners to know how best to respond to local needs by engaging in community action, continuous education and interagency collaboration.^{453, 454} The Australian government attributes the reduction in its overall rate of suicide over a 10-year period in part to its prevention strategy.⁴⁵⁵ The LIFE Framework (Living is for Everyone) is based on the premise that all Australians have a role to play in suicide prevention through broad population and targeted interventions.⁴⁵⁵ The LIFE Framework also indicates that providing effective sex- and gender-specific suicide prevention interventions is important. For men this includes:

- developing practical, action-oriented approaches and strategies that provide coping and skills training, improve employment and parenting skills, help deal

Incorporating Sex and Gender into Health Interventions

- with stress and anger, encourage openness and provide opportunities for retired men to socialize;
- creating friendly and relevant programs and services within safe environments at appropriate locations;
- providing services that proactively engage at-risk men as they may admit having difficulties if the subject is broached but will not necessarily self-identify;
- training local service providers and bringing programs and services to the places where men are to be found – workplaces, pubs, sports and service clubs;
- building capacity to recognize and respond to men's needs and value men's role in the community;
- addressing health and well-being from a positive perspective as men respond better to being and staying healthy than dealing with a problem;
- building networks of like-minded men for social support to address loneliness; and
- promoting mental health screening.⁴⁵⁶

Applying a sex, gender and diversity lens to health outcomes can expand the understanding of issues such as men's suicide.²⁷³ Certain sub-populations, for example, men living in remote communities and Aboriginal men, have high rates of suicide.⁴⁵⁷⁻⁴⁵⁹ The Men at Risk program addresses issues of depression and suicide risk among men living and working in remote regions of Alberta, including those in the oil, forestry and agricultural sectors, who are often isolated from family and community.^{448, 460} Systematic reviews have shown that there is a broad range of effective approaches in suicide prevention programs.⁴⁶¹ This program follows recognized best practices for suicide prevention, mental health-care support and counselling. It uses emotional messages, storytelling and testimonials from survivors of attempted suicide as well as messages from mental health professionals. It neither normalizes nor glamorizes suicide behaviours. The Men at Risk program can be considered promising in addressing the unique pressures and challenges facing men in these distinctive fields and situations.⁴⁴⁸

Over the last few decades, social change has made it more difficult for men to connect to the broader community and with each other.⁴⁶² Changes to the employment environment – finding work in isolated and remote areas, a movement away from traditional labour and the expectation of being employed and having years

of retirement while healthy – and relationships with significant partners have created situations where men may feel isolated, depressed, lonely and overwhelmed by family responsibilities or else unfulfilled and undervalued. Such feelings contribute to mental health risks including suicide. Evidence shows that positive health outcomes are associated with creating men's networks. Programs such as Australia's Men's Sheds are contributing to greater health and well-being among men, particularly older men and those living in less populated regions.⁴⁶² (See the textbox "Australia's Men's Sheds program.") Such programs address disparities in continued learning, adult education and social network organizations by focusing on men's spaces and learning needs.⁴⁶²

Reluctance to identify a problem, seek help and be diagnosed can limit the success of suicide prevention interventions. The decision to seek help often comes at a point of crisis and not during the development of illness. The reasons for men being reluctant to seek help may stem from traditional feelings of masculinity or a perceived weakness, lack of awareness or control, or a need to mask symptoms through substance use/abuse.^{448, 470} Suicide prevention programs must challenge perceptions of masculinity and men's reluctance to identify need and/or ask for help. Social marketing tactics can be tailored to inform and encourage men with mental health problems to seek help.^{448, 470} Mental health practitioners and tools used to assess men need to address barriers to seeking help.⁴⁷⁰ A review of mental health practices found that more men would seek help for mental health issues if the programs suited those with traditional male gender roles. Traditional counselling that involves discussing issues were found to be less effective than structured interventions. Cognitive behavioural therapy, for example, encourages individuals to replace traditional coping skills with adaptive behaviours that replace adverse norms (such as not sharing negative thoughts) with more effective processes that engage coping.^{448, 470} Broad-based media campaigns that challenge male norms must be intensive and target the at-risk populations.^{448, 470}

Australia's Men's Sheds program

Australia's Men's Sheds is a grassroots movement established to provide a support system for men. The idea stems from the backyard shed as a place where men would have traditionally practised crafts and created networks. The men who participate connect by sharing common interests and learning and teaching new skills (e.g. cooking, wood working, automotive care, weight management).⁴⁶² More importantly, Sheds addresses men's health issues and risk factors. The premise is that good health is built on a number of factors such as feeling good, having a valued and identifiable role in the community, connecting with friends, maintaining an active body and mind and nurturing financial and social viability. The program builds on several determinants of health including creating supportive environments, developing personal skills and strengthening community action.⁴⁶²⁻⁴⁶⁴ The program also shows participants that they have a role to play in their own health and community by creating projects that are financially viable and that contribute to the community (e.g. building community structures).⁴⁶² As Sheds relationships grow, so too does self-esteem and a sense of belonging.⁴⁶² Health literacy increases through the more formal discussions on topics that include depression, prostate cancer and healthy behaviours. Some at-risk participants also reported fewer thoughts of suicide.⁴⁶²

To include those who are geographically isolated, a large online and virtual Sheds forum exists for participants to post about do-it-yourself projects,

hobbies, lifestyle, family and relationships, mental health, sports and tips and items to trade (e.g. swap shop).^{463, 465} In Australian Indigenous communities, Men's Sheds were reported to also be places of healing and spirituality and for learning about cultural traditions. In terms of health outcomes, Sheds provides an opportunity to learn new skills and communicate and experience less isolation among those with an illness and/or disability.⁴⁶²

There are over 1,000 sheds registered with the Australian Men's Shed Association and Mensheds Australia and the program continues to grow. They are broadly supported across communities and partly funded by the Australian government as an opportunity to provide men with opportunities to build practical skills, socialize with other men, and promote health and well-being.⁴⁶⁶ Work has also been done to develop and support materials and structures to offer services in communities with unique needs, such as those with physical disabilities, mental health problems, and the unemployed.⁴⁶⁶⁻⁴⁶⁸ Similar programs have been replicated in New Zealand, England, Ireland and Canada.⁴⁶⁶ The Mensheds Manitoba Inc. runs a similar peer-run organization in Winnipeg that provides camaraderie among men.⁴⁶⁹ The goals of Mensheds Manitoba Inc. are to reduce social isolation, loneliness and depression among retired men while also encouraging members to remain active in their communities.⁴⁶⁹

Reducing mental health stigma and increasing access to care

Stigma for any reason – a health issue, culture, gender, sexual orientation – can affect many and can occur in a variety of settings. Mental health stigma is the result of poor understanding that leads to prejudice and discrimination, and many individuals who have a mental illness or a mental health problem have experienced stigma.⁴⁷¹ Stigma can negatively affect an individual's ability to develop holistically, socialize, go to school, work and volunteer, and seek care and treatment.⁴⁷¹⁻⁴⁷³

Among social constructs, gender and sexuality can be tools used to shape status hierarchy whereby, some may be less likely to attain positions of power and leadership among specific groups.^{217, 474} Level of status can manifest into other forms of inequality such as the value placed on symptoms and outcomes and how to interact with health care providers. Since stigma affects many life opportunities, research and programs must account for a range of outcomes.^{217, 471} A full assessment of the impacts must also recognize that many stigmatizing circumstances may have contributed to that outcome.⁴⁷⁴

Several approaches have had promise in breaking down mental health-related stigma. Early education

Incorporating Sex and Gender into Health Interventions

(focusing on primary school and then high school) and increasing awareness of mental health disorders can challenge misconceptions about mental illness and reduce associated stigma.^{471, 475} Teaching children and youth about mental illnesses can promote empathy and acceptance before negative attitudes emerge.⁴⁷¹ Early education interventions have also been shown to have greater benefits in reducing stigma rather than broad population-based initiatives.⁴⁷¹ Programs such as Roots of Empathy (profiled in the *CPHO's Report on the State of Public Health, 2009*) have been shown to significantly reduce levels of aggression among school children from kindergarten to Grade 8 by raising social/emotional competence and increasing empathy.^{476, 477} Simultaneously, learning about discrimination (regardless of disease, social status, sex, sexual orientation, gender identity, race or age) can help establish equitable practices that individuals can adopt into other areas of their lives across the lifecourse (e.g. workplace).

An American study found that gender roles can moderate the extent of stigma.⁴⁷⁸ For example, stereotypes

concerning substance abuse and violence/aggression generally fall along gender lines. The study results consistently showed that gender-atypical mental illness-related symptoms (i.e. those that are not expected) evoke positive responses, more sympathy and a greater sense of support. On the other hand, individuals with gender-typical (i.e. one that is expected) symptoms often received adverse reactions that implied responsibility and blame and were less likely to be seen as having a genuine mental illness.⁴⁷⁸ Deviation from typical gender scripts could be perceived as cause of illness. Although this study only addressed broad public perceptions, a greater understanding of the perceptions of the range of mental health practitioners and other care providers have about mental health conditions in relation to sex and gender is needed.⁴⁷⁸

Research and programs lag behind in recognizing how masculine norms and stigma influence care and treatment. While there are significant sex and gender differences in mental illness (e.g. brain function, structure and



chemistry), to be complete, research should also take into account social pressures and environmental factors. Men typically ignore symptoms, exacerbating disconnections between physical and mental symptoms. For example, physical symptoms such as headaches and digestive problems are not often linked to mental health conditions with the same symptom assessment criteria as they are for women. Traditional views on masculinity have often hidden mental health problems. Perceptions of male roles and responsibilities around being protectors and providers are built upon ideals of strength and stoicism. The social stigma associated with men's use of mental health services stems from these traditional ideas of masculinity. As a result men do not often show signs and/or acknowledge their own risk factors, have low mental health literacy, and can mask mental health problems with other types of coping strategies and risk behaviours (e.g. substance use and violence).^{448, 470, 479, 480}

A population health approach is necessary to address gender-specific risk factors as well as to improve access and delivery of mental health policies and programs.^{11, 481} By expanding the approach to include the social determinants of health, SGBA of gender discrimination, policies and programs can be made more effective.²¹⁷ Overall, practices to encourage men to seek care fall across several intervention categories: group education (e.g. discussions and/or awareness building), service-based (e.g. health and social services), community outreach (e.g. awareness and local education as well as informational products) and integrated (a combination of the other three types).²²⁸ Evaluations of these interventions have shown promise in terms of changes in behaviours and attitudes related to sexual health, father-based programs (building relationships with children) and reductions in aggression and violence. Results have also demonstrated the potential for attitudinal changes in areas such as increased contraception, reliance on sexual/reproductive programs and partner communication and decreased physical, sexual and psychological violence toward a partner (self-reported).²²⁸ The results are effective in the short term but this is often a reflection of the short term nature of interventions.²²⁸

Following consultations with communities, British Columbia's Northern Health noted key concepts relevant

to promoting and delivering men's health programs. These include:

- supporting and conducting more research on men's health, risk factors and the access and delivery of health care services;
- consulting with men to understand the environments in which they work and live;
- supporting programs for knowledge translation between research and program delivery;
- creating supportive environments by using clear and relevant messages and by encouraging men to seek information and speak about health on their own terms;
- working within established structures and networks (e.g. workplace safety programs);
- specifically focusing on improving health and social services programs for men at risk as well as access to these; and
- developing and delivering innovative outreach services to involve men in developing programs to meet their needs (e.g. Men's Night Out).^{446, 482}

Australia's Centre for Advancement of Men's Health and the Centre for Rural and Regional Health Education use the Men's Awareness Network model of health (MAN Model) for disease prevention and health promotion by improving ways for men and young males to access the health care system. The concept of the MAN Model stems from the need to address traditional masculine behaviours regarding health but also acknowledges the non-homogeneity of men and the importance of tailored programs.⁴⁸³ This evidence-based approach to stimulate community responses to men's health issues is found in both rural and urban settings where general practitioners and other health care professionals communicate with men about health issues in places where the men congregate. For example, workplace health programs are often used to address strategies of safety, stress and relationships. Adding to the MAN Model, the Lifeskills program extends the program's reach to include the specific needs and issues of adolescent males.⁴⁸³⁻⁴⁸⁵ Programs such as Men's Night Out adopt the MAN Model to align health promotion activities with items that attract interest. They hold events in licensed locations with invited guest speakers (e.g. sport and television celebrities) to discuss topics that include chronic conditions, parenting, and accessing or navigating the

health care system.⁴⁸³ The adoption of the MAN Model Men's Health Night program by a range of health organizations in Australia and Canada have exposed large audiences – since its inception it is estimated that more than 80,000 men have participated – to more open discussions about men's health that have led to an overall increase in visits to the family doctor.^{483, 486} Using the Men's Night Out program and health check-up practices, the model has also had some success in Australian rural and remote Indigenous communities.⁴⁸³ The Men's Night Out program has now been implemented in British Columbia where a series of Men's Health Nights, workplace programs and Lifeskills sessions were held at several post-secondary institutions.⁴⁸³

Raising awareness about the vulnerability of men to depression is a rising trend and is promising to help reduce the stigma attached to mental health. A slowly growing number of focused promotional efforts and networking groups targeting men and their mental health awareness are helping break the silence that has long surrounded this topic. A study in Australia reports that a men-only prompt list for physicians and patients, designed to overcome male reticence and low mental health literacy, assisted 60% of male patients in raising issues with their doctor.²⁷⁰

There is a growing interest among researchers in developing preventive interventions aimed at improving workplace health and well-being and to help reduce the burden of absenteeism and lost productivity; however, employers often consider the investment too high.^{470, 487} The MHCC is working with partners to develop National Standard of Canada for Psychological Health and Safety in the Workplace that will provide organizations with the tools to achieve measurable improvement in psychological health and safety for Canadian employees.⁴⁸⁸⁻⁴⁹⁰

Canada is making progress in addressing mental health related stigma in Canada and internationally through the development of research initiatives, professional training in mental health stigma, knowledge sharing and identifying and evaluating anti-stigma programs.

- In 2009, the MHCC launched a 10-year anti-stigma/anti-discrimination initiative called *Opening Minds*. This is the largest systematic effort to reduce the stigma of mental illness in Canada, and MHCC will work with communities, stakeholders and specific

at-risk groups.⁴⁷³ Early evaluations of a number of the *Opening Minds* programs are on-going. However, the Interior Health Authority of British Columbia evaluated its program using Ontario Central Local Health Integration Networks anti-stigma training program. Among results were changes in attitudes among training participants in areas of social responsibility, disclosure, self-stigma, prejudice and devaluation. Positive results will encourage the use of this anti-stigma training as a resource for delivery and development of future programs.⁴⁹¹

- A research initiative has been established at Queen's University (Kingston, Ontario) an anti-stigma research initiative that develops outreach programs.⁴⁹²
- In 2012, Canada hosted an international conference gathering 700 researchers, mental health professionals, policy makers and those with experience with mental illness from more than 28 countries. The conference concluded with the message that everyone has a role to play at eliminating stigma that prevents individuals from getting the care they may require.^{493, 494}
- Canada is represented on the World Psychiatric Association section on Stigma and Mental Illness with a Canadian chair and by engaging in activities to reduce stigma and discrimination as well as improve inclusion and access for those with mental illness (and their families).⁴⁹⁵
- Mood Disorders Society of Canada and its project partners have launched a new initiative that offers physicians an accredited online continuing medical education program using a contact based approach based on the best evidence for changing stigmatizing attitudes and behaviours towards people living with mental illnesses.⁴⁹⁶

Sex, gender, healthy relationships and sexual health

Healthy sexuality involves acquiring knowledge, skills and behaviours for positive sexual and reproductive health and experiences across the lifecourse.⁴⁹⁷⁻⁴⁹⁹

It also includes options to avoid negative outcomes (e.g. sexually transmitted infections [STIs] and unplanned pregnancies).⁵⁰⁰ Developing and maintaining healthy

Incorporating Sex and Gender into Health Interventions

CHAPTER 4

sexuality often involves a number of complex decisions and relationships.

The WHO states that sexual health includes a “positive and respectful approach to sexuality, the possibility of having pleasurable and safe sexual experiences that are free of coercion, discrimination, and violence.”⁵⁰¹ This section looks at five areas that are considered necessary to achieve positive, respectful, pleasurable and safe sexual experiences:

- building healthy relationships;
- communicating: sexualization and healthy relationships;
- addressing sex and gender stereotypes and sexual health;
- applying comprehensive sexual health education; and
- addressing sexual health risks.

Building healthy relationships

All healthy relationships – with family, partners and peers – help build resilience and reduce risks for a variety of negative health outcomes.⁵⁰²⁻⁵⁰⁴ Interventions that promote healthy relationships should be delivered as early as possible so that young men and women learn to value and understand the importance of respect, equality and harmony with relationships.⁵⁰⁵ The *CPHO's Report on the State of Public Health in Canada, 2011* identified the value of developing healthy relationships during adolescence as youth become more involved with peers, initiate sexual relationships and may become parents themselves.²⁰ Dating relationships are particularly important for the transition into adulthood as such developing healthy and respectable relationships are important to current and future relationships.⁵⁰⁶ Although it can occur at any age, youth and young adults may be at higher risk for dating violence, and the most police-reported victims of dating violence are female.⁵⁰⁷ To be effective, programs that target at-risk youth need to address a range of individual experiences as well as account for other factors

Addressing youth and violence

STOP! Dating Violence among Adolescents (Quebec)

The STOP! Program was developed to prevent dating violence and promote egalitarian relationships among Quebec youth aged 14 and 15 years old. The STOP program is made up of two 75-minute sessions of discussions about abusive behaviour within dating relationships. The sessions use examples and focus on the rights of partners.⁵¹¹⁻⁵¹³ Traditionally, the victims are girls and the perpetrators are boys, but the program also demonstrates the reverse also occurs.⁵¹¹⁻⁵¹⁴ STOP! has run since 1994, and evaluations demonstrated increased knowledge about dating violence both in the short term (one month) and the medium term (four months).^{188, 511, 515} In addition, attitudes towards dating violence had improved among participants, especially among adolescent girls.⁵¹⁵ Due to the success of the program, PASSAJ program was developed for 16- and 17-year-olds.⁵¹¹ Aligned with the components and activities of the STOP! program, PASSAJ also deals with control and abusive behaviours in dating relationships and also includes a component on sexual harassment in work and study situations.^{511, 516}

Outrage (Newfoundland and Labrador)

In 2006, the Government of Newfoundland and Labrador launched a six-year Violence Prevention Initiative to address the problem of violence against those most at risk – women, children, youth, older persons, disabled individuals, Aboriginal women and children, as well as adults who are vulnerable based on their ethnicity, sexual orientation or economic status.^{517, 518} In 2006, the Violence Prevention Initiative created the OutrageNL campaign specifically to address youth violence. Developed with the input of youth between 13 and 18 years, this social marketing campaign uses a variety of media including posters, websites and television advertisements. The two television advertisements feature a female and male youth, respectively, as victims of violence. The website www.outrageNL.ca provides helpful information to those who struggle with tendencies toward violence. It also informs on how to recognize and take action against violence.^{519, 520}

Incorporating Sex and Gender into Health Interventions

such as gender, culture and sexual orientation. Youth Relationships Project or RESOLVE Alberta, for example, have shown promise in reducing relationship violence by focusing on issues influenced by gender roles.⁵⁰⁸⁻⁵¹⁰ Communities and schools also play an important role in integrating and increasing the scope of interventions that help young people develop healthy relationships including sexual relationships. In-school programs such as STOP! and PASSAJ offer broad gender-based programs to all youth in Quebec schools.⁵¹¹ (See the textbox “Addressing youth and violence.”)

An important aspect of building healthy relationships is the ability to recognize and change unhealthy relationships, including those that involve various forms of violence. Developing healthy relationships may involve challenging harmful gender stereotypes and sharing power in intimate relationships.^{521, 522} For example, within heterosexual sexual relationships, women are stereotypically portrayed as being responsible for contraception use.²⁵³ Unequal and unfair power

imbalances within relationships can directly affect decisions about contraceptive methods (e.g. refusal to use condoms).⁵²² Gender stereotypes and power imbalances can also contribute to violence within intimate relationships. Interventions that have shown promise in supporting the prevention of intimate partner violence are those that provide the tools to ensure the safety of victims and potential victims and that address violence in a broader context of equality, rights and responsibility.^{523, 524} (See the textbox “Healthy Relationships Curriculum – Men for Change.”) Healthy relationships focused on the concerns of sexual and gender minorities can also challenge heteronormative (the view of heterosexuality as the normal or preferred sexual orientation) understandings of relationships, opening up possibilities for expanding sexual health education to address what constitutes healthy relationships for sexual and gender minority youth and adults.⁵²⁵

Healthy Relationships Curriculum – Men for Change

Over 18 years ago, the Healthy Relationships Curriculum was developed by Men for Change, a community group based in Halifax (Nova Scotia), to promote gender equality and to end violence by increasing knowledge, skills and changes in attitudes. Men for Change was started in response to the massacre of 14 female engineering students at Montreal's École Polytechnique in 1989. The Healthy Relationships Curriculum targets youth in Grades 7 through 9 and supports students as they learn more about developing and maintaining healthy relationships.⁵²⁶ The approach involved a three-part initiative that includes dealing with aggression; gender equality and media awareness; and building healthy relationships. The Grade 7 curriculum deals with aggression, stress, disappointment and rejection and developing skills in effective communication and conflict management. The Grade 8 curriculum tackles gender stereotypes, peer pressure and violence as well as how to challenge negative messages from popular media. The Grade 9 curriculum deals directly with healthy relationships; it builds on communications

skills and embeds the importance of equity.^{526, 527} Evaluations showed that students in the program self-reported significant decreases in the number of incidents of physical violence and use of passive-aggressive strategies, with decreases in the number of incidents in the second year of the program among girls and in the third year among boys.^{526, 528} Program students also reported an increased awareness of violence and psychological abuse, significant changes in attitudes towards abuse and dating violence as well as an increased intolerance for violence by girls and violence by boys.^{526, 528} In addition, students reported that they were less likely to see television violence as real, and were more conscious of television advertising and gender stereotypes. In addition, young men reported that they were better able to recognize gender stereotypes and had modified their behaviour accordingly.^{526, 528} This program is now used by schools, women's shelters, social welfare agencies, and health agencies and counselling centres across Canada and the United States.⁵²⁹

Incorporating Sex and Gender into Health Interventions

CHAPTER 4

Women generally experience higher rates of partner violence than do men; and some sub-populations, including Aboriginal women, have rates higher than that of women in the general population.⁵³⁰ Intergenerational experiences, poverty, addictions, loss of cultural identity and poor relationship skills may be contributing factors for many in violent relationships.⁵³¹⁻⁵³³ Access to services and care may be hindered by lack of awareness, geographic location, perceived ineffectiveness or lack of awareness of a program, and complex relationships between the victim, abuser, family and community members.^{531, 532}

Those who self-identified as gay or lesbian were more than twice as likely as heterosexuals to report having experienced spousal violence, while those who self-identified as bisexual were four times more likely than heterosexuals to self-report spousal violence.⁵³⁴ Nearly



three-quarters of the victims of violence in same-sex partnerships were gay men.⁵³⁵ However, support networks for men and women experiencing intimate partner violence in same-sex relationships may be limited due to social stigma and isolation.⁵³⁶

To address the problem of intimate partner violence, the Government of the Northwest Territories initiated the *NWT Action Plan on Family Violence 2003–2008*. The goal of this plan was to raise awareness of the issue of family violence specifically towards women and children in Northwest Territories.⁵³⁷ The plan was extended to the second phase, *NWT Family Violence Action Plan: Phase II (2007–2012)*.^{537, 538} A key initiative within this plan includes research, development and implementation of a pilot program for men who use violence in their relationship.^{537, 538} Although the plan has yet to be formally evaluated, improvements can be seen in terms of awareness and intersectoral collaboration to ensure the vision of the plan is being met.⁵³⁸

Communicating: sexualization and healthy relationships

How sexuality is portrayed and described can influence how individuals view themselves and others in relationships. Popular culture media – television, movies, music videos and lyrics, video games and magazines – expose young people to unrealistic body shapes and images. The sexualization of men and women has increased significantly over the past few decades, especially following the development and uptake of the Internet.⁵³⁹⁻⁵⁴³ Such messages start early: even children and adolescents are being presented with sexualized themes and experience pressure to act and look like adults. For example clothing, video games as well as dolls and action figures, present unrealistic and sexualized body images.^{539-541, 543}

Young boys and girls are exposed to sexualized portrayals of young men and women – women more often than men – through the Internet, television, radio and print.^{539-542, 544} Girls and young women often misconstrue these images as empowering and as such sexual objectification of women can influence girls to value their sex appeal over other qualities and/or activities.^{540, 541, 543, 545} Numerous research studies have demonstrated that the sexualization of women reinforces

Incorporating Sex and Gender into Health Interventions

According to the American Psychological Association Task Force on the Sexualization of Girls, "sexualization can occur with anyone (men, women, boys and girls) when:

- a person's value comes only from his or her sexual appeal or behaviour, to the exclusion of other characteristics;
- a person is held to a standard that equates physical attractiveness with being sexy;
- a person is sexually objectified – that is, made into a thing for others sexual use, rather than seen as a person with the capacity for independent action and decision making; and/or
- sexuality is inappropriately imposed upon a person."⁵³⁹

the lower status of women and contributes to feelings of dissatisfaction among girls and women.^{539-541, 545} Girls who have been repeatedly exposed to overly sexualized cultural representations may have their confidence in and comfort with their own bodies undermined and may develop self- and body-image issues such as embarrassment, shame and anxiety.^{540, 541} Likewise, repeated exposure to images of young and muscular males with unrealistic V-shaped torsos emphasizing broad shoulders, developed arms and chest muscles and a slim waist may compromise boys' self-image and healthy physical development.^{541, 544}

The sexualization of men and women can have negative effects on cognitive and emotional development and can affect their mental and physical health outcomes by contributing to eating disorders, low self-esteem and depression.^{539, 540, 543, 545} It can also have a broader implication on relationships with others. Narrow views of female and male attractiveness and other societal effects may exacerbate personal and societal experiences with sexism, sexual harassment and sexual violence.^{540, 544}

Individuals can learn to interpret, challenge and ultimately change the negative effects perpetuated through sexualized and stereotypical portrayals. The United States' task force, the *National Task Force on Girls and Women in the Media* was formed to develop steps and

goals to promote healthy and positive depictions of girls and women in the media that:

- support age-appropriate education about the negative effects of sexualization of young girls, adolescents and adults;
- promote healthy, balanced and positive images of girls and women in the media; and
- build young girls' self-esteem and confidence to reject messages that sexualize and objectify them.^{546, 547}

These American-based control measures may have positive effects on Canadians as American television is accessible in many Canadian households. Broad programs to limit the exposure of young girls and boys to radio and television content, including advertising, exists through highly developed codes of ethics and conduct. The Canadian Broadcast Standards Council requires Canadian broadcasters to be sensitive to sex-role stereotyping, refrain from sex exploitation, and portray the intellectual and emotional equality of both sexes.⁵⁴⁸⁻⁵⁵⁰ Regulations in Quebec ban commercial advertising to children under 13 years of age on French language television.⁵⁵¹ However, these measures have no effect on out-of-province transmissions. Measuring the effectiveness of even the strictest controls is challenged by the inability to fully implement practices within a global arena where influences may be sourced outside provincial and national jurisdictions.

Addressing sex and gender stereotypes and sexual health

The discourse of sexuality – the language used to talk about sexual health – rarely includes ideas associated with sexual pleasure and reproduction.⁵⁵² Women in particular are exposed to messages that focus on addressing possible adverse outcomes (e.g. STIs, unplanned pregnancy). As a result, public health interventions tend to focus on developing negotiation skills to protect against negative sexual experiences and outcomes rather than positive aspects of sexual interactions and/or pleasure.⁵⁵² Sexual health education and discourse also primarily focuses on heterosexual relationships.⁵⁵² When non-heterosexual relationships are covered, it is usually in terms of pathologizing such

relationships, with gay men as a particular target, or linking them to the spread of STIs and HIV.⁵⁵²

A variety of sexual health education interventions have been designed to prevent adverse outcomes, many of which target youth. While the evidence of success is mixed, several practices appear to hold promise:

- In-school educational programs that combine addressing teen pregnancy and preventing STIs have been effective.⁵⁵³ Efforts that address sexual risk and protective factors as well as non-sexual factors are more likely to positively influence behaviours.⁵⁵³ Evaluations show that both male and female adolescents who received comprehensive sex education had lower risks for STI acquisition and unintended pregnancy. They also delay the onset of sexual activity compared with those who received abstinence-only or no sex education.^{553, 554}
- Programs that increase the knowledge and skills of parents and community members who interact with youth and have the opportunity to increase youths' knowledge and information about sexual health.^{553, 555}
- Programs that provide access to health services for all youth and that include diversity (applicable to geographic location, age, gender, sexual orientation and culture) are more effective.
 - Programs that include adolescent boys and young men in sexual health initiatives and encourage open discussions about sexual health are effective.^{556, 557} Too often, prevention programs do not focus on the sexual education of males and their skills with contraception and negotiation. This issue is further complicated by the fact that traditionally young women have been less empowered to negotiate safer sex, even if they know about the positive and negative outcomes.⁵⁵⁶⁻⁵⁵⁸
 - Programs that improve life opportunities for youth (e.g. relieve boredom, support future outlooks) may also reduce risky sexual behaviour.^{558, 559}
 - Sexual health is an important part of life and sexual health programs could benefit individuals of all ages. Community-based programs that provide support, training and resource materials to parents and adults who work with youth can be effective.⁵⁵⁹ In addition, comprehensive sexual education is

effective when combined with other programs such as clinical services, counselling and social services to all members of the community regardless of age.⁵⁵⁹

Prevention programs must consider different views and perceptions to be effective. More research is needed to understand young women's perceptions and experiences concerning early pregnancy, contraceptive practices and access to services.⁵⁶⁰ In addition, little is known about young men and their perspectives on women, pregnancy and their role in the family. New male-based prevention programs could help to develop skills, understanding and relationships.⁵⁵⁸

Sexual health campaigns tend to target youth, but similar programs and tactics have not been used for older populations, and a cultural and generational gulf exists when talking about sexuality among older adults.^{180, 182, 561 563} Negative perceptions about older adults' sexuality persist as do the risks of being uninformed or ineffectively treated. Despite an increase in cases of STIs including HIV infection and AIDS among older adults, interventions designed to prevent infections among this population are rare.^{180-182, 562-565} Widowed and divorced baby boomers may be starting new relationships and may not have the most recent knowledge on sexual health.^{182, 183, 561, 562} Stigma, embarrassment and discrimination can lead to additional barriers for older adults (particularly women), to discuss sexual health with their health care providers.^{180, 182, 183, 562} A United States study showed that a large majority of women agreed that physicians should ask older patients about their sex lives, but nearly one-half had not talked about sex and fewer still were offered an HIV or STI test.^{180, 181, 183} General practitioners reported being reluctant to discuss sex and STIs with older (particularly female) patients, and caregivers also reported difficulties addressing older adults' sexual health issues especially those of older women.^{181-183, 562, 564, 565} Researchers also tend to ignore this segment of the population (e.g. STI risk reduction clinical trials do not typically include older people).^{564, 565}

Social marketing campaigns can be used to proactively address negative perceptions of sexual health, gender and age.⁵⁶⁶ Seniors a GOGO is an example of a Canadian program that is raising awareness and challenging

Incorporating Sex and Gender into Health Interventions



stereotypes about age, gender, diversity and sex in a creative way. (See the textbox “Raising awareness about age, gender and sexual health.”) Further developments have led to age and sex sensitivity training for health care professionals in Alberta.⁵⁶⁷

Traditional gendered constructs of sexuality focus either on “performance” or on “lack of interest” based on assumptions about what constitutes “function” and for what outcome.¹⁸² Discussions about older men’s sexual

health often focus on improving performance.¹⁸² The release and marketing of erectile dysfunction drugs (e.g. sildenafil) has focused on older men’s sexuality and the importance of male sexual performance, responsiveness and capacity. Studies on sexual enhancement medication seem to perpetrate stereotypes about women’s sexuality.^{182, 574} For example, women’s sexual health is often discussed in a negative context of low libido, chronic disease and sexual abuse.¹⁸² Research indicates that prevalence of female sexual dysfunction may be overestimated with women’s sexuality being measured by standards used to assess men.⁵⁷⁴ Promoting gender-sensitive approaches to sexual health to address underlying health issues such as sexual dysfunction in the context of the broader determinants of health is important.⁵⁷⁴ While undoubtedly more light needs to be shed on these issues, there are few interventions that focus on healthy sexuality, well-being and aging.

