

Urban Aboriginal health: Examining inequalities between Aboriginal and non-Aboriginal populations in Canada

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This article contributes to the nascent literature on the health of urban Aboriginal people by comparing the health status and determinants of health of the urban Aboriginal and urban non-Aboriginal population in Canada. Data for the research were taken from the 2001 Aboriginal Peoples Survey (APS) and the 2000–2001 Canadian Community Health Survey (CCHS) Cycle 1.1. Framed within a population health approach, we explore the extent to which health status and determinants of health differ between Aboriginal and non-Aboriginal populations living in urban areas. Health status is measured by three variables—self-assessed health status, chronic conditions, and activity limitations. While disparities in health exist between the urban Aboriginal and non-Aboriginal population, they are not as large as those between the Aboriginal population living on a reserve and non-Aboriginal people. The social determinants of health are quite similar between the two populations but the results also reveal the significance of cultural factors in shaping health among the urban Aboriginal population. The research demonstrates a need for future research to focus on culturally specific determinants of health as one potential explanation for disparities in health between urban Aboriginal and non-Aboriginal people.

Keywords: Aboriginal, urban, social determinants of health, cultural determinants

La santé des Autochtones en milieu urbain : une exploration des inégalités entre les Canadiens autochtones et non autochtones

Cet article a pour but de contribuer à la littérature en émergence portant sur la santé des Autochtones en milieu urbain, en comparant l'état de santé et les déterminants de la santé de la population autochtone et non-autochtone en milieu urbain au Canada. L'étude s'appuie sur des données tirées de l'Enquête auprès des peuples autochtones (EPA) de 2001 et de l'Enquête sur la santé dans les communautés canadiennes (ESCC), cycle 1.1. Préconisant une approche axée sur la santé de la population, nous explorons les différences de l'état de santé et des déterminants de la santé entre les populations autochtones et non-autochtones en milieu urbain. Trois variables sont utilisées pour décrire l'état de santé : l'auto-évaluation de l'état de santé, les maladies chroniques et la limitation d'activités. Si l'existence de disparités en matière de santé entre la population autochtone et non-autochtone en milieu urbain est démontrée, celles-ci ne sont pas aussi importantes que les disparités qui caractérisent la population non-autochtone et autochtone vivant dans une réserve. Les déterminants sociaux de la santé sont comparables pour les deux populations, mais les résultats illustrent à quel point des facteurs culturels peuvent également intervenir en faveur ou au détriment de la santé parmi la population autochtone en milieu urbain. Cette étude exploratoire fait ressortir la nécessité de tenir compte des facteurs culturels propres aux déterminants de la santé dans les recherches ultérieures afin d'identifier des

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pistes d'explication des disparités en matière de santé entre les individus autochtones et non-autochtones en milieu urbain.

Mots clés : Autochtones, urbain, déterminants sociaux de la santé, déterminants culturels

Introduction

The number of people in Canada who identify as Aboriginal now exceeds one million (Canada 2008a).¹ As the Aboriginal population in Canada continues to grow much faster than the non-Aboriginal population, so do disparities in health. Research demonstrates a disproportionate gap in health status between Aboriginal and non-Aboriginal populations (Waldram et al. 2006; Estey et al. 2007; Wilson et al. 2010). While there is much documented information about inequalities in mortality and morbidity between Aboriginal and non-Aboriginal populations in Canada, what we know about the health status of the Aboriginal population is mainly limited to Registered Indians living on reserves (see, for example, Barton et al. 2005; Martens et al. 2005).² Thus, little is known about the health of other segments of the Aboriginal population such as those who live in urban areas (which can include Registered Indians, non-status Indians, Métis, and Inuit).