Applying comprehensive sexual health education

Comprehensive sexual health education increases knowledge, understanding, personal insight, motivation and the skills needed to achieve sexual health.^{559, 575} To be effective, sexual health education should be relevant and

Raising awareness about age, gender and sexual health

In 2007, the Calgary Sexual Health Centre (Alberta), the Seniors Action Group (Calgary, Alberta) and The Foundation Lab (Calgary, Alberta) partnered to form Seniors a GOGO, a program that raises awareness about sexuality among adults over 50 years old and addresses rising incidence of STIs and HIV.^{563, 565, 567-569} Initial assessments revealed that education and prevention tactics were insufficiently effective to reduce STIs, but that the program needed to address attitudes towards sexuality, culture, and generational and traditional practices that were barriers to healthy sexual practices.^{563, 565, 567} Seniors a GOGO was accordingly modified to also look at attitudes towards sexual health across generations and the experiences across the lifecourse of the older person. It promotes healthy sexuality, emphasizing that there is no age limit on sex.^{563, 567} Through a series of monologues, seniors and their audiences explore the experiences

with aging and sexuality of men and women with a range of sexual orientations who express the need to be loved, appreciated, admired and engaged in an intimate and healthy relationship regardless of age and gender.^{565, 569-573}

Building on the success of Seniors a GOGO, the Calgary Sexual Health Centre developed training programs in collaboration with the University of Calgary (Alberta), Mount Royal University (Calgary, Alberta) and non-profit organizations including family services and extended care facilities.⁵⁶⁷ These professional development training programs encourage nursing students and other health care providers to integrate sexuality into work with seniors. The success of this program has been built upon to offer similar programs in British Columbia, Saskatchewan and Nova Scotia.⁵⁶⁷

sensitive to gender experiences.⁵⁵⁹ Education and services that have positive sexual health messages that are not exclusively heteronormative have the potential to reach a wider group, rather than stigmatizing more vulnerable sub-populations at risk for poor sexual health outcomes.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) supports starting sexual health education early in childhood and continuing it throughout adolescence. The 2009 two-volume scientific guide *International Technical Guidance on Sexuality Education: An Evidence-Informed Approach for Schools, Teachers, and Health Educators* provides a detailed rationale for comprehensive sexual health education, identifies evidence-informed characteristics of effective sexual health programs, and describes how to incorporate key sexuality education topics and learning objectives into curriculum and programs designed for children and youth.^{576, 577} This guide also recognizes population diversity, including sexual and gender minorities, the importance of behavioural interventions to promote positive sexual health outcomes, and the need for interventions to occur simultaneously in individual, group and community contexts.^{576, 577}

The Canadian Guidelines for Sexual Health Education state that educational programs are most effective when they are comprehensive in scope to help people achieve positive outcomes (e.g. respect for self and others, self-esteem, non-exploitive sexual relations and making informed reproductive choices) and to avoid negative outcomes (e.g. STIs and HIV infection, sexual coercion, etc.).⁵⁵⁹ Age-appropriate school-based sexual health education is an important and cost-effective public health strategy that has, over the long term, been shown to reduce risks of HIV infection and AIDS, other STIs and unplanned pregnancies.⁵⁷⁸ Nevertheless, barriers to effective sexual health education remain. These include structural issues with in-school teaching such as allotted teaching time and teaching resources as well as the comfort level of students, teachers, families and the community at large.⁵⁷⁵ In addition, gender, sexual orientation and culture combine to create additional barriers. LGBTQ respondents to the *Toronto Teen Survey* indicated that LGBTQ issues were invisible in sexual health education, for example.^{318, 579} Research on the sexual health education needs of sexual minorities

demonstrates the complexity of identity, behaviour and attraction. It also shows that sexuality is complex, diverse and heterogeneous.^{580, 581}

The research and interventions that focus on sexual and gender minority adolescents are largely limited by the predominance of heteronormative approaches to sexuality. More work needs to be done to develop dependable, objective methods for conceptualizing and assessing sexual orientation and gender identity earlier in human development and for recognizing them as complex heterogeneous biological, physiological, psychological, social and cultural constructs.⁵⁸²⁻⁵⁸⁵ (See the textbox “Breaking down barriers: sexual minority youth and education.”)

Addressing sexual health risks

Addressing STIs requires a multi-faceted approach. A systematic review of STI and HIV infection prevention programs indicates four key areas in reducing risky sexual behaviours:

- Target those behaviours that are manageable and attainable as these interventions reduce short- and long-term risky sexual behaviours and can potentially reduce STI and HIV infection rates;^{593, 594}
- Tailor programs for the target populations as interventions must consider different racial and cultural practices, ages, behavioural risks, developmental levels, sexual orientations and gender identities;^{593, 594}
- Adapt learning and cognitive theories that include skill-building and increase awareness and self-efficacy to guide choices, skills and communication with partners to learn how to articulate safer sex intentions;⁵⁹⁴ and
- Address more than sexual risk by addressing broader determinants of health.⁵⁹⁴

Broad population-based interventions and social marketing campaigns are part of a population health approach, but they do not specifically address sex and gender issues.⁵⁹⁵ Most Canadian adults would have been exposed to such broad prevention campaigns for safer sex. Programs like “no glove, no love,” while memorable, are considered prescriptive, as the message is disconnected both from the situation and what drives risky sexual

behaviours.⁵⁹⁵ Systematic reviews show that while people can recall these kinds of messages, the uptake in terms of modifying behaviours – practicing safer sex – is less successful.⁵⁹⁶ While these types of programs can be useful in establishing overall social norms, they can be ineffective in reaching those facing particular barriers to safer sex. This includes individuals from cultures that particularly discourage sexual activity, from LGBTQ communities, or in abusive/aggressive or power-imbalanced relationships.³¹³ Targeted approaches may be more effective when focused on behaviour modifications while also addressing gender and contextual barriers.⁵⁹⁵

Practicing safer sexual behaviours can also depend on having access to health care and being able to comfortably discuss practices with an available health care practitioner. SGBA has shown that issues surrounding access to sexual health care differs for men and women and also depends on other factors such as sexual orientation and culture.³¹³ For men, barriers range from

concerns about their masculinity being compromised to fears about specimen collection techniques and physical examinations.^{313, 317} For both women and men – and especially young people, sexual minorities, and/or those living in small communities – barriers include privacy concerns, inaccessible clinic hours, homophobia and heteronormative practices.³¹³ Approaches to preventing HIV infection and AIDS illustrate how applying a sex and gender lens can strengthen public health policies and programs by looking beyond those typically considered at risk to the diversity within sub-populations.²¹⁷ Since the introduction of HIV, investments in prevention, care and management practices targeting at-risk populations (e.g. MSM and people who inject drugs) have had some success in decreasing overall rates of infection.²¹⁷ However, patterns of infection showed that certain sub-populations (e.g. women), were representing an increasing proportion of positive HIV tests.^{175, 176, 217} Consideration of sex and gender along with other influencing factors such as age, race, socio-economic

Breaking down barriers: sexual minority youth and education

Australia's Pride and Prejudice education program

Australia's Pride & Prejudice educational program was developed through Victoria Health Region as an educational package that is relevant, appropriate and adaptable to secondary school settings.^{586, 587} Teachers were concerned about homophobia and the stigma associated with sexual diversity. However, they reported that while they empathized with the sexual minority students, they lacked adequate training to guide students.^{586, 587} The program trains school staff and offers in-class programs that allow negotiation and sexual diversity to be subjects within the everyday curriculum.^{586, 587} Evaluations showed that after 6 weeks of the program, students' attitudes towards sexual minorities improved, particularly among boys, who had fewer positive attitudes than did girls before becoming involved in the program.^{586, 587} Anecdotal information suggests that the program allowed for open discussion, tolerance and greater staff involvement.^{586, 587}

British Columbia's CampOUT!

CampOUT! is an intervention program for LGBTQ between 14 and 21 years who reside in British Columbia. It provides a social, educational and health program designed to improve health and to reduce the risk of HIV.⁵⁸⁸⁻⁵⁹¹ The program has provided a unique camping experience for sexual minority individuals using a combination of social, health and educational approaches to improve health opportunities for LGBTQ youth as well as their heterosexual peers. CampOUT! promotes inclusive social norms in order to foster successful and healthy lives for young LGBTQ people within and beyond the camp experience.⁵⁸⁸⁻⁵⁹¹ Leadership skills are developed to increase personal potential and create social change to address homophobia and heterosexism. To inspire social cohesion and social change, all of the camp participants, leaders and sponsors are asked to commit to addressing stigma related to young people's sexual lives.⁵⁹² CampOUT! appears to hold promise in addressing social norms and institutional/structural changes related to homophobia and heterosexism.⁵⁸⁹

factors as well as risk factors (e.g. heterosexual contact and injection drugs) were particularly important to understanding new HIV infections.^{175, 597} As such, applying SGBA allows for a greater understanding of how gender-related roles and responsibilities can describe the potential impacts of HIV and AIDS policies, programs and services.⁵⁹⁸

Some sub-populations experience additional barriers to sexual health services. LGBTQ respondents to the *Toronto Teen Survey* reported encountering problems accessing sexual health services.^{318, 579} LGBTQ adults may choose to not communicate about their sexual practices with their physician or health care provider for fear of repercussion such as loss of trust with or losing their health care practitioner in areas of limited services.^{321, 599-602} Addressing these issues may require targeted campaigns and the provision of new points of service.³¹⁸ In addition, it is important for health care professionals to increase their knowledge about the health issues and health inequalities experienced by some sexual and gender minorities that are associated with social factors (e.g. family, school, street violence) and medical factors (e.g. lack of youth's knowledge of STIs and health care professionals' possible misunderstanding, bias, and/or homophobia and transphobia).⁶⁰³⁻⁶⁰⁶ Certain programs improve access to health care services by coming to where

clients work. (See the textbox "Increasing access to sexual health care: the Immigrant Women's Health Clinic.")

Stigma associated with sexual health topics, in particular STIs, is a significant barrier to testing, early diagnosis, care and access to treatment and support for all ages, genders and sexual orientations.³¹⁷ While there is value to providing broad-based information to young people on the risks of STIs and HIV infection, messages tailored to gender, culture, age and sexual orientation are important for at-risk populations. Innovation and creativity are required to better address the sexual health service needs of the Canadian population. The Government of Ontario has published a best practices document to address public health infection control, case management and contact tracing.⁶¹¹ This document recommends using social networks, social marketing and testing and screening to manage STIs and long-term effects of illness and infertility.⁶¹¹ The BC Centre for Disease Control recently developed an online sexual health service program including online STI and HIV testing service, which will be launched to complement existing face-to-face clinical services to improve participation in STI and HIV testing.⁶¹²

Risky sexual behaviours are not limited to younger Canadians.⁵⁵⁹ The rates of reported STIs have increased among those between 40 and 59 years, most noticeably among men.^{169-171, 183, 253, 561} Sexual health educational

Increasing access to sexual health care: the Immigrant Women's Health Clinic

The mandate of the Immigrant Women's Health Centre (IWHC), an independent sexual health clinic, in Toronto (Ontario), is to inform women about sexual health and provide clinical services, counselling, information, education and outreach. Services at the centre are culturally sensitive, available in 14 different languages, and administered by an all-female medical staff.^{607, 608} STI screening and treatment, pregnancy tests, birth control counselling, hepatitis B vaccinations, Pap tests and contraception are provided free or for minimal fee.⁶⁰⁸ Connected with the centre is a mobile health clinic that brings health care services to where women live/work and thus addresses barriers of work and family responsibilities.⁶⁰⁹ Employers

can also request mobile clinics to offer on-site care and treatments at the workplace with the long-term goals of reducing employee absenteeism for medical appointments and illness.^{608, 609} Follow-up studies found that these targeted clinics improved accessibility and use of sexual health care among immigrant women. The clinic offers some key lessons on how to address the sexual health needs of this often "invisible" population, while addressing the diverse situations and experiences formed by immigration, country of origin and relationships with family and others. These types of delivery models could be expanded to improve access to sexual health care to those who face greater socio-economic and location barriers.⁶¹⁰

programs must address not only the changing social trends but also sexual practices of older adults. In 2010, the United Kingdom was the first country to launch a national sexual health campaign for those over 50 years old.⁶¹³ This program targeted adults who were single and/or dating and possibly not aware that safer sex applies to them.⁶¹³ The campaign included posters representing the target demographic, thereby increasing opportunities for self-recognition in the message. As part of this campaign, the United Kingdom's Family Planning Agency created a guidebook that specifically addresses health and social issues related to sexual health and STIs to help older adults explore old and new relationships.⁶¹⁴

Section Three: Sex and gender and socio-economic determinants

Looking at sex and gender by selected health outcomes is only part of the broader story, as there are many cumulative factors that directly or indirectly influence health across the lifecourse. In many cases, addressing socio-economic determinants by sex and gender can also make a difference. This section looks at employment and education and how sex and gender influence them. These examples of socio-economic determinants of health were selected for this report because they influence other factors such as income, work-related issues (e.g. stress) and the social sphere in which people interact, and because there are opportunities to make a difference by considering the influence of sex and gender in interventions.

Work and employment: health and stereotypes

Often men and women work in different types of jobs.⁶¹⁵ Employment and working conditions, as well as the outcomes of employment (e.g. income), are determinants of health. In its various forms, work – formal and informal, paid and unpaid – can influence individual wealth and social status.⁶¹⁶ Two factors need to be considered: employment conditions (e.g. salary, number of hours, leave opportunities, insurance and benefits) and job content (e.g. tasks, responsibilities).⁶¹⁷

The effect of gender on how occupational health issues are experienced, expressed, defined and addressed can help identify risk factors for both women and men.⁶¹⁸

Sex- and gender-based stereotyping can increase the health risks for both men and women.⁶¹⁶ Those jobs that are typically considered women's (and that employ more women) tend to involve higher rates of repetition, agility/dexterity, speed and concentration, whereas men-centric jobs tend to involve more heavy manual labour.^{617, 619-621} Risks of injury and disease can be further confounded by biology, workplace seniority, social status, age, tasks, techniques and external life experiences.^{616, 617} Despite the differences, little information is gathered on women's and men's work and their long-term health effects based on sex and/or gender. Assumptions about work and the health risks of work that fall into gender stereotypes of who does what job and the value and associated risks of the work, for example, that women's work is often not as "risky" as men's.⁶¹⁶ While men generally experience more occupational accidents, risks still exist for women, particularly in the jobs that can be undervalued by stereotyping.^{108, 616} In cases where men and women perform the same jobs, tasks, approach and risks can differ within job types and are often gendered, with men and women with the same job title being assigned "light" tasks (e.g. dusting, mopping, refilling) and "heavy" tasks (e.g. waxing, washing, cleaning at greater heights). In addition, job-related equipment and protective clothing is generally designed for men's physiques and can be a poor match to an average woman's body and strength.^{617, 619, 621}

The assumptions about women's work have biased data collection such that the indicators are not relevant and risk can be reassigned.^{616, 618} Women are also less likely to receive disability support; almost one-third (29%) of women received no supplemental income during injury-related work absences between 1993 and 2005.⁶²² Their workplace health is often invisible, a reality that is even more pronounced among recent immigrants.⁶²² Occupational health and safety programs and standards also often have a sex and gender bias with requirements and equipment developed based on men's characteristics and workplace-associated risks.⁶¹⁶

Being able to identify and track workplace injuries, illness and pain relies on having a health and safety program in place that monitors activities. The lack of such a program and other factors (e.g. reluctance of the employee or employer to report problems) means that workplace health outcomes are un- or under-reported. Workers can

Incorporating Sex and Gender into Health Interventions

CHAPTER 4

encounter barriers to reporting; for example, pain and discomfort may be perceived as typical for certain types of work. An imbalance of power may lead to fear of loss of work, wages, respect and an inherent blame for one's own injury.⁶²⁰ In particular, evidence shows that women's occupational injuries and illnesses are under-estimated and underdiagnosed more often than those of men.⁶¹⁶ Compensation claims can often be denied based on the perception that women's work is a "safe" type of work.⁶¹⁶ Differences also exist between men and women regarding treatment and rehabilitation.⁶¹⁶ Men are more likely to be offered training and access to a range of new jobs and support at home post-injury; women receive rehabilitation benefits for shorter periods of time but are more likely to receive support for stress-related illnesses and musculoskeletal disorders.⁶¹⁶ Conversely, little attention has been paid to men's mental health issues or occupational health exposures, and the relationships

to sexual reproduction are often perceived as female issues.⁶¹⁶ Further, gender perceptions of responsibilities and tasks matter in the workplace and can contribute to adverse outcomes such as harassment, stress and under-promotion especially in fields where there are historically gender stereotypes.^{616, 623}

Jobs with historical gender roles, such as nurses, flight attendants, construction workers and welders, have difficulty breaking down gender-based stereotypes.⁶²⁰ For example, male nurses are perceived as better able to lift and engage in the physical elements of the profession than their female counterparts.^{617, 624, 625} Yet it is this physical requirement that puts male nurses at greater risk. In addition, 46% of male nurses have been physically assaulted by a patient compared with 33% of female nurses.⁶²⁶ The suggested reasons for this gender difference include that male nurses may have a greater exposure to violent patients and that social norms may perceive



men as physically and emotionally stronger as well as protective of colleagues.^{626, 627} Most nurses (60%, and a higher number of males than females) report that their job has high physical demands.^{626, 628} Implementation of injury prevention practices in this field needs to consider sex and gender and the role these play in how injuries occur and how they are managed. A comprehensive gender analysis of workplace experiences is necessary to address the work-life issues relevant to retaining male and female nurses in the field as well as increasing the number of male nurses (in order to reach the *Toward 2020* goal of 10% of all Canadian nurses be male).⁶²⁹ The latter requires addressing gendered stereotypes in training, promotion and practices.

Challenging gender stereotypes and addressing gender bias is necessary to attract and retain individuals in non-traditional fields.⁶²⁷ Workplace interventions need to acknowledge the realities of work such as risk, location and the role of confounding factors (e.g. environment, assumptions). The approaches must take care not to isolate those whose job content is outside of the norm by engaging smaller populations with relevant approaches where appropriate. For example, while women may have the largest component of the health nursing services sector, it is important to understand that men are a significant minority with different levels of risk that should be addressed with specified intervention.⁶²⁸

Gender and informal work: supporting caregivers

Many Canadians participate in unpaid and informal work such as caregiving. Informal care providers play a vital role in raising children and assisting elderly adults in their daily activities.^{630, 631} In 2006, more women than men (56% and 43% respectively) provide some type of informal care, and women spend more than double the number of hours (23 million hours altogether) providing informal care.^{230, 231} Social factors such as cultural roles, social norms and employment status contribute to the perception that caregiving is a feminine role. Canadian survey data does show a balance between men and women and the provision of care to elderly family members.⁶³² However, the type of care differs based on gender roles and expectations. Men typically perform tasks external to the home such as maintenance and outdoor work; women

perform more personal care and tasks that take place inside the home.^{230, 231, 437, 632, 633}

Most caregivers report that they are generally coping or coping very well with their caregiving responsibilities and find it rewarding. However, some experience adverse health and social outcomes.^{230, 231, 632, 634, 635} Caregiving can negatively affect paid employment (especially for those who care for their family) as their responsibilities may prevent caregivers from working outside of the home and/or they have to reduce or change their hours of work.^{230, 231, 634} Caregivers may also incur expenses that are not reimbursed and may experience social isolation and/or poorer health.^{230, 231, 634} Women in particular were more likely to report negative health outcomes as a result of their caregiving. They also had to make changes to their employment (in terms of numbers of hours and work patterns) in order to meet caregiving demands.^{230, 231, 634, 635} Many women also report experiencing the stress of being in the "sandwich generation," that is, caring for children at the same time as caring for aging family members.⁶³⁶ One factor that contributes to the adverse impact of caregiving is the intensity with which people undertake their responsibilities. Those who caregive for under ten hours per week experience fewer adverse effects in terms of their participation in the labour force.^{230, 231, 637}

Overall, the proportion of male caregivers has been increasing, with men often caring more for partners with mental health issues and dementia than they had in the past. Men in caregiving roles have fewer opportunities for community support and less social services. Research on programs to support male caregivers



is limited given their lack of recognition in this role.⁶³⁴ Men in same-sex partnerships find that support for caregivers is particularly limited by the lack of benefits, the stigma associated with certain diseases and illnesses (e.g. HIV and mental health issues) and limited access to caregiving supports that usually focus on women or individuals in heterosexual couples.⁶³⁸

Supporting caregivers is complex, as individual and situational needs vary and addressing needs involves many players including governments, employers, communities and individuals. Several programs exist in Canada to support caregivers which vary from financial support (including wages, tax relief and labour policies) to community supports and services.⁶³⁹ Labour policies, such as expanded and flexible paid leave for caregiving, are believed to help balance work and caregiver tasks. Canada's *Employment Insurance Compassionate Care Benefit* provides financial support to caregivers who require time away from their jobs to take care of gravely ill family members or friends.^{639, 640} The federal government provides a range of supports, including the *Caregiver Tax Credit*, the *Eligible Dependant Tax Credit* and the *Infirm Dependant Tax Credit*, and the transfer of the unused amount of the *Disability Tax Credit* which recognize the reduced ability of caregivers to earn and consequently pay income tax as a result of supporting a dependant.^{639, 641-645} Tax recognition for a dependent spouse is also provided through the *Spousal Credit*.⁶⁴⁶ Under the *Medical Expense Tax Credit*, caregivers can claim up to \$10,000 in eligible medical expenses on behalf of a dependent relative.^{647, 648} In addition, some employers also offer a variety of flexible work arrangements for employees with family and caregiving responsibilities (e.g. telework, flexible work hours, on-site adult daycare centres) so that employees can better balance work and care responsibilities.⁶⁴⁹ These kinds of flexible workplace initiatives can be mutually beneficial by reducing costs as a result of absenteeism, higher rates of illness among working caregivers and the loss of skilled employees to their caregiving responsibilities.⁶⁵⁰

Results of a meta-analysis of caregiver interventions determined that supportive interventions were effective but that the effectiveness was dependent on other factors including gender and ethnicity as well as program deliverables (e.g. duration, setting).^{651, 652} However, the

effects of the interventions were specific to caregivers and not global in outcome, and most effective interventions were tailored to the specific needs of caregivers of individuals with dementia.^{651, 653} Further studies revealed that including gender and acknowledging gender roles that influence stress and coping strategies was effective in reducing the burden to caregivers experiencing stress and coping difficulties.⁶⁵³ While mechanisms are in place to support caregivers, needs related to gender roles – impact, burden and outcomes – are not often considered in terms of the caregiver and the recipient. Gender influences the broader determinants of health and can have lasting lifelong effects.

Considering sex and gender in education

Education is an underlying determinant for many future health outcomes. As with other social determinants, sex and gender make a difference in how education is approached and used. Hence they have positive long-term health influences.¹⁰

Young males and females drop out of school for different reasons. Young men often leave school to work, and young women often leave due to pregnancy and childcare requirements.⁶⁵⁴ However, despite their continued higher high school drop-out rates, a greater proportion of young men who drop out do return to successfully complete their schooling later.^{91, 655} Thus, interventions that target youth to stay in school and pursue training and post-secondary education must consider the roles that sex and gender play.

Despite overall educational successes, questions remain as to why boys are not faring as well as girls.⁶⁵⁴ The Programme for International Student Assessment (PISA) showed that a large international sample of 15-year-old girls performed significantly better than their male counterparts on reading tests across participant countries.⁶⁵⁴ Boys scored slightly higher in math and science, but the differences in these scores were much smaller than those for reading.⁶⁵⁴

Applying a sex and gender lens to educational attainment suggests looking at the criteria used to measure success and checking for possible gender bias in this measurement; the factors that encourage in-school participation and academic practices and the suitability

of activities for gender and diversity; gender roles and expectations after graduation; perceptions of success; and teaching methods and suitability to learning styles by gender and behaviour and management. To varying degrees all of these reasons have been cited for differences in academic performance and outcomes. However, addressing issues of performance involves the consideration of sex and gender as well as other factors.^{654, 656} Broad interventions assume homogeneous populations of girls and boys and may ignore diversity. For example, boys' academic outcomes can be influenced by culture as those who are recent immigrants achieve higher academic standards than do boys (and girls) of the same age in the overall population.⁶⁵⁷

In addition, traditional learning structures may not be conducive to some children learning in academic institutions.⁶⁵⁶ Evidence shows that schools that offer physical activity programs within daily routine are better able to meet the needs of all children but especially those who are often distracted. Physical activity programs provide opportunities to feel healthy, expend energy and refocus activities that are particularly effective for boys' academic performance. Social factors are also important contributors.⁶⁵⁶ Pressure to conform to expected performance indicators by peers and/or parents and teachers – for boys to be uninterested in academics and/or for girls to want to achieve academically – may influence how boys and girls respond in school and to peers.

Similarly, coming from a disadvantaged household (e.g. lower income, lower educational attainment) may be a motivating factor.^{656, 658} Girls overcome adversity more often than do boys; for boys the lack of support and resources is more often detrimental to their academic achievement. For some girls family expectations for achieving high academic performance encourage positive outcomes; for others, repeated messages of failure are counterproductive.⁶⁵⁸ Some girls from families where the educating of girls is not held in high regard also tend to have lower academic outcomes.⁶⁵⁶ The perceived normalcy of boys misbehaving and performing poorly in school ("boys will be boys") results in negative stereotypes that reduce academic achievement and interest.⁶⁵⁶ Strong role models at home are important for all children to achieve academically and socially, and for boys in particular

male role models can positively influence their academic performance.⁶⁵⁶

Supporting fathers

The role that fathers play in parenting and building healthy relationships should not be under-estimated.^{659, 660} Where fathers are positively involved, outcomes in children's cognitive, emotional, relational and physical well-being are also positive.⁶⁵⁹⁻⁶⁶¹ People who identify as fathers, regardless of sex, gender and/or sexual orientation play key roles in the lives of children, family and the greater community.^{660, 662, 663} In particular, boys with strong relationships with their father and/or male mentors have greater success in school and in relationships with others.⁶⁵⁶ In general, perceptions of fatherhood and masculinity are changing as roles and responsibilities in society and families are changing. Being a good father used to be equated with being a good worker and provider; however, fathers who are directly involved with their children define being a good father as being a good role model.^{659, 661}

Over time, several reasons have been cited for less paternal involvement including limited and disruptions to parenting, adverse policies on child welfare (e.g. residential schools), employment models (e.g. lack of parental supports for fathers), social norms (e.g. men not being the primary caretaker) and issues around guardianship.^{659, 660, 662}

The experiences of many Aboriginal peoples provide examples of the importance of fathering. The introduction of residential school systems disrupted parenting in many First Nations, Inuit and Métis families as well as the cultural, linguistic, spiritual and family practices that were passed down through generations by parents, affecting individual health and well-being.^{154, 662} Out of every six First Nations children, one has one or more parents who attended residential school, and almost 60% have one or more grandparents who attended a residential school.¹⁵⁴ Thus many Aboriginal men who were first- or second-generation residential school survivors lacked positive role models to teach them about parenting, communicating, showing affection and developing coping strategies, and there are few community supports and resources to provide information and skills in the absence

Incorporating Sex and Gender into Health Interventions

CHAPTER 4

Supporting Aboriginal fathers

There are promising programs in First Nation, Inuit, Métis and remote communities to engage parents and connect them with traditional culture, as well as offer effective parenting practices and developing healthy practices and coping skills. Four different examples from various provinces/territories show a range of approaches that include combining traditional knowledge, building life skills and supporting children with health issues.

The Traditional Parenting Program in Yukon was established in 1995 with the goal of teaching parenting skills through Elders' traditional knowledge to improve the health and well-being of Aboriginal peoples.^{664, 665} Through a series of workshops, that include father-focused programs, parents are provided with practical, culturally sensitive training. The program incorporates modern skills combined with holistic parenting practices and cultural traditions such as setting fishnets and snares, berry picking, sewing and hide tanning are included, as are practices that continue oral traditions, storytelling, spirituality and incorporation of the extended family.⁶⁶⁴

Nēah Kee Papa [I Am Your Father] is a Manitoba Métis Federation program that recognizes that there are fewer programs for fathers compared to mothers.⁶⁶⁶ The Nēah Kee Papa program, which has been open and free to male participants (and their partners) since 1999, supports the active involvement of fathers in their children's lives and aims to empower fathers to provide positive emotional support to their children, enhance their parenting skills, and support healthy family relationships.^{664, 666} The program has several thematic components that address key health and social issues: getting started, the importance of the father's role, proactive parenting, life skills, healthy sexuality, family and the law, children's rights, effective communication and anger management and family practices.⁶⁶⁴⁻⁶⁶⁶ The session, Family of Origin, allows participants to understand their childhood past and realize how those events affect them today as adults.