Since the 1960s, Canada has witnessed unprecedented growth in the urban Aboriginal population. In the early 1950s, less than 7 percent of the Aboriginal population lived in urban areas. By the early 1960s, approximately 13 percent of the total Aboriginal population lived in

urban areas (see Kalbach 1987). Data from the 2006 Census of Canada reveal that this figure has increased to over 50 percent while the population residing on Indian Reserves accounts for less than 30 percent of the Aboriginal population (Canada 2008a).³ On the surface, the increasing urbanization of the Aboriginal population suggests a massive migration from reserves and a depopulation of reserve and rural areas (Norris et al. 2001, 2003a; Peters 2005). However, as Peters (2005) and others have demonstrated, Aboriginal urbanization is quite complex. The growth of the urban Aboriginal population is not necessarily reflective of mass movement from reserves to cities but rather a combination of movement, high rates of natural increase, changing patterns of self-identification (i.e., ethnic mobility), and legislated changes to the Indian Act in 1985 (Bill C-31) (Guimond 2003a; Norris et al. 2003b).⁴ In fact, Guimond (2003b) has argued that intragenerational ethnic mobility, which occurs when a person changes their ethnic affiliation over time, is responsible for the large increase in the urban Aboriginal population from the mid-1980s to 2001. Despite the movement of individuals from reserve to urban settings and the increase in the number of individuals living in urban areas who identify themselves as Aboriginal, the research on Aboriginal health continues to concentrate on Registered Indians living on reserves (Hotson et al. 2004; Kaur et al. 2004; Muttitt et al. 2004; Dobbeltsteyn 2006). Two recent reviews of Aboriginal health research conducted in medical/health sciences (Young 2003) and the social sciences (Wilson and Young 2008) conclude that research fails to reflect the geographic profile of Aboriginal Peoples in Canada with a severe under-representation of urban

¹The term "Aboriginal" is used in this article to refer to the descendants of the original inhabitants of Canada. The Constitution Act of Canada (1982) recognizes three broad Aboriginal identity groups: North American Indians, Métis, and Inuit (Canada 1982). Many "Indians" prefer the phrase "First Nations" when referring to themselves as a collective group. The Inuit are Aboriginals who mainly live in Canada's most northern regions. Traditionally the term Métis was used to describe the children of Cree women and French fur traders living in the prairie region of Canada. However today the term is used quite broadly to refer to individuals of mixed First Nations and European ancestry (Canada 2004b). The term "Registered" or "Status" Indians refers to those individuals who are registered under the Indian Act of Canada. This term is only used in this article when quoting directly from other studies.

²A reserve is a tract of land set aside for the use and benefit of a First Nation community (Canada 2004b). The majority of Aboriginal people living on reserves are Registered or Status Indians.

³It is important to note that the way in which the Aboriginal population had been identified and counted in the Census of Canada has changed over time. Thus, these sources are likely using different population definitions and may not be directly comparable.

⁴This mainly refers to Bill C-31 reinstatements, the majority of which live in urban areas (Norris et al. 2003a).

Aboriginal Peoples. This can be explained, in part, by the lack of health data available for urban Aboriginal people since much of the annual health information collected is only available for the on-reserve population and this is severely limited in terms of coverage and scope (Waldram et al. 2006). Beyond issues of data availability, the Royal Commission on Aboriginal Peoples argued that non-Aboriginal researchers overlook the urban population due to pervasive and persistent ideas about where Aboriginal Peoples belong (i.e., on reserves and in remote locations) (Canada 1996b).

This study begins to fill the gap in the existing knowledge base on Aboriginal health by examining the health of the urban Aboriginal population in Canada. More specifically, using data from the 2001 Aboriginal Peoples Survey (APS) (Canada 2001a) and the 2000/2001 Canadian Community Health Survey (CCHS) (Canada 2001b), this article presents the results of statistical analysis aimed at comparing the health status and determinants of health between urban Aboriginal Peoples and non-Aboriginals in Canada. This is an important avenue of investigation because it sheds light on the extent to which Aboriginal health disparities continue to persist in urban locations.

Background

Aboriginal people in Canada suffer from much higher rates of mortality and morbidity than the non-Aboriginal population (see Frolich et al. 2005). For example, the gap in life expectancy between Registered Indians and the general Canadian population is almost seven years (Canada 2004a). Infant mortality rates are 40 percent higher among the Registered Indian population and suicide rates are twice as high as compared with the general Canadian population (Canada 2004a; Kirmayer et al. 2007). Morbidity is also more prevalent within the Aboriginal population. While infectious diseases are on the decline, as Waldram et al. (2006) note, they have been offset by chronic conditions and injuries as the leading causes of death and health problems within the Aboriginal population. While cancer rates remain lower within the Aboriginal population compared to the non-Aboriginal population, diabetes, hypertension, cardiovascular disease, and obesity

are much more prevalent among Aboriginal people (Waldram et al. 2006; Canada 2008b, 2009a).