British Columbia's Full Circle Support program provides 24/7, friendly, father-centred strategies for families and persons living with Fetal Alcohol Spectrum Disorder.^{664, 667} This program offered through the Dze L K'ant Friendship Centre Society provides proactive parenting strategies that include life skills, budgeting, meal planning and leisure activities.⁶⁶⁷ The Full Circle Support program uses one-on-one supports to initially engage fathers and break down barriers of stigma and separation through positive messaging, supporting mothers, teaching life skills and applying healthy activities for children.⁶⁶⁴

Ilisaqsivik's Fathers and Sons on the Land (Nunavut) addresses the changing social constructs of men, and masculinity and fatherhood. Significant social and cultural changes in circumstances for Inuit families (such as the influences and impacts of the wage economy and capitalism, new technologies, moving in to communities, Western religions, justice and governance systems), have altered traditional beliefs and definitions of men and masculinity among some Inuit communities, which can contribute to a confusion identity, lower self-esteem, depression, substance use and abuse, violence, suicide and loss of male role models.⁶⁶⁴ The Fathers and Sons on the Land program promotes mental, spiritual and physical well-being by fostering Inuit *Quajimajatuqangit*, traditional Inuit knowledge that is also associated with traditional Inuit societal values. Some of the ways that these traditions are taught include hunting, traveling, working with dogs, camping and being closely connected with the land.⁶⁶⁴ The sons of the community (including at-risk youth and young men) are accompanied by fathers and Elders on trips during which knowledge "workshops" build and teach traditional skills, values, language and histories.⁶⁶⁴ Providing the young men (as well as the older men) with the opportunities to participate in traditional activities can help lead to a greater empowerment, health and wellness that is believed to expand beyond the individual to the community.⁶⁶⁴ Items gathered on the trips, for example, fish and other edibles, are also shared with the community upon the groups' return.⁶⁶⁴

of familial connections.^{662, 664} To address these effects, promising parenting programs are developing among Aboriginal peoples that include traditional practices and aspects of Aboriginal spirituality (e.g. traditional drumming, dancing, healing ceremonies, and hunting and fishing) that are working towards engaging fathers and integrating them and their children into the cultural traditions.⁶⁶² (See the textbox “Supporting Aboriginal fathers.”)

Addressing fatherhood diversity is also important. New and promising initiatives such as Toronto’s Young and Potential Fathers Initiative (YPF) address cycles of socio-economic factors, a lack of resources and few role models for young, racialized fathers in a disadvantaged neighbourhood.^{668, 669} The program connects young fathers with a range of community health and social services (e.g. employment services, money management, parenting skills and legal aid); as well as provides spaces for

Acknowledging the importance of fathers’ involvement

Canada has made much progress in acknowledging importance of fathers’ involvement with their children and has made strides to increase, knowledge and practice in this area. Since the 1990s, father involvement interventions (in terms of networks, programs and research) have developed substantially.⁶⁷¹ Canada’s first father involvement project, ProsPère, was established in 1994 in two vulnerable Quebec communities to assess and promote father-involvement as a protective factor with respect to child abuse. Initial work included research which assessed community-based support for fathers with young children in four diverse communities in the Montreal region. Work has grown since contributing to the literature on the role of fathers on child development, fathers in vulnerable populations, and knowledge translation.^{671, 672}

In Ontario, the Father Involvement Initiative – Ontario Network (FII-ON) began in 1997 as a broad-based coalition and partnership program to promote father involvement and include fathers into community services.⁶⁷³ FII-ON adapted and continues to use a population health approach, acknowledging the importance of individual and collective factors and the number of stakeholders involved in the lives of fathers (e.g. fathers, mothers, private sector, decision makers and media).^{671, 673} The initiative’s accomplishments include increasing knowledge, developing educational booklets, posters and other social marketing materials, supporting father involvement programs at the community, province and national levels, encouraging the development of knowledge networks and educating and supporting fathers. This initiative also offers

professional training programs to Community Action Program for Children (CAPC)/Canadian Prenatal Nutrition Program (CPNP) projects, Ontario Early Years Centres as well as public health units.⁶⁷³⁻⁶⁷⁵ Similar networks, Father Involvement – BC Network (FIN-BC) and the Alberta Father Involvement Initiative also act as a hubs for information, resources and training about fathers in British Columbia and Alberta.⁶⁷⁶

The Father Involvement Research Alliance (FIRA) also developed from a national partnership building with researchers, practitioners, policy makers and fathers in 2002.⁶⁷⁷ Through this initiative FIRA aims to: generate research agendas, develop, initiate and carry out new research, develop knowledge sharing approaches, promote evidence-based strategies, engage a broad range of interested individuals, organizations and institutions, and connect to Canadian fathers, mothers and children about their issues and needs.⁶⁷⁷ An academic document entitled “Father Involvement in Canada: Contested Terrain” is expected to will be released in late 2012.

Other initiatives such as, “On Fathers’ Ground,” the first National Project on Fund on Fathers, builds organizations’ capacity to work with fathers. The follow-up project, “My Daddy Matters Because...” conducted a national survey of community father programs and led to the creation of The Father Toolkit which was designed to assist programs interested in promoting father involvement and identifying best-practices and lessons learned from existing Canadian father involvement programs.^{660, 678, 679}

fathers to interact with their children, other fathers and mentors.^{669, 670}

Over time society's view on father involvement has evolved. Since the 1970s, Canadian fathers have become increasingly more involved in their children's activities and lives, as a result of a number of factors including mothers working outside of the family home, greater gender equity, the need for fathers to socially and practically support partners and fathers' desire to be involved with their children.⁶⁷¹ As well Canada, as a society, has made some progress in supporting research and/or programs on fatherhood. Interventions that target fathers are continuing to grow and recognize the importance of fathers to the health and well-being of Canadians.⁶⁷¹ (See the textbox "Acknowledging the importance of fathers' involvement.")

The past decade has seen a significant expansion in academic interest in father involvement, efforts to be more inclusive and supportive of fathers in programs and services for families, the level of knowledge about fathers' experiences as parents and how to support them. However, more can be done to see that knowledge about father involvement is disseminated to professionals and policymakers who wish to support families and healthy child development.⁶⁸⁰

Summary

Considering sex and gender in public health interventions is important. This chapter highlights examples of broad and targeted research, programs and policies where sex and gender influence health outcomes and the socio-economic determinants of health. There is a need for sex- and gender-based approaches that move past perceptions of male and female dichotomies to encompass factors such as gender norms and identities, masculinities/femininities as well as sexual/gender diversity.

Canada has made progress in incorporating sex and gender considerations into research as well as a variety of public health practices, but many challenges remain. The first section of this chapter sets out the value of considering sex and gender in public health interventions. Examples such as the HPV intervention illustrate that applying a sex and gender lens can provide a range of perspectives towards health and wellness interventions. In the second section, examples of physical, mental and

sexual health outcomes illustrate where sex- and gender-based approaches can be applied and where diversity within sub-populations is also important. Examples of effectively considering sex and gender in the formulation and implementation of safer sex messages has encouraged taking into account other relevant factors such as age, culture and sexual orientation. The third section considers the role that sex and gender play in the determinants of health, and how programs and policies can address socio-economic inequalities that have the potential to positively affect health. Programs that support parents provide opportunities to positively influence the health and well-being of children as well as the parents themselves.

The path that considers and incorporates sex and gender interventions into future public health interventions will be challenging as interventions evolve to:

- show that sex and gender influence everyone's health and well-being;
- challenge existing assumptions and stereotypes about disease and sex and gender (namely that applying a sex and gender lens is not solely about adding a women's component);
- move towards programs that encompass sex and gender together with other forms of diversity in order to remove barriers and reduce stigma; and
- expand capacity, capture more relevant data and develop and evaluate programs that include sex, gender and diversity.

PART III: A PATH FORWARD

Sex, Gender and Public Health – A Path Forward

CHAPTER 5

“Until all of us have made it, none of us have made it.”

– Rosemary Brown

This report illustrates the important influence of sex and gender on the health of Canadians. The good news is that the majority of Canadians enjoy good to excellent physical and mental health, and are living longer, healthier lives. The bad news is that not all Canadians are experiencing the same good health. Because good health is not equally shared, it is essential that we understand the many factors that contribute to this difference.

Taking action to improve health and well-being will require time, effort and resources. Everyone (governments, not-for-profit organizations, communities, individuals, etc.) has a role to play to make Canada healthier. This report features many examples of effective, promising and/or supportive approaches and interventions that illustrate how sex and gender are important considerations in developing and implementing the right solutions.

A time to act

Working across sectors and jurisdictions, there is a reason to believe that health outcomes can be improved for all Canadians. In particular, Canada needs to:

- recognize and understand the importance of sex and gender in health;
- foster a shared vision and collective action to ensure sex and gender are key considerations in public health research, programs, policy and practices; and
- build on (and share) sex and gender evidence from research and practice.

Recognizing and understanding the role of sex and gender

Canadians must acknowledge and address the role of sex and gender in all facets of health. In addition, it is also important to consider the pathways that an individual takes and how these influence health outcomes. This report clearly illustrates how sex and gender influence behaviours, relationships and overall health in constantly changing ways over the lifecourse.

Governments, the private sector, not-for-profit organizations, educational institutions, communities and individuals must all broaden their perspectives and check their preconceptions to ensure that Canada is taking advantage of opportunities to plan, deliver and develop effective interventions that take sex and gender into account. Sex- and gender-based analysis (SGBA) can be used to tailor programs, policies and interventions in a careful and respectful manner to help reduce health inequalities.

Fostering a shared vision and collective action

Working across sectors and jurisdictions, society must foster collective will and leadership to co-ordinate efforts to ensure that all Canadians are respected and given the opportunity to fully participate in society. The goal is to support a population that is as healthy as possible for as long as possible.

Too often, sex- and gender-based stereotyping can increase the health risks for individuals. Addressing the health inequalities that prevent individuals from achieving the best health possible will require



compassion, openness, time, patience, resources and collaboration, but is an investment worth making.

Building on the evidence

Given the importance of sex and gender in shaping health and well-being, it is essential that they be considered in the development, implementation and evaluation of research, programs and policies. Too often, they are either not factored into these areas or else generic characteristics and scenarios about men and women are used that assume a “one size fits all” approach. This overly simplistic tactic risks producing evidence that is incomplete or misleading. Targeted programs for women and/or men should be reconsidered to encompass the diversity of the population and avoid division.

In addition, more data on sex and gender and the effectiveness of programs are required. It is important to consider sex and gender in all research activities, and not just health research. This requires improved capacity to capture the information needed to identify trends, future concerns and the effectiveness of initiatives, interventions and strategies that incorporate sex and gender. Though broad consideration of sex and gender across sectors supports an understanding of the complexities and interactions of health determinants, behaviours and outcomes, it requires the development of analytical tools in research and surveillance to properly investigate these complexities.

Applying a sex and gender lens to research, policy and programs raises awareness and allows professionals to identify differences and challenge assumptions about health. Due to the dynamic nature of the sex and gender continuum, evaluating outcomes must be a continuous process that considers the broader range of health determinants. Having robust evaluations will allow for better identification of trends and areas where efforts should be focused. Understanding whether a program works – and why – improves its effectiveness.

Challenges remain in translating and disseminating the results of sex- and gender-based research and programming. To make progress, it is important that

researchers avoid generalization and develop sex- and gender-specific indicators. Having the appropriate data and evidence is important for policy makers, public health practitioners and communities who are planning health interventions and programs, which is why looking broadly and finding applicable results from studies is an important and ongoing challenge.

Making a Difference

Opportunities to prevent illness and promote health can be introduced through initiatives and interventions that consider the diverse needs, including sex and gender, of Canadians. Making the effort to reflect sex and gender considerations in research and policy is important for Canada to continue to improve health outcomes.

Moving forward, Canada can learn, adapt and build on successes. However, it will be important to ensure that efforts are neither undertaken in isolation nor limited to one-time projects with short-term impacts. Sex and gender, and their influence on health, are relevant to all Canadians. As a society, Canada can better incorporate sex- and gender-related issues in public health to influence the effectiveness of health promotion and disease prevention efforts. Collectively, Canada has the capacity to understand and address the specific issues of our diverse population to ensure that all Canadians have the opportunity to live as healthy a life as possible.



Sex, Gender and Public Health – A Path Forward

CHAPTER 5

– From words to action –

In this report I have tried to emphasize the importance of sex and gender and their connections with public health and the health status of Canadians. It is my hope that after reading this report, Canadians will have a better understanding of why sex and gender are important to health and how taking them into account can help reduce health inequalities.

Each Canadian should have the opportunity to live as healthy a life as possible. By supporting the integration of sex and gender in all aspects of research, programs and policies, we can continue to build on our successes and enhance health and well-being. If every sector of society does their part, we can make a difference. In my role as Chief Public Health Officer I will:

- work to raise awareness of sex and gender and their influence on public health;
- continue to provide leadership in championing the inclusion of sex and gender considerations at the Agency and with my federal colleagues;
- ensure work continues to challenge preconceptions and change perspectives about sex and gender and their importance to public health;
- work with my federal colleagues and other sectors to develop, deliver and promote policies and programs that consider sex and gender as well as the broader determinants of health; and
- continue to support public health research, policies and initiatives that integrate sex and gender considerations into their development, implementation and evaluation.

– Dr. David Butler-Jones

List of Acronyms

AIDS	Acquired immunodeficiency syndrome
ALS	Amyotrophic Lateral Sclerosis
ASGBA	Aboriginal-specific sex- and gender-based analysis
BMI	Body Mass Index
CAAWS	Canadian Association for the Advancement of Women and Sport
CAPC	Community Action Program for Children
CCHS	Canadian Community Health Survey
CCSMH	Canadian Coalition for Seniors' Mental Health
CHMS	Canadian Health Measures Survey
CIHR	Canadian Institutes of Health Research
CNDSS	Canadian Notifiable Disease Surveillance System
CPHO	Chief Public Health Officer
CPNP	Canadian Prenatal Nutrition Program
CVD	Cardiovascular disease
FII-ON	Father Involvement Initiative – Ontario Network
FIN-BC	Father Involvement – BC Network
FIRA	Father Involvement Research Alliance
GBA	Gender based analysis
HALE	Health-adjusted life expectancy
HBSC	Health Behaviours of School-Aged Children
HDHK	Healthy Dads, Healthy Kids
HIV	Human immunodeficiency virus
HPV	Human papillomavirus
IWHC	Immigrant Women's Health Centre
LGB	Lesbian, gay and bisexual
LGBTQ	Lesbian, gay, bisexual, transgender and questioning
LIFE	Living is for Everyone
MAN	Men's Awareness Network
MHCC	Mental Health Commission of Canada
MSM	Men who have sex with men
PHAC	Public Health Agency of Canada
PISA	Programme for International Student Assessment
PPD	Postpartum Depression
PYLL	Potential years of life lost
RHS	First Nations Regional Health Survey
SGBA	Sex- and gender-based analysis
STI	Sexually transmitted infection
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization
YPF	Young and Potential Fathers Initiative

Body mass index cut-points

The body mass index (BMI) is a ratio of weight-to-height.⁶⁸¹

$$\text{BMI} = \text{weight in kilograms}/(\text{height in metres})^2$$

Table B.1 Body mass index cut-points for children and youth aged 2 to 17 years^{204, 205}

Age (years)	Underweight cut-points BMI less than or equal to:		Overweight cut-points BMI greater than or equal to:		Obesity cut-points BMI greater than or equal to:	
	Boys	Girls	Boys	Girls	Boys	Girls
2	15.14	14.83	18.41	18.02	20.09	19.81
2.5	14.92	14.63	18.13	17.76	19.80	19.55
3	14.74	14.47	17.89	17.56	19.57	19.36
3.5	14.57	14.32	17.69	17.40	19.39	19.23
4	14.43	14.19	17.55	17.28	19.29	19.15
4.5	14.31	14.06	17.47	17.19	19.26	19.12
5	14.21	13.94	17.42	17.15	19.30	19.17
5.5	14.13	13.86	17.45	17.20	19.47	19.34
6	14.07	13.82	17.55	17.34	19.78	19.65
6.5	14.04	13.82	17.71	17.53	20.23	20.08
7	14.04	13.86	17.92	17.75	20.63	20.51
7.5	14.08	13.93	18.16	18.03	21.09	21.01
8	14.15	14.02	18.44	18.35	21.60	21.57
8.5	14.24	14.14	18.76	18.69	22.17	22.18
9	14.35	14.28	19.10	19.07	22.77	22.81
9.5	14.49	14.43	19.46	19.45	23.39	23.46
10	14.64	14.61	19.84	19.86	24.00	24.11
10.5	14.80	14.81	20.20	20.29	24.57	24.77
11	14.97	15.05	20.55	20.74	25.10	25.42
11.5	15.16	15.32	20.89	21.20	25.58	26.05
12	15.35	15.62	21.22	21.68	26.02	26.67
12.5	15.58	15.93	21.56	22.14	26.43	27.24
13	15.84	16.26	21.91	22.58	26.84	27.76
13.5	16.12	16.57	22.27	22.98	27.25	28.20
14	16.41	16.88	22.62	23.34	27.63	28.57
14.5	16.69	17.18	22.96	23.66	27.98	28.87
15	16.98	17.45	23.29	23.94	28.30	29.11
15.5	17.26	17.69	23.60	24.17	28.60	29.29
16	17.54	17.91	23.90	24.37	28.88	29.43
16.5	17.80	18.09	24.19	24.54	29.14	29.56
17	18.05	18.25	24.46	24.70	29.41	29.69
17.5	18.28	18.38	24.73	24.85	29.70	29.84

Body mass index cut-points

Table B.2 Body mass index cut-points for adults aged 18 years and older⁶⁸¹

Classification	BMI category (kg/m ²)	Level of health risk
Underweight	< 18.5	Increased risk
Normal weight	18.5 – 24.9	Least risk
Overweight	25.0 – 29.9	Increased risk
Obese	≥ 30.0	
Obese class I	30.0 – 34.9	High risk
Obese class II	35.0 – 39.9	Very high risk
Obese class III	≥ 40.0	Extremely high risk

Indicators of Our Health and Factors Influencing Our Health

APPENDIX

C

Table C.1 Who we are

Who we are (million people)		Year
Population (as of July 1, 2010)	33.5	2011
<i>Aboriginal</i>	1.17	2006
<i>First Nations</i>	0.70	2006
<i>Inuit</i>	0.05	2006
<i>Métis</i>	0.39	2006
<i>Immigrant</i>	6.2	2006
By birth place		
<i>Africa</i>	0.37	2006
<i>Asia and the Middle East</i>	2.53	2006
<i>Caribbean and Bermuda</i>	0.32	2006
<i>Central America</i>	0.13	2006
<i>Europe</i>	2.28	2006
<i>Oceania and other*</i>	0.06	2006
<i>South America</i>	0.25	2006
<i>United States of America</i>	0.25	2006
By years since immigration		
<i>Recent (<= 10 years)</i>	2.0	2006
<i>Long-term (>10 years)</i>	4.2	2006
Population centre	27.1	2011
Life expectancy at birth (years of expected life)	80.9	2006-2008

Note: Italicized information denotes indicators that have not changed from the previous *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2011*. Some data may not be comparable. More detailed information can be found in Appendix D: Definitions and Data Sources for Indicators.

* 'Other' includes Greenland, Saint Pierre and Miquelon, the category 'Other country,' as well as immigrants born in Canada.

Sources: Statistics Canada.

C Indicators of Our Health and Factors Influencing Our Health

Table C.2 Our health status

Our health status		Year
Health-adjusted life expectancy and reported health		
<i>Health-adjusted life expectancy at birth (years of expected healthy life, females)</i>	72.1	2004-2006
<i>Infant mortality rate (under one year) (deaths per 1,000 live births)</i>	69.6	2004-2006
<i>Perceived health, very good or excellent* (percent of population aged 12+ years)</i>	5.1	2008
<i>Perceived mental health, very good or excellent* (percent of population aged 12+ years)</i>	60.1	2010
Leading causes of mortality (deaths per 100,000 population per year)		
Cancers	211.8	2008
Circulatory diseases	209.9	2008
Respiratory diseases	62.2	2008
Causes of premature mortality, aged 0 to 74 years (potential years of life lost per 100,000 population per year)		
Cancers	1,530	2008
Circulatory diseases	777	2008
Unintentional injuries	591	2008
Suicide and self-inflicted injuries	311	2008
Respiratory diseases	184	2008
HIV	34	2008
Living with chronic diseases		
Cancer incidence (new cases age-standardized per 100,000 population per year)	406	2011
Diabetes prevalence (percent of the population aged 1+ years)	6.8	2008-2009
Obesity (percent of the population aged 18+ years)	23.9	2007-2009
Arthritis* (percent of population aged 15+ years)	16.3	2010
Asthma* (percent of population aged 12+ years)	8.5	2010
Heart disease* (percent of population aged 12+ years)	5.0	2010
High blood pressure* (percent of the population aged 20+ years)	20.1	2010
Chronic obstructive pulmonary disease* (percent of the population aged 35+ years)	4.3	2010
Living with mental illness population aged 15+ years (percent)		
<i>Schizophrenia*</i>	0.3	2005
<i>Major depression*</i>	4.8	2002
<i>Alcohol dependence*</i>	2.6	2002
<i>Anxiety disorders*</i>	5.3	2010
<i>Alzheimer's and other dementias* (estimated percent of the population aged 65+ years)</i>	8.9	2008
Acquiring infectious diseases		
<i>HIV (number of positive HIV tests)</i>	2,417	2009
<i>Chlamydia (new cases per 100,000 population annually)</i>	258.5	2009
<i>Gonorrhea (new cases per 100,000 population annually)</i>	33.1	2009
<i>Infectious syphilis (new cases per 100,000 population annually)</i>	5.0	2009

* Denotes self-reported data

Note: Italicized information denotes indicators that have not changed from the previous *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2011*. Some data may not be comparable. More detailed information can be found in Appendix D: Definitions and Data Sources for Indicators.

Sources: Statistics Canada, Canadian Cancer Society, Public Health Agency of Canada and Alzheimer Society of Canada.

Indicators of Our Health and Factors Influencing Our Health

APPENDIX

C

Table C.3 Factors influencing our health

		Year
Factors influencing our health		
Income (percent of the population, based on 1992 low income cut-off)		
<i>Persons living in low-income (after tax)</i>	9.6	2009
Employment and working conditions, population aged 15+ years (percent)		
Unemployment rate	7.4	2011
Food security, population aged 12+ years (percent)		
Households reporting moderate to severe food insecurity*	6.7	2010
Environment and housing		
Ground-level ozone exposure (parts per billion [population weighted warm season average])	37.0	2009
Fine particulate matter (PM _{2.5}) exposure (micrograms per cubic metre [population weighted warm season average])	7.0	2009
Core housing need* (percent of the households)	12.7	2006
Education and literacy, population aged 25+ years (percent)		
High school graduates	83.4	2011
Some post-secondary education	64.1	2011
Post-secondary graduates	58.4	2011
Social support and connectedness		
Sense of community belonging, somewhat or very strong* (percent of the population aged 12+ years)	65.4	2010
Violent crime incidents (per 100,000 population)	1,282	2010
Health behaviours		
Current smoker* (percent of the population aged 15+ years)	16.7	2010
Engaged in leisure time physical activity, moderately active or active* (percent of the population aged 12+ years)	52.1	2010
Fruit and vegetable consumption (5+ times per day)* (percent of the population aged 12+ years)	43.3	2010
Heavy drinking (5+ drinks on one occasion at least once a month in the past year)* (percent of the population aged 12+ years)	15.9	2010
Illicit drug use in the past year* (percent of the population aged 25+ years)	8.2	2010
Teen pregnancy rate (pregnancy per 1,000 female population aged 15 to 19 years per year)	14.2	2009
Access to health care, population aged 12+ years (percent)		
Regular family physician*	84.8	2010
Contact with dental professional*	71.1	2010

* Denotes self-reported data

Note: Italicized information denotes indicators that have not changed from the previous *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2011*. Some data may not be comparable. More detailed information can be found in Appendix D: Definitions and Data Sources for Indicators.

Sources: Statistics Canada, Health Canada, Environment Canada and Canada Mortgage and Housing Corporation.

Definitions and Data Sources for Indicators

- A -

Aboriginal people(s) (2006)⁶⁸²

This is a collective name for the original peoples of North America and their descendants. The *Constitution Act* (1982) recognizes three groups of Aboriginal peoples – Indians, Inuit and Métis – each having unique heritages, languages, cultural practices and spiritual beliefs.

Data Source

Table C.1: Statistics Canada. (2010-10-06). *Aboriginal identity population by age groups, median age and sex, 2006 counts for both sexes, for Canada, provinces and territories* [Data File].

First Nations (single response) (2006)^{682, 683}

A term commonly used beginning in the 1970s to replace Indian. Although the term First Nation is widely used, no legal definition of it exists. Among its uses, the term 'First Nations peoples' refers generally to the Indian Peoples in Canada, both Status and Non-Status. Single identity refers to those persons who reported identifying with First Nations only.

Data Source

Table C.1: Statistics Canada. (2010-10-06). *Aboriginal identity population by age groups, median age and sex, 2006 counts for both sexes, for Canada, provinces and territories* [Data File].

Inuit (single response) (2006)^{682, 683}

Inuit are the Aboriginal People of Arctic Canada who live primarily in Nunavut, the Northwest Territories and northern parts of Labrador and Quebec. Single identity refers to those persons who reported identifying with Inuit only.

Data Source

Table C.1: Statistics Canada. (2010-10-06). *Aboriginal identity population by age groups, median age and sex, 2006 counts for both sexes, for Canada, provinces and territories* [Data File].

Métis (single response) (2006)^{682, 683}

A term which is used broadly to describe people with mixed First Nations and European ancestry who identify themselves as Métis, distinct from Indian people, Inuit or non-Aboriginal people. Single identity refers to those persons who reported identifying with Métis only.

Data Source

Table C.1: Statistics Canada. (2010-10-06). *Aboriginal identity population by age groups, median age and sex, 2006 counts for both sexes, for Canada, provinces and territories* [Data File].

Alcohol dependence (2002)⁶⁸

Alcohol dependence is defined as tolerance, withdrawal, loss of control or social or physical problems related to alcohol use. This measure was estimated using the Alcohol Dependence Scale (Short Form Score) based on a subset of items from the Composite International Diagnostic Interview developed by Kessler and Mroczek for those aged 15 years and older.

Data Source

Table C.2: Government of Canada. (2006). *The Human Face of Mental Health and Mental Illness in Canada*.

Alzheimer's disease and other dementias (2008)⁶⁸⁴

The DSM-III-R criteria were used to classify people as demented or not. Differential diagnoses used the NINCDS-ADRDA and DSM-IV criteria for Alzheimer's disease; the ICD-10 and the NINDS-AIREN criteria were used to define vascular dementia; operational criteria for Lewy body dementia were taken from McKeith et al.(1996). Those without dementia were classified as cognitively impaired but not demented (CIND), or as cognitively normal. Reisberg's Global Deterioration Scale was used for rating cognitive and functional capacity in all diagnoses.

Data Source

Table C.2: Smetanin, P., Kobak, P., Briante, C., Stiff, D., Sherman, G., & Ahmad, S. (2009). *Rising Tide: The Impact of Dementia in Canada 2008 to 2038*; and Statistics Canada. (2011-03-23). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].

Definitions and Data Sources for Indicators

Anxiety disorders (2010)^{48, 68}

Individuals with anxiety disorders experience excessive anxiety, fear or worry, causing them to either avoid situations that might precipitate the anxiety or develop compulsive rituals that lessen the anxiety. This measure was estimated as the population who reported that they have been diagnosed by a health professional as having a phobia, obsessive-compulsive disorder or a panic disorder.

Data Source

Table C.2: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Arthritis (2010)⁴⁵

Population who reported having arthritis, including rheumatoid arthritis and osteoarthritis, but excluding fibromyalgia, as diagnosed by a health professional.

Data Source

Table 1.1: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
Table C.2: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Asthma (2010)⁴⁵

Population who reported having asthma as diagnosed by a health professional.

Data Source

Table 1.1: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].
Table C.2: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

- B -**Back problems (2010)⁴⁸**

Persons reporting having back problems, excluding fibromyalgia and arthritis.

Data Source

Table 1.1: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

- C -**Cancer incidence (2011)⁶⁵**

Estimated number of new cancer cases diagnosed in a given population during a specific period of time.

Data Source

Table 1.1: Canadian Cancer Society's Steering Committee. (2011). *Canadian Cancer Statistics, 2011*. (Toronto: Canadian Cancer Society).
Table C.2: Canadian Cancer Society's Steering Committee. (2011). *Canadian Cancer Statistics, 2011*. (Toronto: Canadian Cancer Society).

Cancers (2008)⁷⁰

Deaths associated with malignant cancers (ICD-10 C00-C97) including but not limited to cancers of the lymph nodes, brain and urinary tract.

Data Source

Table 1.1: Statistics Canada. (2011-09-26). *CANSIM Table 102-0522 Deaths, by cause, Chapter II: Neoplasms (C00 to D48), age group and sex, Canada, annual* [Data File] and; Statistics Canada. (2011-09-27). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].
Table C.2: Statistics Canada. (2011-09-26). *CANSIM Table 102-0522 Deaths, by cause, Chapter II: Neoplasms (C00 to D48), age group and sex, Canada, annual* [Data File] and; Statistics Canada. (2011-09-27). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].

Definitions and Data Sources for Indicators

Chlamydia (2009)^{169, 174}

Estimated rate per 100,000 population, where Chlamydia (*Chlamydia trachomatis*) was reported to the Public Health Agency of Canada by provinces and territories.

Data Source

Table C.2: Public Health Agency of Canada. (2011-02-22). *Reported cases and rates of chlamydia by age group and sex, 1991 to 2009* [Data File].

Chronic obstructive pulmonary disease (2010)⁴⁸

Respondents who reported having chronic obstructive pulmonary disease, chronic bronchitis or emphysema.

Data Source

Table C.2: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Circulatory diseases (2008)⁷⁷

Deaths associated with circulatory diseases (ICD-10 I00-I99) including but not limited to ischaemic heart diseases, cerebrovascular diseases and pulmonary heart conditions.

Data Source

Table 1.1: Statistics Canada. (2011-09-26). *CANSIM Table 102-0529 Deaths, by cause, Chapter IX: Diseases of the circulatory system (I00 to I99), age group and sex, Canada, annual* [Data File]; and Statistics Canada. (2011-09-27). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].
Table C.2: Statistics Canada. (2011-09-26). *CANSIM Table 102-0529 Deaths, by cause, Chapter IX: Diseases of the circulatory system (I00 to I99), age group and sex, Canada, annual* [Data File]; and Statistics Canada. (2011-09-27). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].

Contact with dental professional (2010)⁴⁸

Persons who have consulted with a dental professional (dentist, dental hygienist or orthodontist) in the past 12 months.

Data Source

Table C.3: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Core housing need (2006)⁶⁸⁵

A household is in core housing need if it does not meet one or more of the adequacy, suitability or affordability standards and would have to spend 30 per cent or more of its before-tax income to pay the median rent of alternative local housing that meets all three standards. Adequate housing does not require any major repairs. Suitable housing has enough bedrooms for the size and make-up of resident households according to National Occupancy Standard requirements. Affordable housing costs less than 30 per cent of before-tax household income.

Data Source

Table C.3: Canada Mortgage and Housing Corporation. (n.d.). *Housing in Canada Online* [Data File].

Current smoker (2010)¹³³

Respondents who have identified themselves as daily smokers and non-daily smokers (also known as occasional smokers).

Data Source

Table C.3: Health Canada. (2011-09-07). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2010* [Data File].

Definitions and Data Sources for Indicators

- D -

Diabetes prevalence (2008-2009)⁶²

The proportion of individuals that are affected by diabetes at a given point in time.

Data Source

Table 1.1: Public Health Agency of Canada. (2011). *Diabetes in Canada: Facts and figures from a public health perspective*. (Ottawa: Public Health Agency of Canada).

Table C.2: Public Health Agency of Canada. (2011). *Diabetes in Canada: Facts and figures from a public health perspective*. (Ottawa: Public Health Agency of Canada).

- E -

Engaged in leisure-time physical activity, moderately active or active (2010)⁴⁵

Population who reported a level of physical activity, based on their responses to questions about the nature, frequency and duration of their participation in leisure-time physical activity. Respondents are classified as active, moderately active or inactive based on an index of average daily physical activity over the past three months. For each leisure-time physical activity engaged in by the respondent, average daily energy expenditure is calculated by multiplying the number of times the activity was performed by the average duration of the activity by the energy cost (kilocalories per kilogram of body weight per hour) of the activity. The index is calculated as the sum of the average daily energy expenditures of all activities. Respondents are classified as follows:

- 3.0 kcal/kg/day or more = physically active
- 1.5 to 2.9 kcal/kg/day = moderately active
- less than 1.5 kcal/kg/day = inactive

Data Source

Table C.3: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

- F -

Fine particulate matter (PM_{2.5}) exposure (2009)⁶⁸⁶

This indicator uses the warm seasonal (April 1 to September 30) average of 24-hour daily average concentrations, which is population-weighted to calculate trends and averages across monitoring stations located throughout the country.

Data Source

Table C.3: Environment Canada. (2012-06-18). *Ground-Level Ozone and Fine Particulate Matter Air Quality Indicators Data* [Data File].

First Nations (2006)

See *Aboriginal people(s)*

Fruit and vegetable consumption (5+ times a day) (2010)⁴⁵

Indicates the usual number of times (frequency) per day a person reported eating fruits and vegetables. Measure does not take into account the amount consumed.

Data Source

Table C.3: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

- G -

Gonorrhea (2009)^{171, 174}

Estimated rate per 100,000 population, where Gonorrhea (*Neisseria gonorrhoeae*) was reported to the Public Health Agency of Canada by provinces and territories.

Data Source

Table C.2: Public Health Agency of Canada. (2011-02-22). *Reported cases and rates of gonorrhea by age group and sex, 1980 to 2009* [Data File].

Definitions and Data Sources for Indicators

Ground-level ozone exposure (2009)⁶⁸⁶

This indicator uses the warm seasonal (April 1 to September 30) average of daily eight-hour maximum average concentrations, which is population-weighted to calculate trends and averages across monitoring stations located throughout the country.

Data Source

Table C.3: Environment Canada. (2012-06-18). *Ground-Level Ozone and Fine Particulate Matter Air Quality Indicators Data* [Data file]

- H -

Health-adjusted life expectancy (2004-2006)⁴⁶

An indicator of overall population health that combines measures of both age- and sex-specific health status, and age- and sex-specific mortality into a single statistic. It represents the number of expected years of life equivalent to years lived in full health, based on the average experience in a population. Quebec, Nunavut and Northwest Territories are not represented.

Data Source

Table 1.1: Public Health Agency of Canada Steering Committee on Health-Adjusted Life Expectancy. *Health-Adjusted Life Expectancy in Canada: 2010 Report by the Public Health Agency of Canada*. Unpublished.

Table C.2: Public Health Agency of Canada Steering Committee on Health-Adjusted Life Expectancy. *Health-Adjusted Life Expectancy in Canada: 2010 Report by the Public Health Agency of Canada*. Unpublished.

Heart disease (2010)⁴⁸

Respondents who reported having heart disease.

Data Source

Table C.2: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Heavy drinking (5+ drinks on one occasion at least once a month in the past year) (2010)⁶⁸⁷

Population who reported having five or more drinks in a single sitting once a month or more often in the past year.

Data Source

Table C.3: Health Canada. *Canadian Alcohol and Drug Use Monitoring Survey, 2010* [Public-Use Microdata File]. Ottawa, Ontario: Health Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

High blood pressure (2010)⁴⁸

Respondents who reported having high blood pressure or having used blood pressure medication in the past month, excluding those who reported high blood pressure during pregnancy only.

Data Source

Table 1.1: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
Table C.2: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

High school graduates (2011)⁹⁸

Persons who have received, at minimum, a high school diploma or, in Quebec, completed Secondary V or, in Newfoundland and Labrador, completed fourth year of secondary.

Data Source

Table C.3: Statistics Canada. (2012-01-04). *CANSIM Table 282-0004 Labour force survey estimates (LFS), by educational attainment, sex and age group, annual* [Custom Data File].

Definitions and Data Sources for Indicators

HIV (2009)⁶⁸⁸

The number of new HIV diagnoses in the population reported to the Public Health Agency of Canada during a specified time.

Data Source

Table C.2: Public Health Agency of Canada. (2010). *HIV and AIDS in Canada. Surveillance Report to December 31, 2009*. (Ottawa: Public Health Agency of Canada).

Households reporting moderate to severe food insecurity (2010)¹⁹⁵

A situation that exists when people lack physical and economic access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life.

Data Source

Table C.3: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

- I -**Illicit drug use in the past year (2010)¹⁶³**

Persons who reported using an illicit drug (cannabis, cocaine, speed, ecstasy, hallucinogens, salvia or heroin) in the 12 months preceding the interview.

Data Source

Table C.3: Health Canada. (2011-08-02). *Canadian Alcohol and Drug Use Monitoring Survey* [Data File].

Immigrant (2006)⁶⁸⁹

Applies to a person who has been granted the right to permanently live in Canada by immigration authorities. It usually applies to persons born outside Canada but may also apply to a small number of persons born inside Canada to parents who are foreign born.

Data Source

Table C.1: Statistics Canada. (2011-07-04). *Immigrant Status and Place of Birth, Sex and Age Groups for the Population of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census* [Data File].

By birth place (2006)⁶⁹⁰

The concept of place of birth applies to the country of a respondent if born outside Canada. Respondents are to report their place of birth according to international boundaries in effect at the time of enumeration not at the time of birth.

Data Source

Table C.1: Statistics Canada. (2011-07-04). *Immigrant Status and Place of Birth, Sex and Age Groups for the Population of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census* [Data File].

By years since immigration (2006)⁶⁹¹

Year or period of immigration refers to a person who is a landed immigrant by the period of time in which he or she first obtained landed immigrant status.

Data Source

Table C.1: Statistics Canada. (2011-07-04). *Place of Birth, Period of Immigration, Sex and Age Groups for the Immigrant Population of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census* [Data File].

Infant mortality rate (under one year) (2008)⁶⁹²

Infant mortality rate is the number of infant deaths occurring within the first year of life during a given year per 1,000 live births in the same year.

Data Source

Table C.2: Statistics Canada. (2011-09-26). *CANSIM Table 102-0506 Infant deaths and mortality rates, by age group and sex, Canada, annual* [Data File].

Infectious syphilis (2009)^{170, 174}

Estimated rate per 100,000 population, where infectious syphilis (including primary, secondary and early latent stages) was reported to the Public Health Agency of Canada by provinces and territories.

Data Source

Table C.2: Public Health Agency of Canada. (2011-02-22). *Reported cases and rates of infectious syphilis by age group and sex, 1993 to 2009* [Data File].

Inuit (2006)

See Aboriginal people(s)

Definitions and Data Sources for Indicators

- L -

Life expectancy at birth (2006-2008)⁴¹

Life expectancy is the number of years a person would be expected to live, starting at birth if the age- and sex-specific mortality rates for a given observation period (such as a calendar year) were held constant over his/her life span.

Data Source

Table 1.1: Statistics Canada. (2011-09-26). *CANSIM Table 102-0512 Life expectancy, at birth and at age 65, by sex, Canada, provinces and territories, annual* [Data File].

Table C.1: Statistics Canada. (2011-09-26). *CANSIM Table 102-0512 Life expectancy, at birth and at age 65, by sex, Canada, provinces and territories, annual* [Data File].

- M -

Major depression (2002)^{68, 693}

Persons who met all criteria for a major depressive episode in the 12 months prior to the interview. A major depressive episode is defined as at least two weeks of depressed mood and/or loss of interest in usual activities accompanied by at least four additional symptoms of depression:

- depressed mood most of the day, nearly every day, as indicated by either subjective report (for example, feels sad or empty) or observation made by others (for example, appears tearful);
- markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others);
- significant weight loss when not dieting, or weight gain (for example, a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day;
- insomnia or hypersomnia nearly every day;
- psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down);
- fatigue or loss of energy nearly every day;
- feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick);

- diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others); and
- recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

Data Source

Table C.2: Government of Canada. (2006). *The Human Face of Mental Health and Mental Illness in Canada*.

Métis (2006)

See *Aboriginal people(s)*

Mood disorders (2010)⁴⁸

Respondents who reported having been diagnosed with a mood disorder such as depression, bipolar disorder, mania or dysthymia.

Data Source

Table 1.1: Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

- O -

Obesity (2007-2009)⁶⁹⁴

According to Health Canada guidelines, the index for body weight classification for the population aged 18 years and over, excluding pregnant females and persons less than 3 feet (0.914 metres) tall or greater than 6 feet 11 inches (2.108 metres) is: less than 18.50 (underweight); 18.5 to 24.9 (normal weight); 25.0 to 29.9 (overweight); 30.0 to 34.9 (obese, class I); 35.0 to 39.9 (obese, class II); 40.0 or greater (obese, class III). See Appendix B: Body mass index cut-points for full tables.

Body mass index (BMI) is calculated by dividing the respondent's body weight (in kilograms) by their height (in metres) squared.

Data Source

Table C.2: Statistics Canada. *Canadian Health Measures Survey, 2007-2009: Cycle 1* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Definitions and Data Sources for Indicators

- P -

Perceived health, very good or excellent (2010)⁴⁵

Population who reported perceiving their own health status as being either excellent or very good. Perceived health refers to the perception of a person's health in general, either by the person himself or herself, or, in the case of a proxy response, by the person responding. Health means not only the absence of disease or injury but also physical, mental and social well-being.

Data Source

Table 1.1: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

Table C.2: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

Perceived mental health, very good or excellent (2010)⁴⁵

Population who reported perceiving their own mental health status as being either excellent or very good. Perceived mental health refers to the perception of a person's mental health in general. Perceived mental health provides a general indication of the population suffering from some form of mental disease, mental or emotional problems, or distress, not necessarily reflected in perceived health.

Data Source

Table 1.1: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

Table C.2: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

Persons living in low-income (after tax) (2009)⁶⁹⁵⁻⁶⁹⁷

The percentage of Canadian families who are likely to spend 20 percentage points more of their total post-tax income on necessities (food, clothing and footwear, and shelter) when compared to an average family of the same size, in the same broad community size. Low income is based on the consumption patterns for 1992 and adjusted for family size, community sizes and inflation based on the national Consumer Price Index (see Table D.1). After-tax income is total income, which includes government transfers, less income tax.

Data Source

Table C.3: Statistics Canada. (2011-05-25). *CANSIM Table 202-0802 Persons in low income, annual* [Data File].

Population (2011)⁶⁹⁸

Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is in that area, regardless of where they happened to be on Census Day. Also included are any Canadians staying in a dwelling in that area on Census Day and having no usual place of residence elsewhere in Canada, as well as those considered non-permanent residents.

Table D.1 Low income cut offs after tax, Canada, 2009⁶⁹⁷

Rural Areas		Urban Areas			
Size of family unit	(\$)	Less than 30,000 population (\$)	30,000 to 99,999 population (\$)	100,000 to 499,999 population (\$)	500,000 and over population (\$)
1 person	12,050	13,791	15,384	15,579	18,421
2 persons	14,666	16,785	18,725	18,960	22,420
3 persons	18,263	20,900	23,316	23,610	27,918
4 persons	22,783	26,075	29,089	29,455	34,829
5 persons	25,944	29,692	33,124	33,541	39,660
6 persons	28,773	32,929	36,736	37,198	43,984
7 or more persons	31,602	36,167	40,346	40,854	48,308

Definitions and Data Sources for Indicators

Data Source

Table C.1: Statistics Canada. (2012-01-24). *Population and dwelling counts, for Canada, provinces and territories, 2011 and 2006 censuses* [Data File].

Population centre (2011)⁶⁹⁹

Formerly known as urban population, a population centre has a minimum population concentration of 1,000 persons and a population density of at least 400 persons per square kilometre, based on the current census population count.

Data Source

Table C.1: Statistics Canada. (2012-01-17). *Population and dwelling counts, for population centres, 2011 and 2006 censuses* [Data File].

Post-secondary graduates (2011)⁹⁸

Persons who have completed a certificate (including a trade certificate) or diploma from an educational institution beyond the secondary level. This includes certificates from vocational schools, apprenticeship training, community colleges, Collège d'Enseignement Général et Professionnel (CEGEP) and schools of nursing, as well as certificates below a bachelor's degree obtained at a university.

Data Source

Table C.3: Statistics Canada. (2012-01-04). *CANSIM Table 282-0004 Labour force survey estimates (LFS), by educational attainment, sex and age group, annual* [Custom Data File].

Potential years of life lost⁷⁰⁰

Potential years of life lost are the number of years of life lost when a person dies prematurely from any cause – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Premature mortality due to cancers (2008)⁷⁰⁰

Potential years of life lost for all malignant neoplasms (ICD-10 C00-C97), such as colorectal, lung, female breast and prostate cancer, is the number of years of life lost when a person dies prematurely from any cancer – before age 75.

Data Source

Table 1.1: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Table C.2: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Premature mortality due to circulatory diseases (2008)⁷⁰⁰

Potential years of life lost for all circulatory disease deaths (ICD-10 I00-I99), such as ischaemic heart disease, and cerebrovascular diseases, is the number of years of life lost when a person dies prematurely from any circulatory disease – before age 75.

Data Source

Table 1.1: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Table C.2: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Premature mortality due to HIV (2008)⁷⁰⁰

Potential years of life lost for human immunodeficiency virus (HIV) infection deaths (ICD-10 B20-B24) is the number of years of life lost when a person dies prematurely from AIDS/HIV – before age 75.

Data Source

Table 1.1: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Table C.2: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Premature mortality due to respiratory diseases (2008)⁷⁰⁰

Potential years of life lost for all respiratory disease deaths (ICD-10 J00-J99), such as pneumonia and influenza, bronchitis, emphysema and asthma, is the number of years of life lost when a person dies prematurely from any respiratory disease – before age 75.

Data Source

Table 1.1: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Table C.2: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Premature mortality due to suicide and self-inflicted injuries (2008)⁷⁰⁰

Potential years of life lost for suicides (ICD-10 X60-X84, Y87.0) is the number of years of life lost when a person dies prematurely from suicide – before age 75.

Data Source

Table 1.1: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Table C.2: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Premature mortality due to unintentional injuries (2008)⁷⁰⁰

Potential years of life lost for unintentional injuries (ICD-10 V01-X59, Y85-Y86) is the number of years of life lost when a person dies prematurely from unintentional injuries – before age 75.

Data Source

Table 1.1: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Table C.2: Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

- R -**Regular family physician (2010)⁴⁵**

Population who reported that they have a regular medical doctor. In 2003 and 2005, the indicator in French only included “médecin de famille”. Starting in 2007, this concept was widened to “médecin régulier”, which includes “médecin de famille”.

Data Source

Table C.3: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

Respiratory diseases (2008)⁷⁸

Deaths associated with respiratory diseases (ICD-10 J00-J99) including by not limited to respiratory infections, influenza and pneumonia.

Data Source

Table 1.1: Statistics Canada. (2011-09-26). *CANSIM Table 102-0530 Deaths, by cause, Chapter X: Diseases of the respiratory system (J00 to J99), age group and sex, Canada, annual* [Data File]; and Statistics Canada. (2011-03-23). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].

Table C.2: Statistics Canada. (2011-09-26). *CANSIM Table 102-0530 Deaths, by cause, Chapter X: Diseases of the respiratory system (J00 to J99), age group and sex, Canada, annual* [Data File]; and Statistics Canada. (2011-03-23). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File].

- S -

Schizophrenia (2005)^{68, 701}

Respondents who reported having been diagnosed with schizophrenia by a health professional. This is believed to underestimate the true prevalence since some people do not report that they have schizophrenia and the survey did not reach individuals who were homeless, in hospital or supervised residential settings.

Data Source

Table C.2: Statistics Canada. *Canadian Community Health Survey, 2005: Cycle 3.1* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

Sense of community belonging, somewhat or very strong (2010)⁴⁵

Population who reported their sense of belonging to their local community as being very strong or somewhat strong.

Data Source

Table C.3: Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File].

Some post-secondary education (2011)⁹⁸

Persons who worked toward, but did not complete, a degree, certificate (including a trade certificate) or diploma from an educational institution, including a university, beyond the secondary level. This includes vocational schools, apprenticeship training, community colleges, Collège d'Enseignement Général et Professionnel (CEGEP), and schools of nursing.

Data Source

Table C.3: Statistics Canada. (2012-01-04). *CANSIM Table 282-0004 Labour force survey estimates (LFS), by educational attainment, sex and age group, annual* [Custom Data File].

- T -

Teen pregnancy rate (2009)¹⁶⁴

Number of live births per 1,000 female population aged 15 to 19 years.

Data Source

Table C.3: Statistics Canada. (2011-12-19). *CANSIM Table 102-4505 Crude birth rate, age-specific and total fertility rates (live births), Canada, provinces and territories, annual* [Data File].

- U -

Unemployment rate (2011)⁹⁸

The unemployment rate is the number of unemployed persons expressed as a percentage of the labour force.

Data Source

Table C.3: Statistics Canada. (2012-01-04). *CANSIM Table 282-0004 Labour force survey estimates (LFS), by educational attainment, sex and age group, annual* [Custom Data File].

- V -

Violent crime incidents (2010)⁷⁰²

Offences that deal with the application or threat of application, of force to a person including homicide, attempted murder, various forms of sexual and non-sexual assault, robbery and abduction.

Data Source

Table C.3: Brennan, S. & Dauvergne, M. (2011). *Police-reported crime statistics in Canada, 2010*.

References

1. Government of Canada: *Bill C-5: Public Health Agency of Canada Act*, LS-523E, c. 5, 2006.
2. Public Health Agency of Canada. (2008-04-04). *Who We Are*. Retrieved on November 7, 2011, from http://www.phac-aspc.gc.ca/about_apropos/who-eng.php
3. Public Health Agency of Canada. (2010-11-17). *The Role of the Chief Public Health Officer*. Retrieved on November 7, 2011, from <http://www.phac-aspc.gc.ca/cpho-acsp/cpho-acsp-role-eng.php>
4. Last, J. M. (2001). *A Dictionary of Epidemiology*. (New York: Oxford University Press Inc.).
5. Public Health Agency of Canada. (2011-06-20). *Frequently Asked Questions*. Retrieved on December 9, 2011, from http://www.phac-aspc.gc.ca/about_apropos/faq-eng.php
6. Public Health Agency of Canada. (2011-06-16). *Mandate*. Retrieved on December 9, 2011, from http://www.phac-aspc.gc.ca/about_apropos/what-eng.php
7. Public Health Agency of Canada. (2004-09-01). *The Federal Strategy*. Retrieved on December 9, 2011, from http://www.phac-aspc.gc.ca/about_apropos/federal_strategy-eng.php
8. National Advisory Committee on SARS and Public Health. (2003). *Learning from SARS: Renewal of Public Health in Canada*. (Ottawa: Health Canada).
9. Mowat, D. L. & Butler-Jones, D. (2007). Public Health in Canada: A Difficult History. *HealthcarePapers*, 7(3), 31-36.
10. Public Health Agency of Canada. (2003-06-16). *What Makes Canadians Healthy or Unhealthy?* Retrieved on October 17, 2011, from <http://www.phac-aspc.gc.ca/ph-sp/determinants/determinants-eng.php>
11. Public Health Agency of Canada. (2001-12-08). *What is the Population Health Approach?* Retrieved on December 9, 2011, from http://www.phac-aspc.gc.ca/ph-sp/approach-approche/appr-eng.php#key_elements
12. Graham, H. & Power, C. (2004). *Childhood disadvantage and adult health: a lifecourse framework*.
13. Last, J. M. (2007). *A Dictionary of Public Health*. (New York: Oxford University Press Inc.).
14. Hertzman, C. & Power, C. (2003). Health and Human Development: Understandings from Life-Course Research. *Developmental Neuropsychology*, 24(2&3), 719-744.
15. Butler-Jones, D. (2009). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2009: Growing Up Well - Priorities for a Healthy Future*. (Ottawa: Public Health Agency of Canada).
16. Canadian Institute for Health Information. (2005). *Improving the Health of Young Canadians*. (Ottawa: Canadian Institute for Health Information).
17. Gaudet, S. (2007). *Emerging Adulthood: A New Stage in the Life Course. Implications for Policy Development*. (Ottawa: Policy Research Initiative).
18. Greaves, L. (1999). *CIHR 2000: Sex, Gender and Women's Health*. (Vancouver: British Columbia Centre for Excellence for Women's Health).
19. Forrest, C. B. & Riley, A. W. (2004). Childhood Origins Of Adult Health: A Basis For Life-Course Health Policy. *Health Affairs*, 23(5), 155-164.
20. Butler-Jones, D. (2011). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2011: Youth and Young Adults - Life in Transition*. (Ottawa: Public Health Agency of Canada).
21. Contra Costa Health Services. (2005-04). *The Life Course Model and Maternal, Child and Adolescent Health - An Overview*. Retrieved on December 9, 2011, from http://www.cdphs.state.co.us/ps/mch/mchresources/life_course_fact_sheet.pdf
22. Health Canada. (2010-05-10). *Sex and Gender-Based Analysis (SGBA)*. Retrieved on October 17, 2011, from <http://www.hc-sc.gc.ca/hl-vs/gender-genre/analys/gender-sexes-eng.php>
23. Canadian Institutes of Health Research Institute of Gender and Health. (2012). *What a Difference Sex and Gender Make: A Gender, Sex and Health Research Casebook*. (Ottawa: Canadian Institutes of Health Research).

References

24. Butler-Jones, D. (2008). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2008: Addressing Health Inequalities*. (Ottawa: Public Health Agency of Canada).
25. Butler-Jones, D. (2010). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2010: Growing Older - Adding Life to Years*. (Ottawa: Public Health Agency of Canada).
26. Statistics Canada. (2012-05-26). *Age and Sex for the Population of Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2011 Census* [Data File]. Retrieved on May 29, 2012, from <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/tbt-tt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=101998&PRID=0&PTYPE=101955&S=0&SHOWALL=0&SUB=0&Temporal=2011&THEME=88&VID=0&VNAMEE=&VNAMEF=>
27. Statistics Canada. (2011). *Population Projections by Aboriginal Identity in Canada, 2006 to 2031*. (Ottawa: Statistics Canada).
28. Statistics Canada. (2011-09-27). *CANSIM Table 051-0001 Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual* [Custom Data File]. Retrieved on January 3, 2012.
29. Statistics Canada. (2011). *Projections of the Diversity of the Canadian Population, 2006 to 2031*. (Ottawa: Statistics Canada).
30. Statistics Canada. (2010-12-06). *2006 Aboriginal Population Profile* [Data File]. Retrieved on March 29, 2012, from <http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-594/details/Page.cfm?Lang=E&Geo1=PR&Code1=01&Geo2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=>
31. Statistics Canada. (2011-07-04). *Place of Birth, Period of Immigration, Sex and Age Groups for the Immigrant Population of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census* [Data File]. Retrieved on January 12, 2012, from <http://www.recensement2006.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=89447&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=72&VID=0&VNAMEE=&VNAMEF=>
32. Statistics Canada. (2012-01-17). *Population and dwelling counts, for population centres, 2011 and 2006 censuses* [Data File]. Retrieved on February 8, 2012, from <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/hltfst/pd-pl/Table-Tableau.cfm?LANG=Eng&TABID=1&T=801&SR=1&RPP=25&S=51&O=A&CMA=0&PR=0#C2>
33. Statistics Canada. (2012-01-24). *Population and dwelling counts, for Canada, provinces and territories, 2011 and 2006 censuses* [Data File]. Retrieved on February 8, 2012, from <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/hltfst/pd-pl/Table-Tableau.cfm?LANG=Eng&T=101&S=50&O=A>
34. Statistics Canada. (2007). Census snapshot of Canada - Urbanization. *Canadian Social Trends*, Winter(84), 12-13.
35. Dandy, K. & Bollman, R. D. (2008). Seniors in Rural Canada. *Rural and Small Town Canada Analysis Bulletin*, 7(8), 1-56.
36. Statistics Canada. (2011). *Canada Year Book, 2011*. (Ottawa: Statistics Canada).
37. Statistics Canada. (2010-05-25). *CANSIM Table 052-0005 Projected population, by projection scenario, sex and age group as of July 1, Canada, provinces and territories, annual* [Data File]. Retrieved on March 27, 2012, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=0520005>
38. Human Resources and Skills Development Canada. (2011-11-07). *Indicators of Well-being in Canada. Canadians in Context - Aboriginal Population*. Retrieved on November 7, 2011, from <http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=36>
39. Statistics Canada. (2010-10-06). *Aboriginal identity population by age groups, median age and sex, 2006 counts for both sexes, for Canada, provinces and territories* [Data File]. Retrieved on November 7, 2011, from <http://www12.statcan.ca/census-recensement/2006/dp-pd/hlt/97-558/pages/page.cfm?Lang=E&Geo=PR&Code=01&Table=1&Data=Count&Sex=1&Age=1&StartRec=1&Sort=2&Display=Page>
40. Statistics Canada. (2010-12-01). *Age groups, Rural/Urban area, Immigrant status, Aboriginal Identity and Sex for Persons 12 to 29 years of age in Private Households of Canada, 2006 Census* [Custom Data File]. Retrieved on November 7, 2011.
41. Statistics Canada. (2011-09-26). *CANSIM Table 102-0512 Life expectancy, at birth and at age 65, by sex, Canada, provinces and territories, annual* [Data File]. Retrieved on January 10, 2012, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020512>
42. Statistics Canada. (2005). *Projections of the Aboriginal populations, Canada, provinces and territories 2001 to 2017*. (Ottawa: Statistics Canada).

43. Greenberg, L. & Normandin, C. (2011). Disparities in life expectancy at birth. *Health at a Glance*, April 2011(1), 1-13.
44. Statistics Canada. *Canadian Community Health Survey, 2010: Annual* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
45. Statistics Canada. (2011-10-21). *CANSIM Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2011 boundaries) and peer groups, occasional* [Data File]. Retrieved on January 12, 2012, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1050501>
46. Public Health Agency of Canada Steering Committee on Health-Adjusted Life Expectancy. *Health-Adjusted Life Expectancy in Canada: 2010 Report by the Public Health Agency of Canada*. In Press.
47. Murphy, K. A., Spence, S. T., McIntosh, C. N., & Connor Gorber, S. K. (2006). *Health State Descriptions for Canadians: Musculoskeletal Diseases*. (Ottawa: Statistics Canada).
48. Statistics Canada. (2010). *Canadian Community Health Survey (CCHS). Annual Component - 2010 Questionnaire*. (Ottawa: Statistics Canada).
49. Hypertension Canada. (n.d.). *What is Hypertension*. Retrieved on November 9, 2011, from <http://www.hypertension.ca/what-is-hypertension-dp1>
50. Norfield, J. (2009). *Management of Hypertension. Guide for Health Professionals*.
51. Public Health Agency of Canada. (2010-07-22). *Hypertension Facts and Figures*. Retrieved on November 9, 2011, from http://www.phac-aspc.gc.ca/cd-mc/cvd-mcv/hypertension_figures-eng.php
52. Hypertension Canada. (n.d.). *Diet and Exercise Tips*. Retrieved on March 8, 2012, from <http://www.hypertension.ca/diet-and-exercise-tips-dp1>
53. Public Health Agency of Canada. (2009-05-15). *Effective ways for reducing high blood pressure*. Retrieved on November 9, 2011, from http://www.phac-aspc.gc.ca/cd-mc/cvd-mcv/hbp_reduce-ha_reduire-eng.php
54. Public Health Agency of Canada. (2010). *Life with Arthritis in Canada: A personal and public health challenge*.
55. Canadian Institutes of Health Research Institute of Musculoskeletal Health and Arthritis. (2007-03-15). *Arthritis Research - The Largest Subset of All Musculoskeletal Disorders*. Retrieved on November 15, 2011, from <http://www.cihir-irsc.gc.ca/e/11196.html>
56. The Arthritis Society. (2011-04-11). *Types of Arthritis*. Retrieved on November 7, 2011, from <http://www.arthritis.ca/types%20of%20arthritis/default.asp?s=1&province=ca>
57. Public Health Agency of Canada. (2010-08-20). *Arthritis Risk Factors*. Retrieved on May 10, 2012, from <http://www.phac-aspc.gc.ca/cd-mc/arthritis-arthrite/risk-risque-eng.php>
58. Ng, C., Chatwood, S., & Young, T. K. (2010). Arthritis in the Canadian Aboriginal population: north-south differences in prevalence and correlates. *Chronic Diseases in Canada*, 31(1), 22-26.
59. Statistics Canada. *Aboriginal Peoples Survey: Adults, 2006* [Public-Use Microdata File]. Ottawa, Ontario: Statistics Canada. Special Surveys Division, Data Liberation Initiative [producer and distributor]. All computations on these microdata were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
60. Public Health Agency of Canada. (2007). *Life and Breath: Respiratory Disease in Canada*. (Ottawa: Public Health Agency of Canada).
61. Public Health Agency of Canada. (2011-06-28). *Asthma*. Retrieved on November 9, 2011, from <http://www.phac-aspc.gc.ca/cd-mc/crd-mrc/asthma-asthme-eng.php>
62. Public Health Agency of Canada. (2011). *Diabetes in Canada: Facts and figures from a public health perspective*. (Ottawa: Public Health Agency of Canada).
63. Public Health Agency of Canada. (2011). *Your Guide to Diabetes*. (Ottawa: Public Health Agency of Canada).
64. World Health Organization. (2012). *Genetics and Diabetes*. (Geneva: World Health Organization).