Research shows large disparities in health between Aboriginal and non-Aboriginal populations but much of what we know about the Aboriginal health is based on data collected for on reserve First Nations populations (Waldram et al. 2006). Save for a handful of studies, relatively little is known about the health of urban Aboriginal people. Interestingly, much of what health research exists about urban Aboriginal populations mainly focuses on issues related to health care use. In one of the earliest health studies on the urban Aboriginal population, Waldram (1990a, 1990b) conducted extensive surveys on the health care utilization behaviours of urban Aboriginal people living in the city of Saskatoon, Saskatchewan. He found few differences in physician use between the non-Aboriginal and Aboriginal population and showed (contrary to assumptions that existed at the time) that urban Aboriginal people do not avoid conventional health care (Waldram 1990a). Waldram (1990b) also found that urban Aboriginal people continue to utilize traditional healing practices while living in the city, particularly as a complement to contemporary health care (i.e., physicians). In another study, Benoit et al. (2003) interviewed Aboriginal women living in Vancouver's "Downtown Eastside" to understand their perceptions of how health care services meet their specific health care needs. They found that urban Aboriginal women contend with racism and discrimination within the contemporary health care system and have a strong desire for culturally appropriate and traditional approaches to healing (see also Tang and Browne 2008). Work by Levin and Herbert (2004) also points to problems of racial bias and cultural insensitivity when urban Aboriginal people access health care (see also Browne et al. 2011) while a study by Mundel and Chapman (2010) of the Urban Aboriginal Community Kitchen Garden Project in Vancouver identifies the importance of a decolonizing approach to health promotion that has the potential to address the health needs and causes of urban Aboriginal health disparities. Research by Walji et al. (2010) points to the potential importance of naturopathic medicine for providing holistic and culturally sensitive health care to Aboriginal patients in an Aboriginal health centre in Toronto. Other

studies focus more closely on specific health issues, risky health behaviours, and problems in particular cities. For example, Iwasaki and colleagues (Iwasaki et al. 2004, 2005) studied the coping mechanisms of Aboriginal women and men with diabetes living in Winnipeg, Manitoba, and Macdonald et al. (2010) explored Aboriginal understandings of tuberculosis in Montreal. In other research, Heath et al. (1999) and Mehrabadi et al. (2008) have examined risk factors associated with HIV (see also Mill et al. 2008) and Miller et al. (2011) has studied the determinants of injection drug use among urban Aboriginal youth in Prince George and Vancouver, BC.

The current body of literature on urban Aboriginal health offers insight into health care use and accessibility problems but very little in terms of health status. Much of the research conducted focuses on only a small number of Canadian cities leaving us with little or no picture of urban Aboriginal health at the national scale of analysis. However, a study based on data from the 2001 Canadian Community Health Survey (CCHS) revealed that the health of the off-reserve Aboriginal population (i.e., those living in cities, towns, rural areas) is worse than the health of their non-Aboriginal counterparts (Tjepkema 2002). In particular, the research shows that a higher percentage of the urban Aboriginal population rates their health as fair/poor and has at least one chronic condition in comparison to the non-Aboriginal population. While the study represents an important first glimpse of the health of urban Aboriginal Peoples, important gaps remain. First, the CCHS is a national survey of the general Canadian population. As such, it does not target Aboriginal people. The CCHS only captured 3500 individuals reporting Aboriginal ancestry. Since the CCHS did not set out to sample Aboriginal populations by design, those captured in the CCHS may not be representative of the overall off-reserve population and may not identify themselves as Aboriginal. Second, while the research does reveal important disparities in health, we still know little about the extent of the differences in the determinants of health. This knowledge is crucial for an in-depth understanding of the most important factors that shape the health status of Canada's urban Aboriginal population. Such information is necessary to ensure that the health and social services sys-

tem in urban settings meets the needs of the Aboriginal population. It is these two gaps in knowledge that this research seeks to fill.