References

65. Canadian Cancer Society's Steering Committee on Cancer Statistics. (2011). *Canadian Cancer Statistics, 2011*. (Toronto: Canadian Cancer Society).
66. Public Health Agency of Canada. (2011-06-28). *Mental Illness*. Retrieved on November 21, 2011, from <http://www.phac-aspc.gc.ca/cd-mc/mi-mm/index-eng.php>
67. The Lancet. (2011). Health concerns of adolescents who are in a sexual minority. *The Lancet*, 377(9783), 2056.
68. Government of Canada. (2006). *The Human Face of Mental Health and Mental Illness in Canada*.
69. Statistics Canada. (2011-09-26). *CANSIM Table 102-0521 Deaths, by cause, Chapter I: Certain infectious and parasitic diseases (A00 to B99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020521>
70. Statistics Canada. (2011-09-26). *CANSIM Table 102-0522 Deaths, by cause, Chapter II: Neoplasms (C00 to D48), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020522>
71. Statistics Canada. (2011-09-26). *CANSIM Table 102-0523 Deaths, by cause, Chapter III: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50 to D89), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020523>
72. Statistics Canada. (2011-09-26). *CANSIM Table 102-0524 Deaths, by cause, Chapter IV: Endocrine, nutritional and metabolic diseases (E00 to E90), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020524>
73. Statistics Canada. (2011-09-26). *CANSIM Table 102-0525 Deaths, by cause, Chapter V: Mental and behavioural disorders (F00 to F99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020525>
74. Statistics Canada. (2011-09-26). *CANSIM Table 102-0526 Deaths, by cause, Chapter VI: Diseases of the nervous system (G00 to G99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020526>
75. Statistics Canada. (2011-09-26). *CANSIM Table 102-0527 Deaths, by cause, Chapter VII: Diseases of the eye and adnexa (H00 to H59), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020527>
76. Statistics Canada. (2011-09-26). *CANSIM Table 102-0528 Deaths, by cause, Chapter VIII: Diseases of the ear and mastoid process (H60 to H95), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020528>
77. Statistics Canada. (2011-09-26). *CANSIM Table 102-0529 Deaths, by cause, Chapter IX: Diseases of the circulatory system (I00 to I99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020529>
78. Statistics Canada. (2011-09-26). *CANSIM Table 102-0530 Deaths, by cause, Chapter X: Diseases of the respiratory system (J00 to J99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020530>
79. Statistics Canada. (2011-09-26). *CANSIM Table 102-0531 Deaths, by cause, Chapter XI: Diseases of the digestive system (K00 to K93), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020531>
80. Statistics Canada. (2011-09-26). *CANSIM Table 102-0532 Deaths, by cause, Chapter XII: Diseases of the skin and subcutaneous tissue (L00 to L99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020532>
81. Statistics Canada. (2011-09-26). *CANSIM Table 102-0533 Deaths, by cause, Chapter XIII: Diseases of the musculoskeletal system and connective tissue (M00 to M99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020533>

82. Statistics Canada. (2011-09-26). *CANSIM Table 102-0534 Deaths, by cause, Chapter XIV: Diseases of the genitourinary system (N00 to N99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020534>
83. Statistics Canada. (2011-09-26). *CANSIM Table 102-0535 Deaths, by cause, Chapter XV: Pregnancy, childbirth and the puerperium (000 to 099), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020535>
84. Statistics Canada. (2011-09-26). *CANSIM Table 102-0536 Deaths, by cause, Chapter XVI: Certain conditions originating in the perinatal period (P00 to P96), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020536>
85. Statistics Canada. (2011-09-26). *CANSIM Table 102-0537 Deaths, by cause, Chapter XVII: Congenital malformation, deformation and chromosomal abnormalities (Q00 to Q99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020537>
86. Statistics Canada. (2011-09-26). *CANSIM Table 102-0538 Deaths, by cause, Chapter XVIII: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00 to R99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020538>
87. Statistics Canada. (2011-09-26). *CANSIM Table 102-0540 Deaths, by cause, Chapter XX: External causes of morbidity and mortality (V01 to Y89), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020540>
88. Statistics Canada. (2011-09-26). *CANSIM Table 102-0542 Deaths, by cause, Chapter XXII: Codes for special purposes (U00 to U99), age group and sex, Canada, annual* [Data File]. Retrieved on October 12, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020542>
89. Statistics Canada. *Canadian Vital Statistics, Death Database, 2008*. All computations on these data were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
90. World Health Organization. (2003). *Social Determinants of Health: The Solid Facts. 2nd edition*. (Denmark: World Health Organization).
91. Statistics Canada. *Labour Force Survey, January 1990 to December 2011, Public-Use Microdata File*. Ottawa, Ontario: Statistics Canada. Labour Statistics Division, Data Liberation Initiative [producer and distributor]. All computations on these microdata were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
92. Gilmore, J. (2010). Trends in Dropout Rates and the Labour Market Outcomes of Young Dropouts. *Education Matters: Insights on Education, Learning and Training in Canada*, 7(4).
93. Statistics Canada. (2011-04-07). *Immigrant Status and Period of Immigration, Labour Force Activity, Highest Certificate, Diploma or Degree, Location of Study, Age Groups and Sex for the Population 15 Years and Over of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census* [Data File]. Retrieved on April 11, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=93716&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=75&VID=0&VNAMEE=&VNAMEF=>
94. Statistics Canada. (2011-04-07). *Aboriginal Identity, Highest Certificate, Diploma or Degree, Major Field of Study - Classification of Instructional Programs, 2000, Area of Residence, Age Groups and Sex for the Population 15 Years and Over of Canada, Provinces and Territories, 2006 Census* [Data File]. Retrieved on April 11, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=93719&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=75&VID=0&VNAMEE=&VNAMEF=>
95. Statistics Canada. (2011-09-16). *CANSIM Table 477-0054 Registered apprenticeship training, completions, by age groups, sex and major trade groups* [Data File]. Retrieved on March 2, 2012, from <http://www5.statcan.gc.ca/cansim/a26?id=4770054&pattern=Registered+apprenticeship+training%2C+completions%2C+by+age+groups%2C+sex+and+major+trade+groups&p2=-1&p1=1&tabMode=dataTable&retrLang=eng&srchLan=-1&lang=eng>
96. Statistics Canada. (2008-10-22). *Historical Statistics of Canada, Section D: The Labour Force. Labour Force at Census Dates (Series D1-123). Table D8-85 Work force, by industrial category and sex, census years, 1911 to 1971 (gainfully occupied 1911 to 1941, labour force 1951 to 1971)* [Data File]. Retrieved on November 22, 2011, from <http://www.statcan.gc.ca/pub/11-516-x/sectiond/4057750-eng.htm>

References

97. Statistics Canada. (2011-07-04). *Industry - North American Industry Classification System 1997 (Historical), Age Groups and Sex for the Labour Force 15 Years and Over of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2001 and 2006 Censuses* [Data File]. Retrieved on November 22, 2011, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?TABID=1&LANG=E&A=R&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=01&GID=837928&GK=1&GRP=0&O=D&PID=92103&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=74&VID=0&VNAMEE=&VNAMEF=&D1=0&D2=0&D3=0&D4=0&D5=0&D6=0>
98. Statistics Canada. (2012-01-04). *CANSIM Table 282-0004 Labour force survey estimates (LFS), by educational attainment, sex and age group, annual* [Custom Data File]. Retrieved on January 10, 2012.
99. Statistics Canada. (2011-03-02). *CANSIM Table 282-0106 Labour force survey estimates (LFS), by immigrant status, educational attainment, sex and age group, Canada, annual* [Data File]. Retrieved on November 16, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=2820106>
100. Statistics Canada. (2011-04-07). *Labour Force Activity, Aboriginal Identity, Highest Certificate, Diploma or Degree, Area of Residence, Age Groups and Sex for the Population 15 Years and Over of Canada, Provinces and Territories, 2006 Census* [Data File]. Retrieved on April 11, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=93722&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=74&VID=0&VNAMEE=&VNAMEF=>
101. Public Health Agency of Canada. (2004-03-23). *The Social Determinants of Health: Working Conditions as a Determinant of Health*. Retrieved on December 12, 2011, from http://www.phac-aspc.gc.ca/ph-sp/oi-ar/05_working-eng.php
102. Jackson, A. (2002). *The Unhealthy Canadian Workplace*.
103. Chandola, T., Heraclides, A., & Kumari, M. (2010). Psychophysiological biomarkers of workplace stressors. *Neuroscience & Biobehavioral Reviews*, 35(1), 51-57.
104. Byrne, D. G. & Espnes, G. A. (2008). Occupational stress and cardiovascular disease. *Stress and Health*, 24(3), 231-238.
105. Park, J. (2008). Work stress and job performance. *Perspectives on Labour and Income*, 20(1), 5-17.
106. Kouvonen, A., Kivimäki, M., Virtanen, M., Pentti, J. et al. (2005). Work stress, smoking status, and smoking intensity: an observational study of 46 190 employees. *Journal of Epidemiology and Community Health*, 59(1), 63-69.
107. Azagba, S. & Sharaf, M. F. (2011). The effect of job stress on smoking and alcohol consumption. *Health Economics Review*, 1.
108. Association of Workers' Compensation Boards of Canada. (2011). *National Work Injury, Disease and Fatality Statistics, 2008-2010*. (Association of Workers' Compensation Boards of Canada).
109. Statistics Canada. (2012-01-04). *CANSIM Table 282-0010 Labour Force Survey estimates (LFS), by National Occupational Classification for Statistics (NOC-S) and sex, annual* [Data File]. Retrieved on April 5, 2012, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=2820010>
110. Statistics Canada. (2012-06-18). *CANSIM Table 202-0707 Market, total and after-tax income of individuals, where each individual is represented by their adjusted household income, by economic family type and adjusted after-tax income quintiles, 2010 constant dollars, annual* [Data File]. Retrieved on November 14, 2011, from <http://www5.statcan.gc.ca/cansim/a05?id=2020707>
111. Statistics Canada. (2010-01-07). *Aboriginal Identity, Age Groups, Area of Residence, Sex and Selected Demographic, Cultural, Labour Force, Educational and Income Characteristics, for the Total Population of Canada, Provinces and Territories, 2006 Census* [Data File]. Retrieved on April 13, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/prof/sip/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=97446&PRID=0&PTYPE=97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=73&VID=0&VNAMEE=&VNAMEF=>
112. Statistics Canada. (2010-01-07). *Immigrant Status and Place of Birth, Immigrant Status and Period of Immigration, Age Groups, Sex and Selected Demographic, Cultural, Labour Force, Educational and Income Characteristics, for the Total Population of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census* [Data File]. Retrieved on April 13, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/prof/sip/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=97613&PRID=0&PTYPE=97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=72&VID=0&VNAMEE=&VNAMEF=>

113. Statistics Canada. (2012-06-15). *CANSIM Table 202-0802 Persons in low income families, annual* [Data File]. Retrieved on August 26, 2011, from <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&searchTypeByValue=1&id=2020802>
114. Commission on Social Determinants of Health. (2007). *Achieving Health Equity: from root causes to fair outcomes*. (Geneva: World Health Organization).
115. Dahlgren, G. & Whitehead, M. (2006). *European strategies for tackling social inequities in health: Levelling up Part 2*. (Copenhagen: World Health Organization).
116. Yanbaeva, D. G., Dentener, M. A., Creutzberg, E. C., Wesseling, G. et al. (2007). Systemic Effects of Smoking. *CHEST*, 131(5), 1557-1566.
117. Baliunas, D., Patra, J., Rehm, J., Popova, S. et al. (2002). Smoking-attributable mortality and expected years of life lost in Canada 2002: Conclusions for prevention and policy. *Chronic Diseases in Canada*, 27(4), 154-162.
118. Department of Health and Human Services. (2004). *The health consequences of smoking: a report of the Surgeon General*. (Atlanta: Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health).
119. Kroon, L. A. (2007). Drug interactions with smoking. *American Journal of Health-System Pharmacy*, 64(18), 1917-1921.
120. Schein, J. R. (1995). Cigarette smoking and clinically significant drug interactions. *Annals of Pharmacotherapy*, 29(11), 1139-1148.
121. Desai, H. D., Seabolt, J., & Jann, M. W. (2001). Smoking in patients receiving psychotropic medications: a pharmacokinetic perspective. *CNS Drugs*, 15(6), 469-494.
122. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 1999* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_1999/ann-eng.php
123. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2000* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2000/ann-eng.php
124. Health Canada. (2007-11-16). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2001* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2001/st-ts-2001-eng.php
125. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2002* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2002/st-ts-2002-eng.php
126. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2003* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2003/ann-eng.php
127. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2004* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2004/supplement2004-eng.php
128. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2005* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2005/ann-eng.php
129. Health Canada. (2007-12-12). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2006* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2006/ann-eng.php
130. Health Canada. (2008-08-26). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2007* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2007/ann-eng.php
131. Health Canada. (2009-08-13). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2008* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2008/ann-eng.php
132. Health Canada. (2010-09-27). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2009* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2009/ann-eng.php
133. Health Canada. (2011-09-07). *Canadian Tobacco Use Monitoring Survey (CTUMS) 2010* [Data File]. Retrieved on October 14, 2011, from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_2010/ann-eng.php

The Chief Public Health Officer's Report on the State of Public Health in Canada, 2012

- 120

146. The First Nations Information Governance Centre. (2011). *RHS Phase 2 (2008/10) Preliminary Results*. (Ottawa: The First Nations Information Governance Centre).
147. Health Canada. (2011-07-18). *Canadian Alcohol and Drug Use Monitoring Survey. Summary of Results For 2010*. Retrieved on October 19, 2011, from http://www.hc-sc.gc.ca/hc-ps/drugs-drogués/stat/_2010/summary-sommaire-eng.php
148. Centre for Addiction and Mental Health. (2003). *Do You Know... Alcohol* [Brochure].
149. Centers for Disease Control and Prevention. (2011-10-28). *Alcohol and Public Health. Fact Sheets - Alcohol Use and Health*. Retrieved on May 10, 2012, from <http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>
150. Canadian Public Health Association. (n.d.). *Alcohol and your health: less is more when it comes to healthy living*. Retrieved on May 10, 2012, from <http://www.cpha.ca/en/portals/substance/article01.aspx>
151. Canadian Centre on Substance Abuse. (n.d.). *Canada's Low-Risk Alcohol Drinking Guidelines. Communicating Alcohol-Related Health Risks*. Retrieved on May 10, 2012, from <http://www.ccsa.ca/2012%20CCSA%20Documents/2012-Communicating-Alcohol-Related-Health-Risks-en.pdf>
152. Health Canada. *Canadian Alcohol and Drug Use Monitoring Survey, 2010*. All computations on these microdata were prepared by Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
153. Canadian Public Health Association. (n.d.). *How does alcohol affect health*. Retrieved on April 26, 2012, from <http://www.cpha.ca/en/portals/substance/health/faq01.aspx>
154. The First Nations Information Governance Centre. (2005). *RHS 2002/03: Results for Adults, Youth and Children Living in First Nations Communities*. (Ottawa: First Nations Centre).
155. Rehm, J., Baliunas, D., Brochu, S., Fischer, B. et al. (2006). *The Costs of Substance Abuse in Canada, 2002*.
156. Centre for Addiction and Mental Health. (2003). *Do You Know... Cannabis* [Brochure].
157. Health Canada. (2009-12-21). *Health Concerns: Cannabis/Marijuana (also hash, hash oil and hemp)*. Retrieved on October 20, 2011, from <http://www.hc-sc.gc.ca/hc-ps/drugs-drogués/learn-renseigne/cannabis-eng.php>
158. Health Canada. (2011-06-17). *Information for Health Care Professionals. Marijuana (marijuana, cannabis) dried plant for administration by ingestion or other means*. Retrieved on March 22, 2012, from <http://www.hc-sc.gc.ca/dhp-mps/marihuana/how-comment/medpract/infoprof/index-eng.php>
159. Centre for Addiction and Mental Health. (2003). *Do You Know... Cocaine* [Brochure].
160. Centre for Addiction and Mental Health. (2003). *Do You Know... Ecstasy* [Brochure].
161. Centre for Addiction and Mental Health. (2004). *Do You Know... Hallucinogens* [Brochure].
162. Health Canada. (2009-02-24). *Health Concerns: Cocaine and Crack Cocaine*. Retrieved on October 20, 2011, from <http://www.hc-sc.gc.ca/hc-ps/drugs-drogués/learn-renseigne/cocaine-eng.php>
163. Health Canada. (2011-08-02). *Canadian Alcohol and Drug Use Monitoring Survey [Data File]*. Retrieved on August 26, 2011, from http://www.hc-sc.gc.ca/hc-ps/drugs-drogués/stat/_2010/tables-tableaux-eng.php
164. Statistics Canada. (2011-12-19). *CANSIM Table 102-4505 Crude birth rate, age-specific and total fertility rates (live births), Canada, provinces and territories, annual [Data File]*. Retrieved on January 4, 2012, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1024505>
165. Statistics Canada. (2008-10-22). *Historical Statistics of Canada, Section B: Vital Statistics and Health. Vital Statistics (Series B1-81). Table B1-14 Live births, crude birth rate, age-specific fertility rates, gross reproduction rate and percentage of births in hospital, Canada, 1921 to 1974 [Data File]*. Retrieved on June 30, 2011, from <http://www.statcan.gc.ca/pub/11-516-x/sectionb/4147437-eng.htm>
166. Statistics Canada. (2010-10-22). *Age-specific fertility rate: number of live births and age-specific fertility rate by age of mother and number of children previously born, 1961 to 1997 [Data File]*. Retrieved on February 22, 2011, from <http://jeff-lab.queensu.ca/library/free/health-statistics/00060107.ivt>
167. Statistics Canada. (2011-12-19). *CANSIM Table 102-4503 Live births, by age of mother, Canada, provinces and territories [Data File]*. Retrieved on May 30, 2012, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1024503>

References

168. Statistics Canada. (2011). *Women in Canada: A Gender-based Statistical Report*. (Ottawa: Statistics Canada).
169. Public Health Agency of Canada. (2011-02-22). *Reported cases and rates of chlamydia by age group and sex, 1991 to 2009* [Data File]. Retrieved on August 26, 2011, from http://www.phac-aspc.gc.ca/std-mts/sti-its_tab/chlamydia-eng.php
170. Public Health Agency of Canada. (2011-02-23). *Reported cases and rates of infectious syphilis by age group and sex, 1993 to 2009* [Data File]. Retrieved on August 26, 2011, from http://www.phac-aspc.gc.ca/std-mts/sti-its_tab/syphilis-eng.php
171. Public Health Agency of Canada. (2011-02-22). *Reported cases and rates of gonorrhea by age group and sex, 1980 to 2009* [Data File]. Retrieved on August 26, 2011, from http://www.phac-aspc.gc.ca/std-mts/sti-its_tab/gonorrhea-eng.php
172. HealthLinkBC. (2011-02-15). *Check Your Symptoms. Exposure to Sexually Transmitted Infections*. Topic Overview. Retrieved on November 1, 2011, from <http://www.healthlinkbc.ca/kb/content/symptom/stdis.html>
173. Public Health Agency of Canada. (2010-04-19). *Human Papillomavirus (HPV)*. Retrieved on November 1, 2011, from <http://www.phac-aspc.gc.ca/std-mts/hpv-vph/fact-faits-eng.php>
174. Public Health Agency of Canada. (2010). *Report on Sexually Transmitted Infections in Canada: 2008*. (Ottawa: Public Health Agency of Canada).
175. Public Health Agency of Canada. (2010). *HIV/AIDS Epi Updates, July 2010*. (Prepared by Surveillance and Risk Assessment Division, Centre for Communicable Diseases and Infection Control). (Ottawa: Public Health Agency of Canada).
176. Public Health Agency of Canada. (2009). *HIV and AIDS in Canada. Surveillance Report to December 31, 2008*. (Ottawa: Public Health Agency of Canada).
177. Fang, L., Oliver, A., Jayaraman, G. C., & Wong, T. (2010). Trends in Age Disparities Between Younger and Middle-Age Adults Among Reported Rates of Chlamydia, Gonorrhea, and Infectious Syphilis Infections in Canada: Findings From 1997 to 2007. *Sexually Transmitted Diseases*, 37(1), 18-25.
178. Statistics Canada. (2011-04-07). *Legal Marital Status, Common-law Status, Age Groups and Sex for the Population 15 Years and Over of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2001 and 2006 Censuses* [Data File]. Retrieved on April 18, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=88997&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=67&VID=0&VNAMEE=&VNAMEF=>
179. Schmid, G. P., Williams, B. G., Garcia-Calleja, J. M., Miller, C. et al. (2009). The unexplored story of HIV and ageing. *Bulletin of the World Health Organization*, 87(3), 162-162A.
180. Savasta, A. M. (2004). HIV: Associated Transmission Risks in Older Adults - An Integrative Review of the Literature. *Journal of the Association of Nurses in AIDS Care*, 15(1), 50-59.
181. Lindau, S. T., Leitsch, S. A., Lundberg, K. L., & Jerome, J. (2006). Older Women's Attitudes, Behavior and Communication about Sex and HIV: A Community-Based Study. *Journal of Women's Health*, 15(6), 748-753.
182. Minichiello, V., Hawkes, G., & Pitts, M. (2011). HIV, Sexually Transmitted Infections, and Sexuality in Later Life. *Current Infectious Disease Reports*, 13(2), 182-187.
183. Smith, K. P. & Christakis, N. A. (2009). Association Between Widowhood and Risk of Diagnosis With a Sexually Transmitted Infection in Older Adults. *American Journal of Public Health*, 99(11), 2055-2062.
184. Warburton, D. E. R., Nicol, C. W., & Bredin, S. S. D. (2006). Health benefits of physical activity: the evidence. *Canadian Medical Association Journal*, 174(6), 801-809.
185. Lee, I. M. & Skerrett, P. J. (2001). Physical activity and all-cause mortality: what is the dose-response relation? *Medicine & Science in Sports & Exercise*, 33(Supplement 6), S459-S471.
186. Public Health Agency of Canada. (2011-01-20). *Physical Activity. Benefits of Physical Activity*. Retrieved on December 21, 2011, from <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pa-ap/02paap-eng.php>
187. Colley, R. C., Garriguet, D., Janssen, I., Craig, C. L. et al. (2011). Physical activity levels of Canadian adults: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Reports*, 22(1), 7-14.

188. World Health Organization. (2010). *Global Recommendations on Physical Activity for Health*. (Geneva: World Health Organization).
189. Canadian Society for Exercise Physiology. (2012). *Canadian Physical Activity Guidelines. 2012 Scientific Statement*.
190. Colley, R. C., Garriguet, D., Janssen, I., Craig, C. L. et al. (2011). Physical activity levels of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Reports*, 22(1), 15-24.
191. Public Health Agency of Canada & Canadian Institute for Health Information. (2011). *Obesity in Canada: A joint report from the Public Health Agency of Canada and the Canadian Institute for Health Information*.
192. Government of Ontario. (2010). *Healthy Eating, Physical Activity and Healthy Weights. Guidance Document*. (Ministry of Health Promotion).
193. Public Health Agency of Canada. (2011). *Curbing Childhood Obesity: A Federal, Provincial and Territorial Framework for Action to Promote Healthy Weights*.
194. Kirkpatrick, S. & Tarasuk, V. (2003). The relationship between low income and household food expenditure patterns in Canada. *Public Health Nutrition*, 6(6), 589-597.
195. Food and Agriculture Organization of the United Nations. (1996). *Rome Declaration on World Food Security*. Retrieved on November 28, 2011, from <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>
196. Health Canada. (2007). *Income-Related Household Food Security in Canada*. (Ottawa: Health Canada).
197. Rosol, R. (2009). *Evaluating Food Security in Nunavut: Preliminary Results from the Inuit Health Survey*.
198. Egeland, G. M., Johnson-Down, L., Cao, Z. R., Sheikh, N. et al. (2011). Food Insecurity and Nutrition Transition Combine to Affect Nutrient Intakes in Canadian Arctic Communities. *The Journal of Nutrition*, 141(9), 1746-1753.
199. Chan, H. M., Fediuk, K., Hamilton, S., Rotas, L. et al. (2006). Food Security in Nunavut, Canada: Barriers and Recommendations. *International Journal of Circumpolar Health*, 65(6), 416-431.
200. Rosol, R., Huet, C., Wood, M., Lennie, C. et al. (2011). Prevalence of affirmative responses to questions of food insecurity: International Polar Year Inuit Health Survey, 2007-2008. *International Journal of Circumpolar Health*, 70(5), 488-497.
201. Chaput, J.-P., Klingenberg, L., Astrup, A., & Sjödén, A. M. (2011). Modern sedentary activities promote overconsumption of food in our current obesogenic environment. *Obesity Reviews*, 12(5), e12-e20.
202. Charbonneau-Roberts, G., Saudny-Unterberger, H., Kuhnlein, H. V., & Egeland, G. M. (2005). Body Mass Index May Overestimate the Prevalence of Overweight and Obesity among the Inuit. *International Journal of Circumpolar Health*, 64(2), 163-169.
203. Srikanthan, P., Seeman, T. E., & Karlamangla, A. S. (2009). Waist-Hip-Ratio as a Predictor of All-Cause Mortality in High-Functioning Older Adults. *Annals of Epidemiology*, 19(10), 724-731.
204. Cole, T. J., Bellizzi, M. C., Flegal, K. M., & Dietz, W. H. (2000). Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal*, 320(7244), 1240-1243.
205. Cole, T. J., Flegal, K. M., Nicholls, D., & Jackson, A. A. (2007). Body mass index cut offs to define thinness in children and adolescents: international survey. *British Medical Journal*, 335(7612), 194-197.
206. Douketis, J. D., Paradis, G., Keller, H., & Martineau, C. (2005). Canadian guidelines for body weight classification in adults: application in clinical practice to screen for overweight and obesity and to assess disease risk. *Canadian Medical Association Journal*, 172(8), 995-998.
207. World Health Organization. (2011-03). *Obesity and overweight*. Retrieved on April 19, 2012, from <http://www.who.int/mediacentre/factsheets/fs311/en/>
208. Statistics Canada. *Canadian Health Measures Survey, 2007: Cycle 1* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
209. Statistics Canada. *Canada Health Survey, 1978* [Share Microdata File]. Ottawa, Ontario: Statistics Canada. All computations on these microdata were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).

References

210. Public Health Agency of Canada. (2006). Supplement - Canadian National Report on Immunization, 2006. *Canada Communicable Disease Report (CCDR)*, 32S3, 1-44.
211. Laroche, J., Frescura, A., & Belzak, L. (2010). Results from the 2006 and 2009 Childhood National Immunization Coverage Surveys. *Presentation at the 9th Canadian Immunization Conference. Immunization: A Global Challenge for the 21st Century*, Quebec City, CA.
212. Public Health Agency of Canada. (2006). *Canadian Immunization Guide. (Seventh ed.)*. (Ottawa: Public Health Agency of Canada).
213. F/P/T Advisory Committee on Population Health and Health Security. (2003). *National Immunization Strategy: Final Report, 2003*.
214. Health Canada. (2011-11-24). *Childhood Immunization*. Retrieved on July 11, 2012, from <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/med/immuniz-eng.php>
215. Public Health Agency of Canada. (2005). National Standards for Immunization Coverage Assessment: Recommendations from the *Canadian Immunization Registry Network. Canada Communicable Disease Report (CCDR)*, 31(9), 93-96.
216. Johnson, J. L., Greaves, L., & Repta, R. (2007). *Better Science with Sex and Gender: A Primer for Health Research*. (Vancouver: Women's Health Research Network).
217. Clow, B., Pederson, A., Haworth-Brockman, M., & Bernier, J. (2009). *Rising to the Challenge: Sex- and gender-based analysis for health planning, policy and research in Canada*. (Halifax: Atlantic Centre of Excellence for Women's Health).
218. Public Health Agency of Canada. (2011-05). *Sex and Gender-Based Analysis Training Manual*. Unpublished.
219. Johnson, J. L., Greaves, L., & Repta, R. (2009). Better science with sex and gender: Facilitating the use of a sex and gender-based analysis in health research. *International Journal for Equity in Health*, 8(14).
220. Health Canada. (2010-03-12). *Health Portfolio Sex and Gender-Based Analysis Policy*. Retrieved on December 8, 2011, from <http://www.hc-sc.gc.ca/hl-vs/pubs/women-femmes/sgba-policy-politique-ags-eng.php>
221. Canadian Institutes of Health Research. (2012-05-01). *IGH Relevance Review Criteria*. Retrieved on July 25, 2012, from <http://www.cihr-irsc.gc.ca/e/45212.html>
222. Lovaas, K. E. (2005). Gender Roles. In J. T. Sears (Ed.), *Youth, education, and sexualities: An international encyclopedia*, (pp. 364-369). (Westport: Greenwood Publishing Group).
223. Wells, K., Roberts, G., & Allan, C. (2012). *Supporting transsexual and transgender students in K-12 schools: A guide for educators*. (Ottawa: Canadian Teachers' Federation).
224. GLAAD. (2010-05). *GLAAD's Media Reference Guide - Transgender Glossary of Terms*. Retrieved on February 13, 2012, from <http://www.glaad.org/reference/transgender>
225. Goldner, E. M., Jenkins, E., Palma, J., & Bilsker, D. (2011). *A Concise Introduction to Mental Health in Canada*. (Toronto: Canadian Scholars' Press Inc.).
226. Teich, N. M. (2012). *Transgender 101: A simple guide to a complex issue*. (New York: Columbia University Press).
227. Pan American Health Organization. (n.d.). *Gender Mainstreaming in Health: A Practical Guide*.
228. World Health Organization. (2007). *Engaging men and boys in changing gender-based inequity in health: Evidence for programme interventions*. (Geneva: World Health Organization).
229. Shelley, C. A. (2008). *Transpeople: Repudiation, trauma, healing*. (Toronto: University of Toronto Press).
230. Statistics Canada. *General Social Survey, 2007: Cycle 21 - Family, Social Support, and Retirement, 2008-09-08*. Ottawa, Ontario: Statistics Canada. Social and Aboriginal Statistics Division, Data Liberation Initiative [producer and distributor]. All computations on these microdata were prepared by the Public Health Agency of Canada and the responsibility for the use and interpretation of these data is entirely that of the author(s).
231. Statistics Canada. (2007). *General Social Survey, 2007: Cycle 21 - Family, Social Support and Retirement: Main Survey Questionnaire*. (Ottawa: Statistics Canada).
232. Canadian Institutes of Health Research Institute of Gender and Health. (2009). *Gender Matters: Institute of Gender and Health Strategic Plan 2009-2012*.