Data and methods

To understand differences in health status and determinants of health between urban Aboriginal and non-Aboriginal people in Canada, a population health approach is employed. A population health approach seeks to improve the health of populations by identifying inequalities in health and focusing on why some populations are healthy and others are not (Evans and Stoddart 1994; Canada 2003b; Richmond and Ross 2009). The approach places emphasis on a broad range of factors such as age, gender, income, and education that shape the health of populations (Canada 2008c). While social and economic factors influence the health of both Aboriginal and non-Aboriginal populations, evidence also indicates that Aboriginal culture is also an important determinant of health (Canada 1996a; Smylie and Aboriginal Health Issues Committee 2001; Adelson 2005; Waldram et al. 2006). Given the health beliefs of Aboriginal Peoples in Canada, it is essential in this research to consider not only characteristics related to sociodemographic and socioeconomic status, health behaviours, geography, and health care use but also cultural factors. In doing so, we examine the extent to which disparities and differences in the determinants of health exist between urban Aboriginal and non-Aboriginal populations and also the relative role of cultural factors in shaping health among urban Aboriginal people.

Data for the analysis came from two national cross-sectional surveys—the 2001 Aboriginal Peoples Survey (APS) and the 2000–2001 CCHS Cycle 1.1. The APS is a national survey of individuals living on reserves and off reserve who self-report their Aboriginal identity and/or report Aboriginal ancestry (Canada 2003a). Data for the 2001 APS were collected between September 2001 and June 2002 from approximately 98 649 respondents with a response rate of 84 percent (Canada 2003a). The APS included four questionnaires: i) adult core survey, ii) Inuit supplement, iii) Métis supplement, and iv) child survey. The adult core survey is administered to all

individuals aged 15 years and older and contains nine thematic sections (language, mobility, education, technology, health, employment, income, justice/policing, and housing) that include a standard set of questions that support our comparative analysis (further details below). For the purposes of this analysis we include only the Aboriginal identity population living in urban settings.⁵

The CCHS was selected to represent the non-Aboriginal population in Canada. It is a cross-sectional survey conducted throughout Canada every two years by Statistics Canada beginning in 2000/2001. Data were collected from approximately 130 827 respondents between September 2000 and October 2001 excluding those living in remote regions, on Indian Reserves and Crown Lands, and those living in institutions. The survey contains questions related to health, health care use, and health behaviours. The CCHS is designed to produce information at the provincial, territorial, and health region levels (Beland 2002). Data from the 2000/2001 (Cycle 1.1) CCHS are used in this research to analyze health status and determinants of health for the general Canadian population. The public use microdata file (PUMF) of the CCHS that was used for this article does not contain detailed information on ethnicity so we could not exclude those individuals who may have reported Aboriginal ancestry. Thus, there may be some individuals in the CCHS who are in fact Aboriginal Peoples. However, given that the CCHS does not target the Aboriginal population, the potential proportion of Aboriginal respondents would be extremely small relative to non-Aboriginal respondents, making it the most suitable and comprehensive data set for representing the non-Aboriginal population. CCHS Cycle 1.1 was chosen over more recent cycles of CCHS because the data collection period matches more closely with the 2001 APS.

The 2001 APS and the 2000/2001 CCHS are both administered by Statistics Canada and provide the ideal data sets for conducting this analysis. Both surveys were conducted during a

similar time frame and contain a set of standard questions, which contain the same wording and answer structure, designed to measure health as well as use of health services, health behaviours (e.g., smoking and drinking habits), and basic socio-economic and demographic measures, which are recognized as key determinants of health status. Since the goal of this research is to provide a comparison of health status and determinants of health between urban Aboriginals and urban non-Aboriginals in Canada, it is important to select relatively comparable populations from both surveys. Given that 80 percent of the general Canadian population resides in urban areas, we include only the non-Aboriginal and Aboriginal populations who reside in urban settings.

In the analysis that follows, health is measured using three commonly measured variables. First, self-assessed health is measured using the single-item global measure in which an individual is asked to rate their health as excellent, very good, good, fair, or poor relative to others their own age. Responses are dichotomized into excellent/very good/good and fair/poor, which is a standard methodological approach when using this global measure of health (see Setia et al. 2011; Veenstra 2011). While self-reports of health may be biased (Lindeboom and van Doorslaer 2004; Salomon et al. 2004), there is a substantial body of research that demonstrates the single-item global measure of self-assessed health is a valid measure of health that strongly correlates with physician assessments of morbidity (e.g., Rohrer et al. 2007; Winter et al. 2007).

In both surveys, chronic conditions are represented by a derived variable based on one or more positive responses to a series of questions regarding physician-diagnosed long-term conditions. The list of possible conditions available in the CCHS is higher than the list in the APS. Thus, we limited responses to those chronic conditions common to both surveys and then calculated the total number for each respondent. This variable is also dichotomized into none/1 and 2/more chronic conditions.

The final health variable measures activity limitations (i.e., the extent to which everyday activities at work, school, or during leisure activity are limited due to a condition or health problem). Responses are categorized as yes (those

⁵The Aboriginal ancestry population refers to individuals who report Aboriginal origins. The Aboriginal identity population refers to individuals who identify as being North American Indian, Inuit, or Métis. A person could report Aboriginal origins (i.e., a grandparent, aunt, or other relative) but not actually identify as an Aboriginal person.

reporting they experience an activity limitation “often” or “sometimes”) and no. While research has shown that the self-rated health measure included in the APS and CCHS is valid for use in various cultural groups including Indigenous populations (Chandola and Jenkinson 2000; Sibthorpe et al. 2001), extensive testing of this variable, as well as the other two health outcomes among the Aboriginal population in Canada, has yet to be undertaken and represents a potential limitation.

In selecting determinants of health to include in this analysis, we focus on those most widely recognized in the research and policy literatures (PHAC 2010). Sociodemographic status is represented by age and gender. Age is divided into four categories, 15–24, 25–44, 45–54, and 55 years and over (see Table 1). The PUMF for the APS has preset age categories with the oldest being 55 years and over, thus it is not possible to examine older age groups. Socioeconomic status is measured by educational attainment, employment, and household income (see Smith et al. 2010). Highest level of education is comprised of three categories: did not complete high school, completed high school, and completed post-secondary. Employment is a binary variable with the employed forming one category (includes those who are currently working for pay, e.g., self-employed and those who work outside the home) and those not employed forming the other (includes those who are unemployed, retired, students, disabled, institutionalized, or otherwise not in the labour force). Household income levels are categorized slightly differently in the APS and CCHS. Thus, they were recoded to match as closely as possible. For the CCHS data, household income was categorized into four levels: \$0–\$29 999, \$30 000–\$49 999, \$50 000–\$79 999, and \$80 000 plus. For the APS data, income was also divided into four categories: \$0–\$29 999, \$30 000–\$59 999, \$60 000–\$79 999, and \$80 000 plus.

Health behaviours include smoking and drinking alcoholic beverages. Smoking was measured by asking participants if they smoked daily, occasionally, or not at all. Type of drinker is a derived variable in both surveys with three categories representing regular drinker, occasional drinker, and non-drinker. Within the CCHS and APS, occasional drinker refers to an individual

Table 1
Profile of the urban Aboriginal and non-Aboriginal population

Socioeconomic, demographic, geographic, and health behaviour characteristics		Aboriginal %	Non-Aboriginal %
Age	15–24	25	17
	25–44	48	39
	45–54	16	18
	55+	12	26
Sex	Male	45	49
	Female	55	51
Place of Residence	CMA	64	90
	Urban non-CMA	36	10
Education	No High school	32	27
	High school	16	19
	Completed	51	54
Employment	Unemployed	35	31
	Employed	65	69
Household Income ^a	Level I	30	23
	Level II	31	22
	Level III	17	27
	Level IV	22	28
Consultation with Physician	No	25	21
	Yes	75	79
Consultation with Nurse	No	76	91
	Yes	24	9
Type of Smoker	Daily Smoker	36	20
	Occasional Smoker	8	5
	Non-smoker	56	75
Type of Drinker	Regular Drinker	54	57
	Occasional Drinker	24	19
	Non-drinker	22	24

SOURCE: APS 2001 (Canada 2001a) and CCHS Cycle 1.1, 2000–2001 (Canada 2001b)

^a Aboriginal Income Non-Aboriginal Income
Level I \$0–\$29 999 Level I \$0–\$29 999
Level II \$30 000–\$59 999 Level II \$30 000–\$49 999
Level III \$60 000–\$79 999 Level III \$50 000–\$79 999
Level IV \$80 000+ Level IV \$80 000+

who consumes less than one drink per month while a regular drinker refers to an individual who drinks more than one drink per month. A non-drinker represents those who currently do not drink as well as former drinkers. Obviously, the categorization of this variable has inherent limitations, such as the inability to examine the effects of heavy vs. low amounts of alcohol consumption. While variables such as these that measure daily smoking and social drinking are commonly used in health studies, they should not be confused with problem or addictive

behaviours (Richmond et al. 2007; Kobayashi et al. 2008).