233. Greaves, L. (2011). Why Put Gender and Sex into Health Research? In J. L. Oliffe & L. Greaves (Eds.), *Designing and Conducting Gender, Sex and Health Research*, (pp. 3-13). (Thousand Oaks: Sage Publications, Inc.).
234. World Health Organization. (2002). *Gender Analysis in Health: A review of selected tools*. (Geneva: World Health Organization).
235. Public Health Agency of Canada. (2010). Canada is Committed to SGBA. *Health Equit-eNotes*, 2, 1-7.
236. Status of Women Canada. (2010). *Gender-based Analysis: An Integrated Approach to Gender-based Analysis. 2007 Edition*.
237. Federal, Provincial, & Territorial Advisory Committee on Population Health. (1994). *Strategies for Population Health: Investing in the Health of Canadians*.
238. Public Health Agency of Canada. (2001-12-08). *Towards a Common Understanding: Clarifying the Core Concepts of Population Health*. Retrieved on December 9, 2011, from <http://www.phac-aspc.gc.ca/ph-sp/docs/common-commune/execsumm-eng.php>
239. Public Health Agency of Canada. (2011-10-21). *What Determines Health?* Retrieved on October 17, 2011, from <http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php>
240. Commission on Social Determinants of Health. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health*. Final Report of the Commission on Social Determinants of Health. (Geneva: World Health Organization).
241. Marmot, M., Atkinson, T., Bell, J., Black, C. et al. (2010). *Fair Society, Healthy Lives: Strategic Review of Health Inequalities in England Post-2010*. (The Marmot Review).
242. Health Canada. (2003). *Exploring Concepts of Gender and Health*. (Ottawa: Health Canada).
243. Mikkonen, J. & Raphael, D. (2010). *Social Determinants of Health: The Canadian Facts*. (Toronto: York University School of Health Policy and Management).
244. World Health Organization. (2009). *Strategy for Integrating Gender Analysis and Actions into the Work of WHO*. (Geneva: World Health Organization).
245. Canadian Women's Health Network. (n.d.). *Sex and Gender-Based Analysis (SGBA)*. Retrieved on December 8, 2011, from <http://www.cwhn.ca/en/node/41845>
246. Correa-de-Araujo, R. (2006). Serious Gaps: How the Lack of Sex/Gender-Based Research Impairs Health. *Journal of Women's Health*, 15(10), 1116-1122.
247. Public Health Agency of Canada. (2010). *Report from the Canadian Chronic Disease Surveillance System: Hypertension in Canada, 2010*.
248. Wilkins, K., Campbell, N. R. C., Joffres, M. R., McAlister, F. A. et al. (2010). Blood pressure in Canadian adults. *Health Reports*, 21(1), 1-10.
249. He, J. & Whelton, P. K. (1999). Elevated systolic blood pressure and risk of cardiovascular and renal disease: Overview of evidence from observational epidemiologic studies and randomized controlled trials. *American Heart Journal*, 138(3, Supplement), S211-S219.
250. Society for Women's Health Research. (2009). *Sex Differences in Cardio/Cerebrovascular Diseases*. Retrieved on January 19, 2012, from http://www.womenshealthresearch.org/site/PageServer?pagename=hs_healthfacts_cardio
251. Piña, I. L. & Buchter, C. (2003). Heart Failure in Women. *Cardiology in Review*, 11(6), 337-344.
252. Jessup, M. & Piña, I. L. (2004). Is it important to examine gender differences in the epidemiology and outcome of severe heart failure? *Journal of Thoracic and Cardiovascular Surgery*, 127(5), 1247-1252.
253. Canadian Institute for Health Information & Health Canada. (2003). *Women's Health Surveillance Report: A Multi-dimensional Look at the Health of Canadian Women*. (Ottawa: Canadian Institute for Health Information).
254. Samad, Z., Wang, T. Y., Frazier, C. G., Shah, S. H. et al. (2008). Closing the Gap: Treating Hypertension in Women. *Cardiology in Review*, 16(6), 305-313.
255. Reckelhoff, J. F. (2001). Gender Differences in the Regulation of Blood Pressure. *Hypertension*, 37(5), 1199-1208.
256. National Heart Lung and Blood Institute. (n.d.). *High Blood Pressure in Pregnancy*. Retrieved on February 7, 2012, from http://www.nhlbi.nih.gov/health/public/heart/hbp/hbp_preg.htm#

References

257. Seely, E. W. (1999). Hypertension in Pregnancy: A Potential Window into Long-Term Cardiovascular Risk in Women. *The Journal of Clinical Endocrinology & Metabolism*, 84(6), 1858-1861.
258. Marín, R., Gorostidi, M., Portal, C. G., Sánchez, M. et al. (2000). Long-Term Prognosis of Hypertension in Pregnancy. *Hypertension in Pregnancy*, 19(2), 199-209.
259. Wilson, B. J., Watson, M. S., Prescott, G., Sunderland, S. et al. (2003). Hypertensive diseases of pregnancy and risk of hypertension and stroke in later life: results from cohort study. *British Medical Journal*, 326, 845-852.
260. Courtenay, W. H. (2000). Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social Science & Medicine*, 50(10), 1385-1401.
261. Wolf-Maier, K., Cooper, R. S., Kramer, H., Banegas, J. R., Giampaoli, S. et al. (2004). Hypertension Treatment and Control in Five European Countries, Canada, and the United States. *Hypertension*, 43(1), 10-17.
262. Meyer, I. H. (2007). Prejudice and Discrimination as Social Stressors. In I. H. Meyer & M. E. Northridge (Eds.), *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations*, (pp. 242-267). (New York: Springer).
263. Herek, G. M., Chopp, R., & Stroh, D. (2007). Sexual Stigma: Putting Sexual Minority Health Issues in Context. In I. H. Meyer & M. E. Northridge (Eds.), *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations*, (pp. 171-208). (New York: Springer).
264. Mayo Clinic. (2012-01-24). *High blood pressure (hypertension): Risk factors*. Retrieved on June 20, 2012, from <http://www.mayoclinic.com/health/high-blood-pressure/ds00100/dsection=risk-factors>
265. Ong, K. L., Tso, A. W. K., Lam, K. S. L., & Cheung, B. M. Y. (2008). Gender Difference in Blood Pressure Control and Cardiovascular Risk Factors in Americans With Diagnosed Hypertension. *Hypertension*, 51(4), 1142-1148.
266. Public Health Agency of Canada. (2009-05-15). *Reducing the Risk of Hypertension*. Retrieved on March 13, 2012, from http://www.phac-aspc.gc.ca/cd-mc/cvd-mcv/hypertension_risk-hypertension_risques-eng.php
267. World Health Organization. (2002-06). *Gender and Mental Health*. Retrieved on September 26, 2011, from <http://whqlibdoc.who.int/gender/2002/a85573.pdf>
268. World Health Organization. (2011). *Gender and women's mental health*. Retrieved on September 26, 2011, from http://www.who.int/mental_health/prevention/genderwomen/en/
269. Health Canada. (2002). *A Report on Mental Illnesses in Canada*. (Ottawa: Health Canada).
270. Canadian Mental Health Association. (2007-05-08). *Men and Mental Illness*. Retrieved on October 31, 2011, from http://www.cmha.ca/bins/content_page.asp?cid=3-726
271. Séguin, M., Lesage, A., Turecki, G., Daigle, F. et al. (2005). *Research Project on Deaths by Suicide in New Brunswick between April 2002 and May 2003*. (New Brunswick: Douglas Hospital Research Centre and Government of New Brunswick).
272. Canadian Institute for Health Information. (2010). *Depression Among Seniors in Residential Care*.
273. Penney, C., Senécal, S., Bobet, E., & Guimond, É. (2009). The effect of community level factors on suicide in Inuit Nunangat. *Canadian Diversity*, 7(3), 77-84.
274. Canadian Mental Health Association (Ontario). (n.d.). *Gender Differences*. Retrieved on August 22, 2011, from <http://www.ontario.cmha.ca/women.asp?CID=5619>
275. Vigod, S. N. & Stewart, D. E. (2009). Emergent research in the cause of mental illness in women across the lifespan. *Current Opinion in Psychiatry*, 22(4), 396-400.
276. Mayo Clinic. (2010-09-01). *Depression in women: Understanding the gender gap*. Retrieved on December 7, 2011, from <http://www.mayoclinic.com/health/depression/MH00035>
277. Bennett, H. A., Einarson, A., Taddio, A., Koren, G. et al. (2004). Prevalence of Depression During Pregnancy: Systematic Review. *Obstetrics & Gynecology*, 103(4), 698-709.
278. National Institute of Mental Health. (2009-01-23). *What causes depression in women?* Retrieved on December 7, 2011, from <http://nimh.nih.gov/health/publications/women-and-depression-discovering-hope/what-causes-depression-in-women.shtml>

References

279. Fung, K. & Dennis, C. L. (2010). Postpartum depression among immigrant women. *Current Opinion in Psychiatry*, 23(4), 342-348.
280. Stewart, D. E., Gagnon, A., Saucier, J. F., Wahoush, O. et al. (2008). Postpartum Depression Symptoms in Newcomers. *Canadian Journal of Psychiatry*, 53(2), 121-124.
281. Freeman, E. W. (2010). Associations of depression with the transition to menopause. *Menopause*, 17(4), 823-827.
282. Altemus, M. (2006). Sex differences in depression and anxiety disorders: Potential biological determinants. *Hormones and Behavior*, 50(4), 534-538.
283. Kuehner, C. (2003). Gender differences in unipolar depression: an update of epidemiological findings and possible explanations. *Acta Psychiatrica Scandinavica*, 108(3), 163-174.
284. Tiffin, P. A., Pearce, M. S., & Parker, L. (2005). Social mobility over the lifecourse and self reported mental health at age 50: prospective cohort study. *Journal of Epidemiology and Community Health*, 59(10), 870-872.
285. Smith, K. L. W., Matheson, F. I., Moineddin, R., & Glazier, R. (2007). Gender, Income and Immigration Differences in Depression in Canadian Urban Centres. *Canadian Journal of Public Health*, 98(2), 149-153.
286. Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M. et al. (2010). Suicide and Suicide Risk in Lesbian, Gay, Bisexual, and Transgender Populations: Review and Recommendations. *Journal of Homosexuality*, 58(1), 10-51.
287. 2-Spirited People of the 1st Nations. (n.d.). *What Health Care Providers Can Learn: A History of 2 Spirited People*. Retrieved on June 22, 2012, from <http://www.2spirits.com/>
288. Deschamps, G. (1998). *We Are Part of a Tradition: A Guide on Two-Spirited People for First Nations Communities*. (Toronto).
289. Rieger, G. & Savin-Williams, R. (2012). Gender Nonconformity, Sexual Orientation, and Psychological Well-Being. *Archives of Sexual Behavior*, 41(3), 611-621.
290. Mayock, P., Bryan, A., Carr, N., & Kitching, K. (2008). *Supporting LGBT Lives: A Study of Mental Health and Well-Being*. (Gay and Lesbian Equality Network [GLEN] and BeLonGTo).
291. Tjepkema, M. (2008). Health care among gay, lesbian and bisexual Canadians. *Health Reports*, 19(1), 53-64.
292. Nemoto, T., Bödeker, B., & Iwamoto, M. (2011). Social Support, Exposure to Violence and Transphobia, and Correlates of Depression Among Male-to-Female Transgender Women With a History of Sex Work. *American Journal of Public Health*, 101(10), 1980-1988.
293. Clements-Nolle, K., Marx, R., & Katz, M. (2006). Attempted Suicide Among Transgender Persons. *Journal of Homosexuality*, 51(3), 53-69.
294. *Sexually Transmitted Diseases*. (2002). Retrieved on December 13, 2011, from <http://www.enotes.com/sexually-transmitted-reference/sexually-transmitted-diseases-173554>
295. Cervical Barrier Advancement Society. (n.d.). *Preventing HIV/STIs*.
296. Centers for Disease Control and Prevention. (2011-03-25). *Chlamydia - CDC Fact Sheet*. Retrieved on December 13, 2011, from <http://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm>
297. Health Canada. (2006-12-06). *It's Your Health - Chlamydia*. Retrieved on December 13, 2011, from <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/chlamyd-eng.php>
298. Health Canada. (2006-12-07). *It's Your Health - Gonorrhea*. Retrieved on December 13, 2011, from <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/gonorrh-eng.php>
299. Centers for Disease Control and Prevention. (2011-04-05). *Gonorrhea - CDC Fact Sheet*. Retrieved on December 13, 2011, from <http://www.cdc.gov/std/gonorrhea/STDFact-gonorrhea.htm>
300. Mayo Clinic. (2011-10-07). *Orchitis*. Retrieved on April 5, 2012, from <http://www.mayoclinic.com/health/orchitis/DS00602>
301. Centers for Disease Control and Prevention. (2010-09-16). *Syphilis - CDC Fact Sheet*. Retrieved on December 13, 2011, from <http://www.cdc.gov/std/syphilis/STDFact-Syphilis.htm>
302. Public Health Agency of Canada. (2010). *Canadian Guidelines on Sexually Transmitted Infections, 2008 Edition*. (Ottawa: Public Health Agency of Canada).

References

303. SexualityandU.ca. (2010). *Statistics - Oral Sex Practices*. Retrieved on December 13, 2011, from <http://www.sexualityandu.ca/en/resource-library/statistics/oral-sex-practices>
304. Marsiglio, W. (1988). Adolescent male sexuality and heterosexual masculinity: A conceptual model and review. *Journal of Adolescent Research*, 3(3-4), 285-303.
305. Shearer, C. L., Hosterman, S. J., Gillen, M. M., & Lefkowitz, E. S. (2005). Are Traditional Gender Role Attitudes Associated With Risky Sexual Behavior and Condom-related Beliefs? *Sex Roles*, 52(5), 311-324.
306. Allman, D. (1999). *M is for Mutual A is for Acts - Male Sex Work and AIDS in Canada*. (Ottawa: Health Canada).
307. Public Health Agency of Canada. (2006). *Street Youth in Canada: Findings from Enhanced Surveillance of Canadian Street Youth, 1999-2003*. (Ottawa: Public Health Agency of Canada).
308. Kaestle, C. E., Halpern, C. T., Miller, W. C., & Ford, C. A. (2005). Young Age at First Sexual Intercourse and Sexually Transmitted Infections in Adolescents and Young Adults. *American Journal of Epidemiology*, 161(8), 774-780.
309. Sandfort, T. G. M., Orr, M., Hirsch, J. S., & Santelli, J. (2008). Long-Term Health Correlates of Timing of Sexual Debut: Results From a National US Study. *American Journal of Public Health*, 98(1), 155-161.
310. Bodley-Tickell, A. T., Olowokure, B., Bhaduri, S., White, D. J. et al. (2008). Trends in sexually transmitted infections (other than HIV) in older people: analysis of data from an enhanced surveillance system. *Sexually Transmitted Infections*, 84(4), 312-317.
311. Chesson, H. W., Zaidi, A. A., & Aral, S. O. (2008). Decreasing Age Disparities in Syphilis and Gonorrhea Incidence Rates in the United States, 1981-2005. *Sexually Transmitted Diseases*, 35(4), 393-397.
312. Haworth-Brockman, M. & Isfeld, H. (2009). *Guidelines for gender-based analysis of health data for decision making*. (Pan American Health Organization).
313. Shoveller, J., Johnson, J., Rosenberg, M., Greaves, L. et al. (2009). Youth's experiences with STI testing in four communities in British Columbia, Canada. *Sexually Transmitted Infections*, 85(5), 397-401.
314. Shoveller, J. A., Knight, R., Johnson, J., Oliffe, J. L. et al. (2010). 'Not the swab!' Young men's experiences with STI testing. *Sociology of Health & Illness*, 32(1), 57-73.
315. Rusch, M., Shoveller, J., Burgess, S., Stancer, K. et al. (2008). Association of Sexually Transmitted Disease-Related Stigma With Sexual Health Care Among Women Attending a Community Clinic Program. *Sexually Transmitted Diseases*, 35(6), 553-557.
316. Sears, J. T. (2007). *The Greenwood Encyclopedia of Love, Courtship, & Sexuality Through History: The modern world*. (vols. 6) (Westport: Greenwood Publishing Group).
317. Barth, K. R., Cook, R. L., Downs, J. S., Switzer, G. E. et al. (2002). Social stigma and negative consequences: factors that influence college students' decisions to seek testing for sexually transmitted infections. *Journal of American College Health*, 50(4), 153-159.
318. Flicker, S., Flynn, S., Larkin, J., Travers, R. et al. (2009). *Sexpress: The Toronto Teen Survey Report*. (Toronto: Planned Parenthood Toronto).
319. Shannon, K., Strathdee, S. A., Shoveller, J., Rusch, M. et al. (2009). Structural and Environmental Barriers to Condom Use Negotiation With Clients Among Female Sex Workers: Implications for HIV-Prevention Strategies and Policy. *American Journal of Public Health*, 99(4), 659-665.
320. Tracy, J. K., Lydecker, A. D., & Ireland, L. (2010). Barriers to Cervical Cancer Screening Among Lesbians. *Journal of Women's Health*, 19(2), 229-237.
321. Dean, L., Meyer, I. H., Robinson, K., Sell, R. L. et al. (2000). Lesbian, Gay, Bisexual, and Transgender Health: Findings and Concerns. *Journal of the Gay and Lesbian Medical Association*, 4(3), 102-151.
322. Saewyc, E. M., Poon, C., Wang, N., Homma, Y. et al. (2007). *Not Yet Equal: The Health of Lesbian, Gay, & Bisexual Youth in BC*. (Vancouver: McCreary Centre Society).
323. Clements-Nolle, K., Marx, R., Guzman, R., & Katz, M. (2001). HIV prevalence, risk behaviors, health care use, and mental health status of transgender persons: implications for public health intervention. *American Journal of Public Health*, 91(6), 915-921.

324. Bird, C. E. & Rieker, P. P. (1999). Gender matters: an integrated model for understanding men's and women's health. *Social Science & Medicine*, 48(6), 745-755.
325. Macintyre, S., Hunt, K., & Sweeting, H. (1996). Gender differences in health: Are things really as simple as they seem? *Social Science & Medicine*, 42(4), 617-624.
326. Lawrence, K. & Rieder, A. (2007). Methodologic and ethical ramifications of sex and gender differences in public health research. *Gender Medicine*, 4(2), S96-S105.
327. Prins, M. H., Smits, K. M., & Smits, L. J. (2007). Methodologic Ramifications of Paying Attention to Sex and Gender Differences in Clinical Research. *Gender Medicine*, 4(2), S106-S110.
328. Krieger, N. (2002). Genders, sexes, and health: what are the connections - and why does it matter? *International Journal of Epidemiology*, 32(4), 652-657.
329. Phillips, S. P. (2005). Defining and measuring gender: A social determinant of health whose time has come. *International Journal for Equity in Health*, 4(11).
330. Phillips, S. P. (2008). Measuring the health effects of gender. *Journal of Epidemiology and Community Health*, 62(4), 368-371.
331. ACOG Committee Opinion. (2007). *Research Involving Women*. (Washington, D.C.: American College of Obstetricians and Gynecologists).
332. Health Canada. (1999). *Women's Health Surveillance: A Plan of Action for Health Canada*. (Ottawa: Minister of Public Works and Government Services).
333. Austin, S., Tudiver, S., Chultem, M., & Kantiebo, M. (2007). Gender-based analysis, women's health surveillance and women's health indicators - Working together to promote equity in health in Canada. *International Journal of Public Health*, 52(Supplement 1), S41-S48.
334. Chasey, S., Pederson, A., & Duff, P. (2010). *Canadian Women's Health Indicators: An Introduction, Environmental Scan, and Framework Examination*. (Vancouver: British Columbia Centre of Excellence for Women's Health).
335. Donner, L., Isfeld, H., Haworth-Brockman, M., & Forsey, C. (2008). *A Profile of Women's Health in Manitoba*. (Winnipeg: Prairie Women's Health Centre of Excellence).
336. Fransoo, R., Martens, P., The Need to Know Team (funded through CIHR), Burland, E. et al. *Sex Differences in Health Status, Health Care Use, and Quality of Care: A Population-Based Analysis for Manitoba's Regional Health Authorities*. (Winnipeg: Centre for Health Policy).
337. The University Health Network Women's Health Program, The Centre for Research in Women's Health, & The Institute for Clinical Evaluative Sciences. (2002). *Ontario Women's Health Status Report*. (Prepared for the Ontario Women's Health Council)
338. Freeman, J. G., King, M., Pickett, W., Craig, W. et al. (2011). *The Health of Canada's Young People: A Mental Health Focus*. (Ottawa: Public Health Agency of Canada).
339. HBSC International Coordinating Centre Child & Adolescent Health Research Unit. (n.d.). *HBSC*. Retrieved on June 6, 2012, from <http://www.hbsc.org/>
340. HBSC International Coordinating Centre Child & Adolescent Health Research Unit. (n.d.). *About HBSC*. Retrieved on June 6, 2012, from <http://www.hbsc.org/about/index.html>
341. Barnekow, V. & Muijen, M. (2009). Child and adolescent health and development in a European perspective. *International Journal of Public Health*, 54(2), s128-s130.
342. United Nations. (1995). Beijing Declaration and Platform for Action. *The Fourth World Conference on Women*, Beijing, China.
343. Canadian Institutes of Health Research. (2011-04-28). *Gender, Sex and Health Research Guide: A Tool for CIHR Applicants*. Retrieved on December 5, 2011, from <http://www.cihr-irsc.gc.ca/e/32019.html>
344. World Health Organization. (2011). *Mainstreaming gender in public health: what does it mean?* Retrieved on November 7, 2011, from http://www.who.int/gender/mainstreaming/mainstreaming_gender/en/index.html
345. Fraser, S. (2009). *2009 Spring Report of the Auditor General of Canada*.
346. Health Canada. (2010). *Sex and Gender-Based Analysis Quick Reference Manual*.

References

347. First Nations, Métis, & Inuit GBA. (2009). *Our Voices: A First Nations, Métis, and Inuit Sex- And Gender-Based Analysis - About the Toolkit*. Retrieved on December 8, 2011, from <http://www.aboriginalgba.ca/about/>
348. Assembly of First Nations. (n.d.). *AFN Women's Council. Annual Report 2009-2010*. Retrieved on April 25, 2012, from <http://64.26.129.156/article.asp?id=133>
349. Native Women's Association of Canada. (n.d.). *Culturally Relevant Gender Analysis*. Retrieved on May 25, 2012, from <http://www.nwac.ca/programs/culturally-relevant-gender-analysis>
350. Native Women's Association of Canada. (n.d.). *A Culturally Relevant Gender Application Protocol*. (Ottawa: Native Women's Association of Canada).
351. Native Women's Association of Canada. (n.d.). *NWAC GBA: A Culturally Relevant Gender Application Protocol* [Brochure].
352. Pauktuutit Inuit Women of Canada. (2009). *Annual Report 2008-2009*.
353. Status of Women Canada. (2009-02-03). *Disclosure of Grant and Contribution Awards*. Retrieved on March 26, 2012, from <http://www.swc-cfc.gc.ca/account-resp/pd-dp/dgc-dsc/2007-2008/gc-sc-171-eng.html>
354. Aboriginal Affairs and Northern Development Canada. (2010-09-15). *Impact Evaluation of INAC's Gender-Based Analysis Policy - Follow-up Status Update as of September 30, 2009*. Retrieved on March 26, 2012, from <http://www.aadnc-aandc.gc.ca/eng/1100100011906>
355. National Advisory Committee on Immunization. (2012). Update on Human Papillomavirus (HPV) Vaccines. *Canada Communicable Disease Report (CCDR)*, 38(ACS-1), 1-62.
356. Giuliano, A. R. & Salmon, D. (2008). The Case for a Gender-Neutral (Universal) Human Papillomavirus Vaccination Policy in the United States: Point. *Cancer Epidemiology, Biomarkers & Prevention*, 17(4), 805-808.
357. Snyder, J. E. (2011). Trend Analysis of Medical Publications About LGBT Persons: 1950-2007. *Journal of Homosexuality*, 58(2), 164-188.
358. Public Health Agency of Canada. (2011-01-20). *Benefits to Physical Activity*. Retrieved on March 1, 2012, from <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pa-ap/02paap-eng.php>
359. Kjønniksen, L., Anderssen, N., & Wold, B. (2009). Organized youth sport as a predictor of physical activity in adulthood. *Scandinavian Journal of Medicine & Science in Sports*, 19(5), 646-654.
360. Trudeau, F., Laurencelle, L., & Shephard, R. J. (2004). Tracking of Physical Activity from Childhood to Adulthood. *Medicine & Science in Sports & Exercise*, 36(11), 1937-1943.
361. Veugelers, P. J. & Fitzgerald, A. L. (2005). Prevalence of and risk factors for childhood overweight and obesity. *Canadian Medical Association Journal*, 173(6), 607-613.
362. Shields, M. (2006). Overweight and obesity among children and youth. *Health Reports*, 17(3), 27-42.
363. Simen-Kapeu, A. & Veugelers, P. J. (2010). Should public health interventions aimed at reducing childhood overweight and obesity be gender focused? *BMC Public Health*, 10(340).
364. World Health Organization. (2007). *A Guide for Population-Based Approaches to Increasing Levels of Physical Activity: Implementation of the WHO Global Strategy on Diet, Physical Activity and Health*. (Geneva: World Health Organization).
365. Public Health Agency of Canada. (2009). *Investing in Prevention - The Economic Perspective. Key Findings from a Survey of the Recent Evidence*.
366. Hankivsky, O., Friesen, J., Varcoe, C., MacPhail, F. et al. (2004). Expanding Economic Costing in Health Care: Values, Gender and Diversity. *Canadian Public Policy*, 30(3), 257-282.
367. Morgan, P. J., Lubans, D. R., Plotnikoff, R. C., Callister, R. et al. (2011). The 'Healthy Dads, Healthy Kids' community effectiveness trial: study protocol of a community-based healthy lifestyle program for fathers and their children. *BMC Public Health*, 11(876).
368. Burrows, T., Morgan, P. J., Lubans, D. R., Callister, R. et al. (2012). Dietary outcomes of the Healthy Dads Healthy Kids randomised controlled trial. *Journal of Pediatric Gastroenterology and Nutrition*, (Publish ahead of print).

369. Lubans, D. R., Morgan, P. J., Collins, C. E., Okely, A. D. et al. (2012). Mediators of weight loss in the 'Healthy Dads, Healthy Kids' pilot study for overweight fathers. *International Journal of Behavioral Nutrition and Physical Activity*, 9(45).
370. Morgan, P. J., Lubans, D. R., Callister, R., Okely, A. D. et al. (2011). The 'Healthy Dads, Healthy Kids' randomized controlled trial: efficacy of a healthy lifestyle program for overweight fathers and their children. *International Journal of Obesity*, 35(3), 436-447.
371. Hall, L., Collins, C. E., Morgan, P. J., Burrows, T. L. et al. (2011). Children's intake of fruit and selected energy-dense nutrient-poor foods is associated with fathers' intake. *Journal of the American Dietetic Association*, 111(7), 1039-1044.
372. Healthy Dads Healthy Kids. (2010-07-13). *HDHK wins global award*. Retrieved on July 5, 2012, from <http://healthydadsandkids.com/2010/07/13/ico2010-stockholm/>
373. Rio Tinto Coal Australia. (n.d.). *Healthy Dads Healthy Kids*. Retrieved on July 5, 2012, from http://www.riotintocoalaustralia.com.au/sustainabledevelopment/1779_where_does_our_funding_go_1884.asp
374. Katz, D. L. (2009). School-based interventions for health promotion and weight control: not just waiting on the world to change. *Annual Review of Public Health*, 30, 253-272.
375. Katz, D. L., O'Connell, M., Njike, V. Y., Yeh, M.-C. et al. (2008). Strategies for the prevention and control of obesity in the school setting: systematic review and meta-analysis. *International Journal of Obesity*, 32(12), 1780-1789.
376. Kropski, J. A., Keckley, P. H., & Jensen, G. L. (2008). School-based obesity prevention programs: An evidence-based review. *Obesity*, 16(5), 1009-1018.
377. Flynn, M. A. T., McNeil, D. A., Maloff, B., Mutasingwa, D. et al. (2006). Reducing obesity and related chronic disease risk in children and youth: a synthesis of evidence with 'best practice' recommendations. *Obesity Reviews*, 7(Supplement s1), 7-66.
378. Pan-Canadian Joint Consortium for School Health. (2008). *What is Comprehensive School Health?* (Joint Consortium for School Health).
379. Pan-Canadian Joint Consortium for School Health. (2011). *Pan-Canadian Joint Consortium for School Health: Governments working across the health and education sectors. Annual Report*. (Pan-Canadian Joint Consortium for School Health).
380. Stewart-Brown, S. (2006). *What is the evidence on school health promotion in improving health or preventing disease and, specifically, what is the effectiveness of the health promoting schools approach?* (Copenhagen: WHO Regional Office for Europe [Health Evidence Network]).
381. Demers, G. (2006). Homophobia in Sport — Fact of Life, Taboo Subject. *Canadian Journal for Women in Coaching*, 6(2).
382. Public Health Agency of Canada. (2010). *Questions & Answers: Gender Identity in Schools*.
383. Krieger, I. (2011). *Helping your transgender teen: A guide for parents*. (New Haven: Genderwise Press).
384. Robertson, S. (1995). The Life and Times of CAAWS. *Canadian Woman Studies*, 15(4), 16-21.
385. Canadian Association for the Advancement of Women and Sport and Physical Activity. (n.d.). *CAAWS Mission and Vision*. Retrieved on December 15, 2011, from http://caaws.ca/e/about/mission_vision.cfm
386. Canadian Heritage. (2009). *Actively engaged: A policy on Sport for Women and Girls*.
387. United Nations Division for the Advancement of Women & Department of Economic and Social Affairs. (2007). *Women 2000 and Beyond: Women, gender equality and sport*. (New York: United Nations).
388. Myklebust, G., Engebretsen, L., Brækken, I. H., Skjølberg, A. et al. (2003). Prevention of Anterior Cruciate Ligament Injuries in Female Team Handball Players: A Prospective Intervention Study Over Three Seasons. *Clinical Journal of Sport Medicine*, 13(2), 71-78.
389. *ACL injuries in women: Why the gender disparity and how do we reduce it?* (2012). Retrieved on March 30, 2012, from <http://www.orthosupersite.com/view.aspx?rid=2093>
390. Alexander, M. J. L. (1997). Comparison of Biomechanical Aspects of Performance in Elite Male and Female Track Athletes. In J. Wilkerson, K. Ludwig, & W. Zimmermann (Eds.), *15 International Symposium on Biomechanics in Sports*, Denton, US.
391. Brynhildsen, J., Ekstrand, J., Jeppsson, A., & Tropp H. (1990). Previous injuries and persisting symptoms in female soccer players. *International Journal of Sports Medicine*, 11(6), 489-492.