Health care use is represented by two variables: consultation with a physician in the past 12 months and consultation with a nurse in the past 12 months. In the CCHS, respondents are asked to indicate the number of times they sought care in the past 12 months while in the APS respondents are just asked to indicate “yes” or “no” to a question asking them if they consulted a physician/nurse in the past 12 months. To make the data comparable, the CCHS data were recoded such that 1 or more consultations indicates a “yes” for consultation in the past 12 months and 0 consultations indicates a “no.”

We also wanted to examine the effect of place of residence on health status. Place of residence is measured differently in the APS and CCHS. In the APS, off-reserve location is measured by type of geographic location (urban Census Metropolitan Area [CMA], urban non-CMA, rural). In contrast, the CCHS is sampled on the basis of health regions throughout the country. Since this research compares the urban Aboriginal and urban non-Aboriginal populations, we excluded all Aboriginal participants living in rural locations from the APS data and created a binary variable: urban CMA and urban non-CMA.⁶ For the CCHS data, we first needed to identify and retain only those health regions located in an urban area. Next, we created a binary variable by categorizing a health region as urban CMA if it covered a CMA (e.g., City of Toronto) or as urban non-CMA if it covered an urban area not considered to be a CMA (e.g., Prince Albert, Saskatchewan). This allows us to examine if the size of urban area in which an individual lives is a determinant of health.

In the analysis that follows, we also examine the relative importance of cultural determinants of health for the Aboriginal population. The first three variables were selected to represent cultural determinants of health. Aboriginal respondents were asked if they had hunted, fished, or gathered wild plants in the past 12 months for pleasure, commercial use, food, or medical/ceremonial reasons. All three variables were

dichotomized and recoded as yes vs. no. Two additional variables were selected to represent traditional approaches to healing. Respondents were asked if they had had contact with a traditional healer in the past 12 months about a physical, emotional, or mental health problem. Respondents were also asked if traditional medicines, healing, or wellness practices are available in their community. Both variables are binary with yes forming one category and no forming the other category. The final cultural determinant measures language, with those respondents reporting they can understand/speak an Aboriginal language representing one category and those reporting they do not have a good ability to understand/speak an Aboriginal language forming the other category.

Due to the dichotomous nature of the dependent variables (e.g., activity limitation vs. no activity limitation), logistic regression is used for all analyses. Logistic regression predicts the probability of an event occurring based on the independent predictor variable(s), and coefficients are estimated using the maximum likelihood method (MLM) of estimation (Aldrich and Nelson 1984). Independent variables are recoded into categorical indicators and one value of each variable was chosen as the categorical reference. In each case, the reference category was the one least likely assumed to be associated with poor health based on the existing body of research on the social determinants of health. For example, for the age variable, the youngest age group (15–24 years) was selected as the reference category because of the many studies that demonstrate that the likelihood of poor health increases with age in all populations (Wilson et al. 2010). Odds ratios are used to interpret the results of the logistic regression models. The odds ratio is a measure that approximates how much more likely (or unlikely) it is for an outcome (e.g., fair/poor self-assessed health) to be present among those with a given attribute relative to the reference category while controlling for all other attributes. Population weights supplied by Statistics Canada were used for all statistical analyses.

In the first stage of the statistical analysis that follows, frequency distributions are derived for all of the socioeconomic, demographic, health behaviours, geography, and health care use

⁶According to Statistics Canada, a CMA “is formed by one or more adjacent municipalities centred on a large urban area (known as the urban core). A CMA must have a total population of at least 100 000 of which 50 000 or more must live in the urban core” (Canada 2009b).

variables. This provides a profile of the urban Aboriginal and the urban non-Aboriginal populations. In the second stage, frequency analysis of the three health status variables is performed to compare the extent to which disparities in health exist between the urban Aboriginal and the urban non-Aboriginal population. In the third stage, we present the results of the logistic regression models. Three logistic regression models were estimated for both data sets, each one predicting a different health outcome. Following this, we present the results of three additional models that test for the importance of cultural variables as determinants of urban Aboriginal health. It is important to note that while logistic regression allows us to identify statistically significant associations between the dependent and independent variables, we cannot comment on causality.

Results

The frequency distributions reveal that the urban Aboriginal population is considerably younger than the non-Aboriginal population (see Table 1). For example, 73 percent of the urban Aboriginal population is between 15 and 44 years of age compared with 56 percent in the non-Aboriginal population. This finding is reflective of the much higher birth rates and overall lower life expectancy within the Aboriginal population (Adelson 2005; Canada 2008b). A much higher percentage of the non-Aboriginal population resides in large urban areas (i.e., CMAs) than the Aboriginal population. In terms of socioeconomic status, the urban non-Aboriginal population enjoys higher levels of education and household income than the Aboriginal population. For example, over 30 percent of Aboriginal respondents have not completed high school compared to 27 percent of the non-Aboriginal population. Similarly, 30 percent of the Aboriginal population reports a household income level of less than \$30 000 compared with 23 percent of the non-Aboriginal population. However, a similar percent of both populations are unemployed. While the percent of both populations reporting physician use in the past 12 months is the same, a much higher percent of the urban Aboriginal population have consulted a nurse. In terms of health behaviours, the percent reporting regular alco-

hol consumption is very similar between the two populations. However, 36 percent of the urban Aboriginal population smokes daily in comparison with 20 percent of the non-Aboriginal population. In addition, a much higher percentage of the non-Aboriginals are non-smokers.

A particular interest of this research is to examine the extent to which health status differs between the two populations. That is, are the pervasive disparities that exist between the on-reserve First Nations and the non-Aboriginal population observable between the urban Aboriginal and non-Aboriginal population? Given that the Aboriginal population is much younger than the non-Aboriginal population, the frequency distributions for both populations are age-standardized (see Table 2). In terms of self-assessed health status, the results show that a higher percentage of the urban Aboriginal population rate their health as fair/poor compared with the non-Aboriginal population across all four age groups. For example, 13 percent of the Aboriginal population aged 25–44 years report fair/poor health in comparison to 7 percent of the non-Aboriginal population. Similarly, 37 percent of the Aboriginal population aged 55 years and older rate their health as fair/poor compared to 25 percent of the non-Aboriginal population. Interestingly, across all four age groups, a higher percent of the non-Aboriginal population report two or more chronic conditions compared to the Aboriginal population. Yet, with respect to activity limitations, the percentage of the Aboriginal population reporting an activity limitation is higher than the non-Aboriginal population for all four age groups. For example, 21 percent of the Aboriginal population aged 15–24 years has an activity limitation while only 14 percent of the non-Aboriginal population reports such a limitation.

Having explored how health status differs between the Aboriginal and non-Aboriginal populations in urban areas, we now examine the extent to which differences in the determinants of health status exist between these two populations using logistic regression. The model predicting self-assessed health status reveals interesting similarities in the determinants of health between both populations (see Table 3). For example, in both populations, as age increases, the likelihood of reporting fair/poor

Table 2

Health profile of the urban Aboriginal and non-Aboriginal population

Health variables	Categories	15-24 years (%)	25-44 years (%)	45-55 years (%)	55+ years (%)
Aboriginal ^a					
Self-perceived health status	Excellent/very good/good	94	87	75	63
	Fair/poor	6	13	25	37
Chronic conditions	None or 1	92	81	62	44
	2 or more	8	19	38	56
Activity limitation	No	79	69	52	40
	Yes	21	31	48	60
Non-Aboriginal ^b					
Self-perceived health status	Excellent/very good/good	95	93	87	75
	Fair/poor	5	7	13	25
Chronic conditions	None or 1	78	71	61	39
	2 or more	22	29	39	61
Activity limitation	No	86	84	75	56
	Yes	14	16	25	44