References

392. Ristolainen, L., Heinonen, A., Waller, B., Kujala, U. M. et al. (2009). Gender differences in sport injury risk and types of injury: a retrospective twelve-month study on cross-country skiers, swimmers, long-distance runners and soccer players. *Journal of Sports Science and Medicine*, 8(3), 443-451.
393. Harber, V. (n.d.). *The Female Athlete Perspective. Coach/Parent/Administrator Guide*. (Canadian Sport for Life).
394. Girls@Play. (2009-09). *What's happening...* Retrieved on December 15, 2011, from <http://www.caaws.ca/girlsatplay/>
395. Canadian Association for the Advancement of Women and Sport and Physical Activity. (n.d.). *Increasing Physical Activity and Sport for Ontario Women 55-70+ Funded Pilot Projects*. Retrieved on December 15, 2011, from http://www.caaws.ca/women55plus/pilot_projects/index.cfm
396. Canadian Association for the Advancement of Women and Sport and Physical Activity. (n.d.). *About Mothers in Motion*. Retrieved on June 6, 2012, from <http://www.caaws.ca/mothersinmotion/e/about/index.cfm>
397. Canadian Association for the Advancement of Women and Sport and Physical Activity. (n.d.). *Active and Free. Young women, physical activity and tobacco*. Retrieved on May 16, 2012, from <http://www.caaws.ca/activeandfree/e/index.cfm>
398. Canadian Association for the Advancement of Women and Sport and Physical Activity. (n.d.). *Team spirit. Aboriginal Girls in Sport*. Retrieved on May 16, 2012, from <http://www.caaws.ca/onthemove/e/aboriginal/index.htm>
399. Public Health Agency of Canada. (2010). *The Public Health Agency of Canada's Innovation Strategy - Taking Action to Reduce Inequalities in Canada*. (Ottawa: Public Health Agency of Canada).
400. Public Health Agency of Canada. *Applying SGBA and Equity Analysis to Innovation Strategy Project Proposals*. Unpublished.
401. Legato, M. (1998). Cardiovascular Disease in Women: Gender-Specific Aspects of Hypertension and the Consequences of Treatment. *Journal of Women's Health*, 7(2), 199-209.
402. Heart and Stroke Foundation of Canada. (1997). *Women, Heart Disease and Stroke in Canada: Issues and Options*. (Ottawa: Heart and Stroke Foundation of Canada).
403. Beery, T. A. (1995). Gender bias in the diagnosis and treatment of coronary artery disease. *Heart and Lung*, 24(6), 427-435.
404. Heart and Stroke Foundation of Canada. (2000). *The Changing Face of Heart Disease and Stroke in Canada, 2000*. (Ottawa: Heart and Stroke Foundation of Canada).
405. Heart and Stroke Foundation of Canada. (2012). *Tracking Research - April 2012 Benchmark Results*.
406. Long, T., Taubenheim, A., Wayman, J., Temple, S. et al. (2008). "The Heart Truth:" Using the power of branding and social marketing to increase awareness of heart disease in women. *Social Marketing Quarterly*, 14(3), 3-29.
407. Heart and Stroke Foundation of Ontario. (2010-04). *Women and heart disease: The Heart Truth*. Retrieved on November 15, 2011, from http://www.heartandstroke.on.ca/site/c.pvI3IeNWJwE/b.5889269/k.131D/Women_and_heart_disease_The_Heart_Truth.htm
408. Salmon, A., Poole, N., Morrow, M., Greaves, L. et al. (2006). *Improving Conditions: Integrating Sex and Gender into Federal Mental Health and Addictions Policy*. (Vancouver: The British Columbia Centre of Excellence for Women's Health).
409. The Standing Senate Committee on Social Affairs, Science, & Technology. (2006). *Out of the shadows at last. Transforming Mental Health, Mental Illness and Addiction Services in Canada*.
410. Mental Health Commission of Canada. (n.d.). *Vision and Mission of the MHCC*. Retrieved on June 8, 2012, from <http://www.mentalhealthcommission.ca/English/Pages/TheMHCC.aspx>
411. Mental Health Commission of Canada. (2009). *Toward Recovery and Well-being: A Framework for a Mental Health Strategy for Canada*.
412. Whyte, J. M. & Havelock, J. (2007). *Rural and Remote Women and the Kirby-Keon Report on Mental Health: A Preliminary Gender-Place Analysis*. (Winnipeg: Centres of Excellence for Women's Health).
413. Mental Health Commission of Canada. (2012). *Changing directions, changing lives: The mental health strategy for Canada*. (Calgary: Mental Health Commission of Canada).
414. Pollett, H. (2007). *Mental Health Promotion: A Literature Review*. (Prepared for the Mental Health Promotion Working Group of the Provincial Wellness Advisory Council).

415. Saxena, S., Jané-Llopis, E., & Hosman, C. (2006). Prevention of mental and behavioural disorders: implications for policy and practice. *World Psychiatry*, 5(1), 5-14.
416. Benoit, C. & Shumka, L. (2009). *Gendering the Health Determinants Framework: Why Girls' and Women's Health Matters*. (Vancouver: Women's Health Research Network).
417. Stewart, D., Robertson, E., Dennis, C.-L., Grace, S. L. et al. (2003). *Postpartum depression: A literature review of risk factors and interventions*. (Toronto: University Health Network Women's Health Program).
418. Bowen, A., Baetz, M., Mckee, N., & Klebaum, N. (2008). Optimizing maternal mental health within a primary health care centre: A model program. *Canadian Journal of Community Mental Health*, 27(2), 117-127.
419. Dennis, C.-L. (2005). Psychosocial and psychological interventions for prevention of postnatal depression: systematic review. *British Medical Journal*, 331(15), 1-8.
420. Davey, H., Tough, S., Adair, C., & Benzie, K. (2011). Risk Factors for Sub-Clinical and Major Postpartum Depression Among a Community Cohort of Canadian Women. *Maternal and Child Health Journal*, 15(7), 866-875.
421. Nielsen Forman, D., Videbech, P., Hedegaard, M., Dalby Salvig, J. et al. (2000). Postpartum depression: identification of women at risk. *British Journal of Obstetrics and Gynaecology*, 107(10), 1210-1217.
422. Centre for the Study of Gender Social Inequities and Mental Health. (n.d.). *Reproductive and sexual mental health*. Retrieved on February 24, 2012, from <http://www.socialinequities.ca/research/reproductive-mental-health/>
423. Saskatoon Health Region. (2012). *Healthy and Home Postpartum Support Program*. Retrieved on March 1, 2012, from http://www.saskatoonhealthregion.ca/your_health/ps_healthy_home.htm
424. Avis, K. & Bowen, A. (2004). *Postpartum depression support program evaluation*. (Saskatchewan: Community-University Institute for Social Research).
425. Dennis, C. L., Hodnett, E., Reisman, H. M., Kenton, L. et al. (2009). Effect of peer support on prevention of postnatal depression among high risk women: multisite randomised controlled trial. *British Medical Journal*, 338(a3064).
426. Mother Reach. (n.d.). *Mother Reach London and Middlesex*. Retrieved on March 1, 2012, from <http://www.helpformom.ca/aboutus>
427. Registered Nurses' Association of Ontario. (2005). *Interventions for postpartum depression*. (Toronto: Registered Nurses' Association of Ontario).
428. Madden, J. (2007). *No need to despair: Evaluation of the Middlesex-London Health Unit Postpartum Depression Program*. (London: Middlesex-London Health Unit).
429. Ross, L. E., Campbell, V. L., Dennis, C. L., & Blackmore, E. R. (2006). Demographic characteristics of participants in studies of risk factors, prevention, and treatment of postpartum depression. *Canadian Journal of Psychiatry*, 51(11), 704-710.
430. O'Mahony, J. & Donnelly, T. (2010). Immigrant and refugee women's post-partum depression help-seeking experiences and access to care: a review and analysis of the literature. *Journal of Psychiatric and Mental Health Nursing*, 17(10), 917-928.
431. Stotland, N. L. & Stewart, D. (2001). *Psychological Aspects of Women's Health Care: The Interface between Psychiatry and Obstetrics and Gynecology. Second Edition*. (Washington, D.C.: American Psychiatric Press, Inc.).
432. Centre for the Study of Gender Social Inequities and Mental Health. (n.d.). *Mission and Goals*. Retrieved on March 1, 2012, from <http://www.socialinequities.ca/about/mission-and-goals/>
433. Centre for the Study of Gender Social Inequities and Mental Health. (n.d.). *About*. Retrieved on March 1, 2012, from <http://www.socialinequities.ca/about/>
434. Centre for the Study of Gender Social Inequities and Mental Health. (n.d.). *Priorities*. Retrieved on March 1, 2012, from <http://www.socialinequities.ca/about/priorities/>
435. World Health Organization. (2004). *Gender in Mental Health Research*. (Geneva: World Health Organization).
436. Oliffe, J. L. & Phillips, M. J. (2008). Men, depression and masculinities: A review and recommendations. *Journal of Men's Health*, 5(3), 194-202.

References

437. Coltrane, S. (2000). Research on Household Labor: Modeling and Measuring the Social Embeddedness of Routine Family Work. *Journal of Marriage and Family*, 62(4), 1208-1233.
438. Wee, K. Y., Skouteris, H., Pier, C., Richardson, B. et al. (2011). Correlates of ante- and postnatal depression in fathers: A systematic review. *Journal of Affective Disorders*, 130(3), 358-377.
439. Madsen, S. A. & Juhl, T. (2007). Paternal depression in the postnatal period assessed with traditional and male depression scales. *The Journal of Men's Health & Gender*, 4(1), 26-31.
440. Matthey, S., Barnett, B., Kavanagh, D. J., & Howie, P. (2001). Validation of the Edinburgh Postnatal Depression Scale for men, and comparison of item endorsement with their partners. *Journal of Affective Disorders*, 64(2-3), 175-184.
441. Edmondson, O. J. H., Psychogiou, L., Vlachos, H., Netsi, E. et al. (2010). Depression in fathers in the postnatal period: Assessment of the Edinburgh Postnatal Depression Scale as a screening measure. *Journal of Affective Disorders*, 125(1-3), 365-368.
442. Kim, P. & Swain, J. E. (2007). Sad Dads: Paternal Postpartum Depression. *Psychiatry*, 4(2), 36-47.
443. Zubaran, C., Schumacher, M., Roxo, M. R., & Foresti, K. (2010). Screening tools for postpartum depression: validity and cultural dimensions. *African Journal of Psychiatry*, 13(5), 357-365.
444. Melrose, S. (2010). Paternal postpartum depression: how can nurses begin to help? *Contemporary Nurse*, 34(2), 199-210.
445. American Psychological Association. (2005). *Men: A Different Depression*. Retrieved on May 1, 2012, from <http://www.apa.org/research/action/men.aspx>
446. Bowering, D. (2011). *Where are the Men? Chief Medical Health Officer's Report on the Health and Wellbeing of Men and Boys in Northern BC*. (Prince George: Northern Health).
447. Rutz, W. & Rihmer, Z. (2007). Suicidality in men - practical issues, challenges, solutions. *The Journal of Men's Health & Gender*, 4(4), 393-401.
448. Meyers Norris Penny. (2007). *Literature Review: Men at Risk Suicide Prevention Program Evaluation*. (Prepared for Alberta Mental Health Board). (Edmonton: Alberta Health Services).
449. Canadian Coalition for Seniors' Mental Health. (2006). *The Assessment of Suicide Risk and Prevention of Suicide*. (Toronto: Canadian Coalition for Seniors Mental Health).
450. Canadian Coalition for Seniors' Mental Health. (2010-10-22). *Tools for Health Care Providers: Late Life Suicide Prevention Toolkit*. Retrieved on June 18, 2012, from <http://www.ccsmh.ca/en/projects/suicideAssessment.cfm>
451. Taylor, C., Peter, T., McMinn, T. L., Elliot, T. et al. (2011). *Every class in every school: The first national climate survey on homophobia, biphobia, and transphobia in Canadian schools. Final report*. (Toronto: Egale Canada Human Rights Trust).
452. Suicide Prevention Resource Center. (2008). *Suicide risk and prevention for lesbian, gay, bisexual, and transgender youth*. (Newton: Education Development Center, Inc.).
453. Vogel, L. (2011). Canada suicide prevention efforts lagging, experts say. *Canadian Medical Association Journal*, 183(1), E27-E28.
454. Government of New Brunswick. (2007). *Connecting to life. Provincial Suicide Prevention Program*. (New Brunswick Health).
455. Australian Government. (2008). *A framework for prevention of suicide in Australia*. (Barton: Commonwealth of Australia).
456. Living is for Everyone. (2007). *Fact Sheet 17: Suicide and men* [Brochure].
457. Health Canada. (2011). *A Statistical Profile on the Health of First Nations in Canada: Vital Statistics for Atlantic and Western Canada, 2001/2002*. (Ottawa: Health Canada).
458. Kirmayer, L. J., Brass, G. M., Holton, T., Paul, K. et al. (2007). *Suicide Among Aboriginal People in Canada*. (Ottawa: The Aboriginal Healing Foundation).
459. Canadian Population Health Initiative. (2006). *How Healthy Are Rural Canadians? An Assessment of Their Health Status and Health Determinants*. (Ottawa: Canadian Institute for Health Information).
460. Olson, R. (2011). *Men and Suicide*. (Centre for Suicide Prevention).

461. Mann, J. J., Apter, A., Bertolote, J., Beautrais, A. et al. (2005). Suicide Prevention Strategies: A Systematic Review. *The Journal of the American Medical Association*, 294(16), 2064-2074.
462. Morgan, M., Hayes, R., Williamson, M., & Ford, C. (2007). Men's Sheds: A Community Approach to Promoting Mental Health and Well-being. *International Journal of Mental Health Promotion*, 9(3), 48-52.
463. The Shed Online. (2010). *What is the Shed Online?* Retrieved on February 9, 2012, from <http://www.theshedonline.org.au/about>
464. Ballinger, M. L., Talbot, L. A., & Verrinder, G. K. (2009). More than a place to do woodwork: a case study of a community-based Men's Shed. *Journal of Men's Health*, 6(1), 20-27.
465. The Shed Online. (2010). *Discussions*. Retrieved on February 10, 2012, from <http://www.theshedonline.org.au/discussions>
466. Australian Men's Sheds Association. (2011). *What is AMSA: Background*. Retrieved on June 20, 2012, from <http://www.mensshed.org/who-is-amsa/.aspx>
467. Golding, B., Brown, M., Foley, A., Harvey, J. et al. (2007). *Men's sheds in Australia: Learning through community contexts*. (Adelaide: NCVER).
468. Misan, G. & Sergeant, P. (2009). Men's sheds - a strategy to improve men's health. In G. Gregory (Ed.), *National Rural Health Conference*, National Rural Health Alliance, Cairns, AU.
469. Reynolds, K. A. (2011). *Running Head: Older Male Adults' Involvement in Men's Sheds. The Process of Involvement of Older Male Adults in Men's Sheds Community Programs*. Master of Arts, University of Manitoba, Winnipeg.
470. de Peuter, J. (2007). *Male Suicide and Help-seeking. Review of the Literature*. (Calgary: Calgary and Area Suicide Prevention Council).
471. Martin, N. & Johnston, V. (2007). *A time for action: Tackling stigma and discrimination*. (Report to the Mental Health Commission of Canada).
472. Mental Health Commission of Canada. (n.d.). *Stigma: The Facts* [Brochure].
473. Mental Health Commission of Canada. (n.d.). *Mental Illness and Stigma*. Retrieved on May 23, 2012, from <http://www.mentalhealthcommission.ca/English/Pages/OpeningMinds.aspx>
474. Link, B. G. & Phelan, J. C. (2001). Conceptualizing Stigma. *Annual Review of Sociology*, 27, 363-385.
475. Scheffer, R. (2003). *Addressing Stigma: Increasing Public Understanding of Mental Illness*. (Centre for Addiction and Mental Health).
476. Roots of Empathy. (n.d.). *Roots of Empathy - Report on Research 2009*.
477. Roots of Empathy. (n.d.). *Roots of Empathy: About Our Program*. Retrieved on May 2, 2012, from <http://www.rootsofempathy.org/ProgDesc.html>
478. Wirth, J. & Bodenhausen, G. V. (2009). The role of gender in mental-illness stigma: A national experiment. *Psychological Science*, 20(2), 169-173.
479. Ogrodniczuk, J. S. & Oliffe, J. L. (2011). Men and depression. *Canadian Family Physician*, 57(2), 153-155.
480. Wang, J., Fick, G., Adair, C., & Lai, D. (2007). Gender specific correlates of stigma toward depression in a Canadian general population sample. *Journal of Affective Disorders*, 416(1-3), 91-97.
481. The Standing Senate Committee on Social Affairs, Science, & Technology. (2004). *Mental health, mental illness and addiction: Overview of policies and programs in Canada*. (Ottawa: Senate of Canada).
482. Northern Health. (2011). *Men's Health Matters Because Men Matter. Community Consultation on Men's Health: What we heard*. (Prince George: Northern Health Region of British Columbia).
483. Centre for Advancement of Men's Health. (2010). *The History of the Men's Health Night in Australia: The Male Health Intervention. Does the 'Bloke's Night Out' create a behaviour change in men's health outcomes?*
484. Denner, B. & Gibson, M. (1999). MAN Model: Pathway to Men's Health. *5th National Rural Health Conference*, Adelaide, AU.
485. Denner, B. (2008). *Comparing the Health of Rural Men in Australia and Canada*.

References

486. Denner, B. (n.d.). *Why we need National Male Health Policy*. (Castlemaine: Centre for Advancement of Men's Health, Men's Awareness Network and Hepburn Health Service Daylesford).
487. Partnership for Workplace Mental Health. (n.d.). *A Mentally Healthy Workforce - It's Good for Business*.
488. Mental Health Commission of Canada. (2011-06-16). *Psychological Health and Safety Standard for Canadian Workplace - Standard supports Canadian employers and employees in improving work environments*. [Press Release]. Retrieved on May 2, 2012, from http://www.mentalhealthcommission.ca/SiteCollectionDocuments/Workforce_2011/MHCC_ENG_PR_FINAL.pdf
489. Mental Health Commission of Canada. (2011-11-07). *National Standard of Canada for Psychological Health and Safety in the Workplace*. Retrieved on May 2, 2012, from http://www.mentalhealthcommission.ca/SiteCollectionDocuments/Workforce_2011/mhcc_eng_backgrounder.pdf
490. Corbière, M., Shen, J., Rouleau, M., & Dewa, C. S. (2009). A systematic review of preventive interventions regarding mental health issues in organizations. *Work*, 33(1), 81-116.
491. Modgill, G. & Patten, S. (2012). *British Columbia's Interior Health Authority's usage of the Ontario Central LHIN Anti-Stigma training program: An independent evaluation by Opening Minds*. (Mental Health Commission of Canada).
492. Mental Health Commission of Canada. (2012). *MHCC's Senior Consultant on Anti-stigma initiative to advance research at Queen's University*. Retrieved on July 18, 2012, from <http://www.togetheragainststigma2012.ca/index.php/omas/tas12/announcement/view/3>
493. Mental Health Commission of Canada. (2012-02-28). *World comes to Canada to fight stigma and surrounding mental illness: International conference to be held in Ottawa*. Retrieved on June 21, 2012, from http://www.mentalhealthcommission.ca/SiteCollectionDocuments/News/OM_Stigma_news_%20FINAL_ENG.pdf
494. Mental Health Commission of Canada. (Personal Communications on 5th International Stigma Conference. Together Against Stigma: Changing how we see mental illness, July 18, 2012).
495. World Psychiatric Association. (2012-06-19). *Stigma and Mental Illness*. Retrieved on June 21, 2012, from http://www.wpanet.org/detail.php?section_id=11&content_id=555
496. Mood Disorders Society of Canada. (2012-03-05). *New mental health anti-stigma training for health care professionals*. Retrieved on June 21, 2012, from http://www.mentalhealthcommission.ca/SiteCollectionDocuments/News/Anti_Stigma_CME_Press_Release_ENG.pdf
497. Health Canada. (2006-02-02). *Sexual Health and Promotion*. Retrieved on December 15, 2011, from <http://www.hc-sc.gc.ca/hl-vs/sex/index-eng.php>
498. Wakley, G. (2011). Helping parents with sex education. *Journal of Family Health Care*, 21(2), 30-33.
499. Hansen, L., Mann, J., McMahon, S., & Wong, T. (2004). Sexual Health. *BMC Women's Health*, 4(Suppl 1), S24.
500. Adler, N., Stewart, J., Cohen, S., Cullen, M. et al. (2007). *Reaching for a Healthier Life. Facts on Socioeconomic Status and Health in the US*. (San Francisco: The John D. and Catherine T. MacArthur Foundation Research Network on Socioeconomic Status and Health).
501. Glasier, A., Gülmezoglu, A. M., Schmid, G. P., Garcia Moreno, C. et al. (2006). Sexual and reproductive health: a matter of life and death. *The Lancet*, 368(9547), 1595-1607.
502. Brooks, R. B. (2005). The Power of Parenting. In *Handbook of resilience in children*, (pp. 297-314). (New York: Kluwer).
503. Saewyc, E., Wang, N., Chittenden, M., Murphy, A. et al. (2006). *Building Resilience in Vulnerable Youth*. (Vancouver: The McCreary Centre Society).
504. Carbonell, D. M., Reinherz, H. Z., Giaconia, R. M., Stashwick, C. K. et al. (2002). Adolescent protective factors promoting resilience in young adults at risk for depression. *Child and Adolescent Social Work Journal*, 19(5), 393-412.
505. Gouvernement du Québec. (2011-05-25). *Projet relations amoureuses des jeunes*. Retrieved on May 3, 2011, from http://www.dsp.santemontreal.qc.ca/dossiers_thematiques/jeunes/thematiques/projet_relations_amoureuses_des_jeunes/strategies.html
506. Flores, J., Hamel, C., Lavoie, F., & Rondeau, L. (2005). *Promoting Informed Action. Subject: Youth dating relationships*. (Centre québécois de ressources en promotion de la sécurité et en prévention de la criminalité).

507. Mahony, T. H. (2010). Police-reported dating violence in Canada, 2008. *Juristat*, 30(2).
508. Wolfe, D. A. & Wekerle, C. (2012). *Youth Relationship Project. A Violence Prevention Program for At-Risk Adolescents*. Retrieved on May 30, 2012, from http://www.eurowrc.org/05.education/education_en/yrp_youth_manual/01.yrp.htm
509. RESOLVE Alberta. (n.d.). *RESOLVE*. Retrieved on December 15, 2011, from <http://www.ucalgary.ca/resolve/index.shtml>
510. Wolfe, D. A., Wekerle, C., Scott, K., & Straatman, A.-L. (2003). Dating violence prevention with at-risk youth: a controlled outcome evaluation. *Journal of Consulting and Clinical Psychology*, 71(2), 279-291.
511. *What are the STOP and PASSAJ Programs All About?* (n.d.). Retrieved on July 5, 2012, from <http://viraj.psy.ulaval.ca/english/HTML/frmAnimateur.html>
512. Lavoie, F., Vézina, L., Gosselin, A., & Robitaille, L. (1995). *STOP! Dating Violence among Adolescents. Workshop for School Staff*. (Government of Quebec).
513. Lavoie, F., Vézina, L., Gosselin, A., & Robitaille, L. (1995). *STOP! Dating Violence among Adolescents. Classroom Activities*. (Government of Quebec).
514. *Stop - Dating Violence among Adolescents*. (2010-06-27). Retrieved on April 12, 2012, from http://www.eurowrc.org/05.education/education_en/27.edu_en.htm
515. Roberge, M.-C. & Choinière, C. (2009). *Analyse des interventions de promotion de la santé et de prévention en contexte scolaire québécois : cohérence avec les meilleures pratiques selon l'approche École en santé*. (Montreal: Institut national de santé publique du Québec).
516. *Why should I choose the STOP and PASSAJ Programs?* (n.d.). Retrieved on April 12, 2012, from <http://viraj.psy.ulaval.ca/english/HTML/frmPlanificateurs.html>
517. Government of Newfoundland and Labrador. (2012-06-26). *Violence Prevention Initiative*. Retrieved on April 23, 2012, from <http://www.gov.nl.ca/vpi/>
518. Government of Newfoundland and Labrador. (2012). *Taking Action Against Violence: 2006-2012. The Violence Prevention Initiative*.
519. Government of Newfoundland and Labrador. (n.d.). *OutrageNL.ca*. Retrieved on April 23, 2012, from <http://outragenl.ca/spots.html>
520. Government of Newfoundland and Labrador. (n.d.). *How to Out Rage: Don't stand by, Reach Out, Take Action*. Retrieved on May 24, 2012, from <http://outragenl.ca/outrage.html>
521. Minerson, T. H., Carolo, H., Dinner, T., & Jones, C. (2011). *Issue Brief: Engaging Men and Boys to Reduce and Prevent Gender-Based Violence*. (Prepared for Status of Women and the Public Health Agency of Canada).
522. Sen, G., Östlin, P., & George, A. (2007). *Unequal, Unfair, Ineffective and Inefficient Gender Inequity in Health: Why it exists and how we can change it*.
523. The Fourth R. (n.d.). *Strategies for Healthy Youth Relationships*. Retrieved on July 25, 2011, from <http://www.youthrelationships.org/>
524. Johnson, H. (2007). Preventing Violence Against Women: Progress and Challenges. *IPC Review*, 1, 69-88.
525. Holmes, C. (2011). Troubling Normalcy: Examining 'Healthy Relationships' Discourses in Lesbian Domestic Violence Prevention. In J. L. Ristock (Ed.), *Intimate Partner Violence in LGBTQ Lives*, (pp. 209-231). (New York: Routledge).
526. RESOLVE Alberta. (2002). *School-based violence prevention programs: A resource manual*. Retrieved on December 15, 2011, from <http://www.ucalgary.ca/resolve/violenceprevention/English/reviewprog/youthdprogs.htm#prog1>
527. Men for Change. (1994). *Healthy Relationships. Violence-Prevention Curriculum*. (Halifax: Men for Change).
528. Josephson, W. L. & Proulx, J. (1999). *Healthy Relationships Project: Preliminary Results for year three*. (Social Sciences Research Council).
529. Men for Change. (n.d.). *Healthy Relationships: Curriculum in Action*. Retrieved on December 15, 2011, from <http://www.m4c.ns.ca/action.html>
530. Brennan, S. (2011). *Violent victimization of Aboriginal women in the Canadian provinces, 2009*. (Ottawa: Statistics Canada).

References

531. National Clearing House on Family Violence. (2008). *Aboriginal Women and Family Violence*. (Ottawa: Public Health Agency of Canada).
532. Aboriginal Healing Foundation. (2003). *Aboriginal Domestic Violence in Canada*. (Ottawa: Aboriginal Healing Foundation).
533. McMillan, L. J. (2011). *Addressing Mi'kmaq Family Violence. Family Violence and Aboriginal Communities: Building Our Knowledge and Direction Through Community Based Research and Community Forums*.
534. Statistics Canada. (2011). *Family Violence in Canada: A Statistical Profile*. (Ottawa: Statistics Canada).
535. Public Health Agency of Canada. (2008-11-30). *Same-Sex Partner Violence*. Retrieved on February 29, 2012, from <http://www.phac-aspc.gc.ca/ncfv-cnivf/EB/eb-Jul-2008-eng.php>
536. Intimate Partner Abuse and Relationship Violence Working Group. (n.d.). *Intimate Partner Abuse and Relationship Violence*.
537. R.A.Malatest & Associates Ltd. (2010). *Non-Violence: A Strength Based Community Inquiry*. (Prepared for Government of the Northwest Territories, Northwest Territories Justice).
538. Northwest Territories Health and Social Services. (2009). *NWT Family Violence Action Plan: Phase II (2007-2012)*.
539. American Psychological Association. (2007). *Report of the APA Task Force on the Sexualization of Girls*. (Washington, D.C.: American Psychological Association).
540. Graff, K., Murnen, S. K., & Smolak, L. (2012). Too Sexualized to be Taken Seriously? Perceptions of a Girl in Childlike vs. Sexualizing Clothing. *Sex Roles*, 66(11-12), 764-775.
541. Goodin, S. M., Van Denburg, A., Murnen, S. K., & Smolak, L. (2011). "Putting on" Sexiness: A Content Analysis of the Presence of Sexualizing Characteristics in Girls' Clothing. *Sex Roles*, 65(1-2), 1-12.
542. Hatton, E. & Trautner, M. N. (2011). Equal Opportunity Objectification? The Sexualization of Men and Women on the Cover of Rolling Stone. *Sexuality & Culture*, 15(3), 256-278.
543. Rush, E. & La Nauze, A. (2006). *Letting Children be Children: Stopping the sexualisation of children in Australia (Discussion Paper Number 93)*. (The Australia Institute).
544. Schooler, D. & Ward, M. (2006). Average Joes: Men's Relationships with Media, Real Bodies, and Sexuality. *Psychology of Men and Masculinity*, 7(1), 27-41.
545. Calogero, R. M., Davis, W. N., & Thompson, J. K. (2005). The Role of Self-Objectification in the Experience of Women with Eating Disorders. *Sex Roles*, 52(1-2), 43-50.
546. *H.R. 2513--112th Congress: Healthy Media for Youth Act*. (2011). Retrieved on July 11, 2012, from <http://thomas.loc.gov/cgi-bin/bdquery/z?d112:H.R.2513>:
547. *Healthy Media for Youth Act*, H.R. 2513, 112th Congress, 2011.
548. Canadian Broadcast Standards Council. (2002). *CAB Code of Ethics*. Retrieved on April 23, 2012, from <http://www.cbcs.ca/english/codes/cabethics.php#Clause3>
549. Statham, J., Mooney, A., & Phoenix, A. (2011). *Summary of regulatory frameworks in four selected countries, for the Bailey Review of commercialisation and sexualisation of childhood*. (Childhood Wellbeing Research Centre).
550. Bailey, R. (2011). *Letting Children be Children. Report of an Independent Review of the Commercialisation and Sexualisation of Childhood*. (United Kingdom: The Stationary Office Ltd.).
551. Gouvernement du Québec: *L.R.Q., Chapitre P-40.1; Loi sur la protection du consommateur, 2011*.
552. Shoveller, J. A. & Johnson, J. L. (2006). Risky groups, risky behaviour, and risky persons: Dominating discourses on youth sexual health. *Critical Public Health*, 16(1), 47-60.
553. Kirby, D. (2007). *Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Diseases*. (The National Campaign to Prevent Teen and Unplanned Pregnancy).
554. Kohler, P. K., Manhart, L. E., & Lafferty, W. E. (2008). Abstinence-Only and Comprehensive Sex Education and the Initiation of Sexual Activity and Teen Pregnancy. *Journal of Adolescent Health*, 42(4), 344-351.

555. Bermúdez Parsai, M., González Castro, F., Marsiglia, F. F., Harthun, M. L. et al. (2011). Using Community Based Participatory Research to Create a Culturally Grounded Intervention for Parents and Youth to Prevent Risky Behaviors. *Prevention Science*, 12(1), 34-47.
556. Kalmuss, D., Davidson, A., Cohall, A., Laraque, D. et al. (2003). Preventing Sexual Risk Behaviors and Pregnancy Among Teenagers: Linking Research and Programs. *Perspectives on Sexual and Reproductive Health*, 35(2), 87-93.
557. UNAIDS. (1997). *Impact of HIV and sexual health education on the sexual behaviour of young people: a review update*. (Geneva: Joint United Nations Programme on HIV/AIDS).
558. Best Start & Sex Information and Education Council of Canada. (2012). *Update Report on Teen Pregnancy Prevention. A summary of statistics, context and effective strategies related to the prevention of teen pregnancy, including examples of successful or promising initiatives*. (Toronto: Best: Ontario's Maternal, Newborn and Early Childhood Development Resource Centre).
559. Public Health Agency of Canada. (2008). *Canadian Guidelines for Sexual Health Education*.
560. Jewell, D., Tacchi, J., & Donovan, J. (2000). Teenage pregnancy: whose problem is it? *Family Practice*, 17(6), 522-528.
561. Vogel, L. (2010). Canadian baby boomers shirk safe sex. *Canadian Medical Association Journal*, 182(18), E827-E828.
562. Morton, C. R., Kim, H., & Treise, D. (2011). Safe Sex After 50 and Mature Women's Beliefs of Sexual Health. *The Journal of Consumer Affairs*, 45(3), 372-390.
563. The Foundation Lab. (n.d.). *Reflections on Seniors a GOGO (Growing Older, Getting it On)*. Retrieved on March 1, 2012, from http://www.thefoundationlab.com/pb/wp_7e8cb383/wp_7e8cb383.html
564. Levy, B. R., Ding, L., Lakra, D., Kostea, J. et al. (2007). Older Persons' Exclusion from sexually transmitted disease risk-reduction clinical trials. *Sexually Transmitted Diseases*, 34(8), 541-544.
565. The Foundation Lab. (n.d.). *Seniors a GOGO*. Retrieved on March 1, 2012, from http://www.thefoundationlab.com/pb/wp_9179ae1a/wp_9179ae1a.html
566. Cheng, H., Kotler, P., & Lee, N. R. (2011). Social Marketing for Public Health: An Introduction. In H. Cheng, P. Kotler, & N. R. Lee (Eds.), *Social Marketing for Public Health: Global trends and success stories*, (pp. 1-30). (United States of America: Jones and Bartlett Publishers, LLC).
567. Wark, D. (2011). Seniors a GOGO - A theatrical journey. *Creative Expressions*, 1(1), 1-4.
568. Seniors Action Group. (n.d.). *Seniors a GOGO*. Retrieved on March 1, 2012, from http://seniorsactiongroup.com/pb/wp_c3d823c5/wp_c3d823c5.html
569. Calgary Sexual Health Centre. (n.d.). *Sexuality and Aging*. Retrieved on March 1, 2012, from http://www.calgarysexualhealth.ca/aging_intro.html
570. Seniors a GOGO. (2009-05-31). *An Unequal Partner* [Video file]. Retrieved from <http://www.youtube.com/watch?v=3bv8wX2JXt8&feature=channel>
571. Seniors a GOGO. (2009-05-31). *My Visit to the Sex Shop* [Video file]. Retrieved from http://www.youtube.com/watch?v=-NTTIGIFQKs&feature=channel_page
572. Seniors a GOGO. (2009-05-31). *Born to Be Wild* [Video file]. Retrieved from <http://www.youtube.com/watch?v=9Eu4ivjp0E&feature=related>
573. Seniors a GOGO. (2009-05-31). *Waking Up* [Video file]. Retrieved from <http://www.youtube.com/watch?v=gMQFLJ2ix2w>
574. Moynihan, R. (2003). The making of a disease: female sexual dysfunction. *British Medical Journal*, 326(7379), 45-47.
575. McCall, D. & McKay, A. (2004). School-Based and School-Linked Sexual Health Education and Promotion in Canada. *Journal of Obstetrics and Gynaecologists of Canada*, 26(6), 596-600.
576. United Nations Educational, Scientific, & Cultural Organization. (2009). *International Technical Guidance on Sexuality Education: An evidence-informed approach for schools, teachers and health educators, Volume 1: The rationale for sexuality education*. (Paris: UNESCO, Section on HIV and AIDS).

References

577. United Nations Educational, Scientific, & Cultural Organization. (2009). *International Technical Guidance on Sexuality Education: An evidence-informed approach for schools, teachers and health educators, Volume 2: Topics and learning objectives*. (Paris: UNESCO, Section on HIV and AIDS).
578. Sex Information and Education Council of Canada. (2009). Sexual health education in the schools: Questions & answers (3rd edition). *The Canadian Journal of Human Sexuality*, 18(1-2), 47-60.
579. Frontline Partners with Youth Network. (2010-03-31). *The Toronto Teen Survey - What did LGBTQ and Questioning Youth Have To Say?* Retrieved on June 9, 2011, from <http://www.fpyn.ca/content/resource/toronto-teen-survey-what-did-lgbtq-and-questioning-youth-have-say>
580. Tolman, D. L. & McClelland, S. I. (2011). Normative Sexuality Development in Adolescence: A Decade in Review, 2000-2009. *Journal of Research on Adolescence*, 21(1), 242-255.
581. Saewyc, E. M. (2011). Research on Adolescent Sexual Orientation: Development, Health Disparities, Stigma, and Resilience. *Journal of Research on Adolescence*, 21(1), 256-272.
582. Balsam, K. (2003). Trauma, stress, and resilience among sexual minority women: Rising like the phoenix. *Journal of Lesbian Studies*, 7(4), 1-8.
583. Savin-Williams, R. C. (2008). Then and now: Recruitment, definition, diversity, and positive attributes of same-sex populations. *Developmental Psychology*, 44(1), 135-138.
584. Brill, S. & Pepper, R. (2008). *The Transgender Child: A Handbook for Families and Professionals*. (San Francisco: Cleis Press).
585. Savin-Williams, R. C. (2005). *The new gay teenager*. (Cambridge: Harvard University Press).
586. Australian Guidance and Counselling Association. (n.d.). *Pride and Prejudice*. Retrieved on March 1, 2012, from http://mhws.agca.com.au/mmppi_detail.php?id=95
587. Pride and Prejudice. (n.d.). *Pride and Prejudice*. Retrieved on March 1, 2012, from <http://www.prideandprejudice.com.au/index2.htm>
588. The University of British Columbia. (n.d.). *Our vision, mission, and values*. Retrieved on April 10, 2012, from <http://campout.ubc.ca/about-us/our-vision-mission-and-values/>
589. Aggleton, P., Bell, S., Shoveller, J., & Shannon, K. Defining Structural Factors: Agency and Structure in HIV Prevention. In M. Sommer & R. Parker (Eds.), *Structural Approaches to Public Health*, (To be published February 15, 2013).
590. The University of British Columbia. (n.d.). *Camp Registration*. Retrieved on June 22, 2012, from <http://campout.ubc.ca/campers/>
591. The University of British Columbia. (n.d.). *Programming at CampOUT!* Retrieved on June 22, 2012, from <http://campout.ubc.ca/about-us/programming-at-campout/>
592. The University of British Columbia. (n.d.). *Leadership Resources*. Retrieved on June 22, 2012, from <http://campout.ubc.ca/volunteering/leadership-resources/>
593. Sales, J. M., Milhausen, R. R., & DiClemente, R. J. (2006). A decade in review: building on the experiences of past adolescent STI/HIV interventions to optimise future prevention efforts. *Sexually Transmitted Infections*, 82(6), 431-436.
594. Sales, J. M. & DiClemente, R. J. (2010). *Adolescent STI/HIV Prevention Programs: What Works for Teens?* (Ithaca: Act for Youth Center of Excellence).
595. Laub, C., Somera, D. M., Gowen, K., & Diaz, R. M. (1999). Targeting "Risky" Gender Ideologies: Constructing a Community-Driven, Theory-Based HIV Prevention Intervention for Youth. *Health Education and Behavior*, 26(2), 185-199.
596. Marston, C. & King, E. (2006). Factors that shape young people's sexual behaviour: a systematic review. *The Lancet*, 368(9547), 1581-1586.
597. Zierler, S. & Krieger, N. (1997). Reframing Women's Risk: Social Inequalities and HIV Infection. *Annual Review of Public Health*, 18, 401-436.
598. Gahagan, J. & Ricci, C. (2012). *HIV/AIDS Prevention for Women in Canada: A Meta-Ethnographic Synthesis*. (Halifax: Dalhousie University).

References

599. Meckler, G. D., Elliot, M. N., Kanouse, D. E., Beals, K. P. et al. (2006). Nondisclosure of Sexual Orientation to a Physician Among a Sample of Gay, Lesbian, and Bisexual Youth. *Archives of Pediatrics & Adolescent Medicine*, 160(12), 1248-1254.
600. Dardick, L. & Grady, K. E. (1980). Openness Between Gay Persons and Health Professionals. *Annals of Internal Medicine*, 93(1), 115-119.
601. Kass, N. E., Faden, R. R., Fox, R., & Dudley, J. (1992). Homosexual and Bisexual Men's Perceptions of Discrimination in Health Services. *American Journal of Public Health*, 82(9), 1277-1279.
602. Smith, E. M., Johnson, S. R., & Guenther, S. M. (1985). Health Care Attitudes and Experiences during Gynecologic Care among Lesbians and Bisexuals. *American Journal of Public Health*, 75(9), 1085-1087.
603. Dysart-Gale, D. (2010). Social Justice and Social Determinants of Health: Lesbian, Gay, Bisexual, Transgendered, Intersexed, and Queer Youth in Canada. *Journal of Child and Adolescent Psychiatric Nursing*, 23(1), 23-28.
604. Hatzenbuehler, M. L. (2011). The Social Environment and Suicide Attempts in Lesbian, Gay, and Bisexual Youth. *Pediatrics*, 127(5), 896-903.
605. Hirsch, A. J., Carlson, J. S., & Cowl, A. L. (2010). Promoting positive development outcomes in sexual minority youth through best practices in clinic-school consultation. *Journal of Child and Adolescent Psychiatric Nursing*, 23(1), 17-22.
606. Weber, S. & Poster, E. C. (2010). Guest editorial: Special issue on mental health nursing care of LGBT adolescents and young adults. *Journal of Child and Adolescent Psychiatric Nursing*, 23(1), 1-2.
607. Immigrant Women's Health Centre. (2012). *Annual Report 2009*. (Toronto: Immigrant Women's Health Centre).
608. Immigrant Women's Health Centre. (2012). *About*. Retrieved on July 16, 2012, from http://immigranthealth.info/?page_id=62
609. Immigrant Women's Health Centre. (2012). *Mobile Health Clinic*. Retrieved on July 16, 2012, from http://immigranthealth.info/?page_id=12
610. Guruge, S., Hunter, J., Barker, K., McNally, M. J. et al. (2010). Immigrant women's experiences of receiving care in a mobile health clinic. *Journal of Advanced Nursing*, 66(2), 350-359.
611. Ministry of Health and Long-Term Care. (2009). *Sexually Transmitted Infections Case Management and Contact Tracing Best Practice Recommendations*. (Toronto: Ontario Ministry of Health and Long-Term Care).
612. BC Online Sexual Health Services. (n.d.). *What is the BC Online Sexual Health Services?* Retrieved on April 30, 2012, from <http://bclovebytes.wordpress.com/about/>
613. Family Planning Association. (n.d.). *The Middle-age Spread (STIs in the over 50s) – Sexual Health Week 2010*. Retrieved on January 26, 2012, from <http://www.fpa.org.uk/campaignsandadvocacy/sexualhealthweek/stisandsafersexover50>
614. Family Planning Association. (2010). *People over 50. Relationships and sexual health*.
615. Statistics Canada. (2011-07-04). *Industry - North American Industry Classification System 2002, Occupation - National Occupational Classification for Statistics 2006, Work Activity in 2005 and Sex for the Employed Labour Force 15 Years and Over Having a Usual Place of Work or Working at Home of Canada, Provinces, Territories, Census Divisions and Census Subdivisions of Work, 2006 Census [Data File]*. Retrieved on May 5, 2012, from <http://www12.statcan.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=90652&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=74&VID=0&VNAMEE=&VNAMEF=>
616. Messing, K., Östlin, P., & World Health Organization. (2006). *Gender Equality, Work and Health: A Review of the Evidence*. (Geneva: World Health Organization).
617. Messing, K. (1998). *One-eyed science: Occupational health and women workers*. (Philadelphia: Temple University Press).
618. Messing, K., Punnett, L., Bond, M., Alexanderson, K. et al. (2003). Be the Fairest of Them All: Challenges and Recommendations for the Treatment of Gender in Occupational Health Research. *American Journal of Industrial Medicine*, 43(6), 618-629.
619. Canadian Women's Health Network. (2005). *Preventing Work-related Injuries: Health Hazards*. Retrieved on February 3, 2012, from <http://www.cwhn.ca/node/40807>
620. Breslin, F. C., Polzer, J., MacEachen, E., Morrongiello, B. et al. (2007). Workplace injury or "part of the job"? Towards a gendered understanding of injuries and complaints among young workers. *Social Science & Medicine*, 64(4), 782-793.

References

621. Street, S. (2009). Gender-Based Analysis: A Tool for Evidence-based Research in Occupational Therapy? Focusing on Workplace Health. *2009 CAOT Conference*, Ottawa, CA.
622. Institute for Work & Health. (n.d.). *Vulnerable workers more likely to receive no income for work-related absence*. Retrieved on February 3, 2012, from <http://www.iwh.on.ca/highlights/vulnerable-workers-more-likely-to-receive-no-income-for-work-related-absence>
623. Heilman, M. E. & Chen, J. J. (2005). Same Behaviour, Different Consequences: Reactions to Men's and Women's Altruistic Citizenship Behavior. *Journal of Applied Psychology*, 90(3), 431-441.
624. Messing, K. (1998). Hospital trash: Cleaners speak of their role in disease prevention. *Medical Anthropology Quarterly*, 12(2), 168-187.
625. Messing, K. & Elabidi, D. (2003). Desegregation and occupational health: how male and female hospital attendants collaborate on work tasks requiring physical effort. *Policy and Practice in Health and Safety*, 1(21), 83-103.
626. Shields, M. & Wilkins, K. (2009). Factors related to on-the-job abuse of nurses by patients. *Health Reports*, 20(2), 7-20.
627. Meadus, R. J. & Creina Twomey, J. (2011). Men student nurses: The nursing education experience. *Nursing Forum*, 46(4), 269-279.
628. Shields, M. & Wilkins, K. (2006). *Findings from the 2005 National Survey of the Work and Health of Nurses*. (Ottawa: Statistics Canada).
629. Villeneuve, M. & MacDonald, J. (2006). *Toward 2020: Visions for Nursing*. (Ottawa: Canadian Nurses Association).
630. Special Senate Committee on Aging. (2009). *Canada's Aging Population: Seizing the Opportunity*. (Ottawa: The Senate of Canada).
631. Health Canada. (2004). *Family/Informal Caregivers in Canada Caring for Someone with a Mental Illness*. (Ottawa: Health Canada).
632. Cranswick, K. & Dosman, D. (2008). Eldercare: What we know today. *Canadian Social Trends*, Winter 2008(86), 48-57.
633. Kroska, A. (2003). Investigating Gender Differences in the Meaning of Household Chores and Child Care. *Journal of Marriage and Family*, 65(2), 456-473.
634. Morris, M. (2001). *Gender-sensitive home and community care and caregiving research: A synthesis paper*.
635. McGuire, L. C., Anderson, L. A., Talley, R. C., & Crews, J. E. (2007). Supportive Care Needs of Americans: A Major Issue for Women as Both Recipients and Providers. *Journal of Women's Health*, 16(6), 784-790.
636. Women's Health Matters. (2012). *Sandwich generation caring for elders: practical supports through life's transitions*. Retrieved on February 16, 2012, from <http://www.womenshealthmatters.ca/health-resources/health-information/resources/feature-article/sandwich-generation-caring-for-elders-practical-supports-through-life%E2%80%99s-transitions-%28womens-health-matters-article%29>
637. Lilly, M. B., Laporte, A., & Coyte, P. C. (2010). Do they care too much to work? The influence of caregiving intensity on the labour force participation of unpaid caregivers in Canada. *Journal of Health Economics*, 29(6), 895-903.
638. Sipes, C. S. (2002). The experiences and relationships of gay male caregivers who provide care for their partners with AIDS. In B. J. Kramer & E. H. Thompson (Eds.), *Men as Caregivers: Theory, research and service implications*, (pp. 151-190). (New York: Springer Publishing Company, Inc.).
639. Keefe, J. & Rajnovich, B. (2007). To Pay or Not to Pay: Examining Underlying Principles in the Debate on Financial Support for Family Caregivers. *Canadian Journal on Aging*, 26(Supplement 1), 77-89.
640. Service Canada. (2010-03). *Employment Insurance (EI) Compassionate Care Benefits* [Brochure].
641. Technical Advisory Committee on Tax Measures for Persons with Disabilities. (n.d.). *Disability-Related Federal Personal Income Tax Measures- Infirm Dependant Credit*. Retrieved on May 18, 2010, from <http://www.disabilitytax.ca/dtm/idc-e.html>
642. Canada Revenue Agency. (2012-01-04). *Line 315 - Caregiver amount*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/315/menu-eng.html>
643. Canada Revenue Agency. (2012-01-04). *Line 305 - Amount for an eligible dependant*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/305/menu-eng.html>
644. Canada Revenue Agency. (2012-01-04). *Line 306 - Amount for infirm dependants age 18 or older*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/306/menu-eng.html>

645. Canada Revenue Agency. (2012-06-18). *Line 318 - Disability amount transferred from a dependant*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/318/menu-eng.html>
646. Canada Revenue Agency. (2012-04-04). *Line 326 - Amounts transferred from your spouse or common-law partner*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/326/menu-eng.html>
647. Canada Revenue Agency. (2012-01-04). *Line 330 - Medical expenses for self, spouse or common-law partner, and your dependent children born in 1994 or later*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/330/menu-eng.html>
648. Canada Revenue Agency. (2012-01-04). *Line 331 - Allowable amount of medical expenses for other dependants*. Retrieved on June 29, 2012, from <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/331-eng.html>
649. Duxbury, L., Higgins, C., & Schroeder, B. (2009). *Balancing paid work and caregiving responsibilities: A closer look at family caregivers in Canada*. (Ottawa: Canadian Policy Research Networks).
650. Beauregard, T. A. & Henry, L. C. (2009). Making the link between work-life balance practices and organizational performance. *Human Resource Management Review*, 19, 9-22.
651. Sörensen, S., Pinquart, M., & Duberstein, P. (2002). How Effective Are Interventions With Caregivers? An Updated Meta-Analysis. *The Gerontologist*, 42(3), 356-372.
652. Pinquart, M. & Sörensen, S. (2005). Ethnic differences in the caregiving experience: Implications for interventions. *Geriatrics and Aging*, 8(10), 64-66.
653. Pinquart, M. & Sörensen, S. (2006). Helping caregivers of persons with dementia: which interventions work and how large are their effects? *International Psychogeriatrics*, 18(4), 577-595.
654. Statistics Canada. (2004). The gap in achievement between boys and girls. *Education Matters: Insights on Education, Learning and Training in Canada*, October 2004(4).
655. Raymond, M. (2008). *High School Dropouts Returning to School*. (Ottawa: Statistics Canada).
656. Government of Quebec. (2004). *Boys' Academic Achievement: Putting the findings into perspective. Summary Report*.
657. Statistics Canada. (2004). Children of immigrants: how well do they do in school? *Education Matters: Insights on Education, Learning and Training in Canada*, October 2004(4).
658. Fortin, N. M., Oreopoulos, P., Phipps, S., & Canadian Institute for Advanced Research. (2012). *Leaving Boys Behind: Gender Disparities in High Academic Achievement*.
659. Sarkadi, A., Kristiansson, R., Oberklaid, F., & Bremberg, S. (2008). Fathers' involvement and children's developmental outcomes: a systematic review of longitudinal studies. *Acta Paediatrica*, 97(2), 153-158.
660. Long, D. (2008). *All Dads Matter. Towards an Inclusive Vision for Father Involvement Initiatives in Canada*.
661. Vogel, C. A., Boller, K., Faerber, J., Shannon, J. D. et al. (2003). *Understanding Fathering: The Early Head Start Study of Fathers of Newborns*.
662. Manahan, C. & Ball, J. (2007). Aboriginal Fathers Support Groups: Bridging the Gap between Displacement and Family Balance. *First Peoples Child & Family Review*, 3(4), 42-49.
663. Ravanera, Z. R. (2008). *Profiles of Fathers in Canada*. (Prepared for Changing Fatherhood: Supporting Involvement, a SSHRC-CURA project of the Father Involvement Research Alliance).
664. National Collaborating Centre for Aboriginal Health. (2011). *...with Dad: Strengthening the Circle of Care*.
665. Skookum Jim Friendship Centre. (n.d.). *Traditional Parenting*. Retrieved on February 17, 2012, from <http://www.skookumjim.com/tradpar.php>
666. Manitoba Metis Federation. (n.d.). *Metis Community Liaison Department*. Retrieved on February 17, 2012, from http://www.mmf.mb.ca/index.php?option=com_content&view=article&id=81:metis-community-liaison-department&catid=46:departments&Itemid=76

References

667. Dze L K'ant Friendship Centre Society. (n.d.). *Full Circle Support - Parenting with FASD*. Retrieved on February 17, 2012, from http://www.dzelkant.com/full_circle.php
668. Young and Potential Fathers. (2012). *About YPF*. Retrieved on July 3, 2012, from http://youngpfathers.org/?page_id=5
669. Father Involvement Initiative - Ontario Network. (2012). *Unique and New Toronto Program for Young African-Canadian Fathers*. Retrieved on July 3, 2012, from <http://www.fira.ca/news-release.php?id=126>
670. Young and Potential Fathers. (2012). *Services*. Retrieved on July 3, 2012, from http://youngpfathers.org/?page_id=17
671. Hoffman, J. (2007). *Supporting Father Involvement in Canadian Families: An Overview*. (Peterborough: FIRA).
672. Dubeau, D., Devault, A., & Forget, G. (2009). *La paternité au XXI^e siècle*. (Montreal: Presses de l'Université Laval).
673. Father Involvement Initiative - Ontario Network. (n.d.). *Our History*. Retrieved on July 3, 2012, from http://www.cfii.ca/our_history
674. Father Involvement Initiative - Ontario Network. (n.d.). *About Us*. Retrieved on July 3, 2012, from http://www.cfii.ca/about_us
675. Father Involvement Research Alliance. (2012). *About Us - Partners*. Retrieved on July 3, 2012, from <http://fira.ca/page.php?id=13>
676. BC Council for Families. (2011). *Learn More About the Father Involvement Network*. Retrieved on July 3, 2012, from <http://www.bccf.ca/learn-more-about-father-involvement-network>
677. Father Involvement Research Alliance. (2012). *About Us*. Retrieved on July 4, 2012, from <http://fira.ca/page.php?id=1>
678. My Daddy Matters Because ... (n.d.). *Fatherhood: it's the best job on the planet*. Retrieved on February 9, 2012, from <http://www.mydad.ca/>
679. My Daddy Matters Because ... (n.d.). *Research Report II*. Research Report on the National Project on Fathering.
680. Hoffman, J. (2011). *Father Factors: What social science research tells us about fathers and how to work with them*. (Peterborough: Father Involvement Research Alliance).
681. Health Canada. (2003). *Canadian Guidelines for Body Weight Classification in Adults*.
682. Indian and Northern Affairs Canada. (2002). *An Evolving Terminology Relating to Aboriginal Peoples in Canada*.
683. Statistics Canada. (2011-04-05). *2006 Census reference materials. Aboriginal Peoples Technical Report. 1. Concepts and variables*. Retrieved on January 17, 2012, from http://www12.statcan.ca/census-recensement/2006/ref/rp-guides/rp/ap-pa_2/p1-eng.cfm
684. Canadian Study of Health and Aging. (n.d.). *Clinical Examination*. Retrieved on August 29, 2011, from http://www.csha.ca/r_clinical_examination.asp
685. Canada Mortgage and Housing Corporation. (n.d.). *Housing in Canada Online - Definitions of Variables*. Retrieved on January 13, 2012, from http://cmhc.beyond2020.com/HiCODefinitions_EN.html
686. Environment Canada. (2012-06-18). *Ground-Level Ozone and Fine Particulate Matter Air Quality Indicators Data [Data File]*. Retrieved on June 20, 2012, from <http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=25C196D8-1>
687. Health Canada. (2011). *Canadian Alcohol and Drug Use Monitoring Survey 2010: Microdata User Guide*. (Health Canada).
688. Public Health Agency of Canada. (2010). *HIV and AIDS in Canada. Surveillance Report to December 31, 2009*. (Ottawa: Public Health Agency of Canada).
689. Statistics Canada. (2009-11-20). *Immigration population*. Retrieved on February 29, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/ref/dict/pop047-eng.cfm>
690. Statistics Canada. (2009-11-20). *Place of birth of respondent*. Retrieved on February 29, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/ref/dict/pop118a-eng.cfm>
691. Statistics Canada. (2009-12-08). *More information on Year of immigration*. Retrieved on June 15, 2012, from <http://www12.statcan.gc.ca/census-recensement/2006/ref/dict/pop133a-eng.cfm>
692. Statistics Canada. (2011-09-26). *CANSIM Table 102-0506 Infant deaths and mortality rates, by age group and sex, Canada, annual [Data File]*. Retrieved on August 22, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1020506>

References

693. Parikh, S. V., Lam, R. W., & CANMAT Depression Work Group. (2001). Clinical Guidelines for the Treatment of Depressive Disorders. I. Definitions, Prevalence, and Health Burden. *The Canadian Journal of Psychiatry*, 46(S1), 13S-20S.
694. Statistics Canada. (2011-10-25). *Health Indicators. Definitions and data sources. 1. Health Status*. Retrieved on January 18, 2012, from <http://www.statcan.gc.ca/pub/82-221-x/2011002/def/def1-eng.htm>
695. Statistics Canada. (2011). *Income in Canada, 2009*. (Ottawa: Statistics Canada).
696. Statistics Canada. (2011). *Survey of Labour and Income Dynamics (SLID) - 2009 Survey Overview*. (Ottawa: Statistics Canada).
697. Statistics Canada. (2011-06-13). *CANSIM Table 202-0801 Low income cut-offs before and after tax by community and family size, 2009 constant dollars, annual (dollars)* [Data File]. Retrieved on January 17, 2012, from <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&searchTypeByValue=1&id=2020801>
698. Statistics Canada. (2011). April to June 2011. *Quarterly Demographic Estimates*, 25(2), 1-80.
699. Statistics Canada. (2012-01-31). *Population centre (POPCTR)*. Retrieved on February 8, 2012, from <http://www12.statcan.ca/census-recensement/2011/ref/dict/geo049a-eng.cfm>
700. Statistics Canada. (2011-02-25). *CANSIM Table 102-4309 Mortality and potential years of life lost, by selected causes of death and sex, three-year average, Canada, provinces, territories, health regions and peer groups, occasional* [Data File]. Retrieved on August 26, 2011, from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1024309>
701. Statistics Canada. (2005). *Canadian Community Health Survey Cycle 3.1 Final Questionnaire*. (Ottawa: Statistics Canada).
702. Statistics Canada. (n.d.). *Uniform Crime Reporting Survey - Concepts and Definitions*. (Ottawa: Statistics Canada).