SOURCE: ^aAPS 2001 (Canada 2001a)^bCCHS Cycle 1.1, 2000-2001 (Canada 2001b)

health increases. However, the odds ratios are higher for the Aboriginal population, which suggests a stronger age effect among this population. For both, individuals with lower levels of education, the unemployed, and those with lower levels of household income are more likely to report fair/poor health than those with post-secondary education, the employed, and those earning \$80 000 or more. Those who consulted a doctor or nurse have higher odds of reporting fair/poor health than those who have not. Finally, while daily smokers are more likely to report fair/poor health than non-smokers, regular and occasional drinkers are less likely than non-drinkers. The only differences between the two populations show that gender and place of residence are significant determinants of health for the non-Aboriginal population but not the Aboriginal population. Non-Aboriginal women are less likely than non-Aboriginal men to report fair/poor health and non-Aboriginal people living in smaller urban areas are more likely to be in fair/poor health than those living in CMAs.

The models for chronic conditions (Table 4) and activity limitation (Table 5) show similar results to the previous model. Again, for both populations, older individuals have higher odds of reporting two or more chronic conditions or an activity limitation as do individuals with less than high school education, the unemployed, and those in lower income levels. As with the model

for self-assessed health status, the odds ratios for age in the model for chronic conditions are much higher for the Aboriginal population than the non-Aboriginal population, suggesting a stronger age effect on health for this population. Both Aboriginal and non-Aboriginal respondents who have consulted a doctor or nurse within the past 12 months have greater odds of reporting two or more chronic conditions and an activity limitation. Those who smoke daily have higher odds of having two or more chronic conditions and an activity limitation as compared to non-smokers. In terms of differences between the two populations, gender is only a significant determinant of activity limitation for the non-Aboriginal population. An interesting observation is that the effect of place of residence on reporting an activity limitation is the opposite in the two populations. Aboriginal people living in a smaller urban area are less likely to have an activity limitation while non-Aboriginal people living in a smaller urban area are more likely to have an activity limitation than those living in CMAs. Furthermore, occasional drinking is associated with increased odds of reporting two or more chronic conditions in the non-Aboriginal population but decreased odds in the Aboriginal population.

In the next stage of the analysis, we test for the importance of cultural determinants of health for the urban Aboriginal population only. The results of the three regression models provide interesting insight into the role

Table 3
Social determinants of self-rated health status

Variables	Categories	Aboriginal			Non-Aboriginal			Wald	
		Exp (B)	95% Confidence interval		Exp (B)	95% Confidence interval			
			Lower	Upper		Lower	Upper		
Age (15-24)					697.67			795.64	
	25-44	3.06***	2.61	3.59	189.26	1.86***	1.65	2.09	107.72
	45-54	7.20***	5.98	8.47	489.90	3.87***	3.43	4.37	485.86
	55+	7.65***	6.43	9.11	521.03	3.70***	3.30	4.14	519.22
Sex (Male)	Female	0.93	0.84	1.03	1.90	0.80***	0.75	0.86	46.84
Place of Residence (CMA)	Urban non-CMA	1.02	0.93	1.13	0.19	1.13*	1.02	1.25	5.53
Education (Post-secondary)					47.11				219.09
	No High school	1.40***	1.25	1.56	34.35	1.77***	1.64	1.91	218.86
	High school	0.89	0.77	1.03	2.35	1.25***	1.15	1.36	25.79
Employment (Employed)	Unemployed	2.10***	1.89	2.34	187.45	2.39***	2.22	2.57	534.89
Household Income (Level IV)					123.12				341.31
	Level I ^a	2.10***	1.80	2.45	90.98	2.40***	2.17	2.66	281.52
	Level II	1.38***	1.18	1.62	16.88	1.76***	1.59	1.95	114.60
	Level III	1.14	0.95	1.37	2.01	1.29***	1.16	1.43	22.66
Consultation with Physician (No)	Yes	2.29***	1.98	2.62	134.39	2.25***	2.04	2.48	263.89
Consultation with Nurse (No)	Yes	1.80***	1.62	2.00	114.81	2.00***	1.83	2.19	220.22
Smoking (Non-smoker)					72.90				251.27
	Daily	1.56***	1.41	1.73	71.82	1.80***	1.67	1.93	251.26
	Occasional	1.14	0.95	1.37	1.89	1.21*	1.03	1.43	5.17
Alcohol (Non-drinker)					174.01				287.37
	Regular	0.46***	0.41	0.52	173.36	0.53***	0.49	0.57	266.74
	Occasional	0.63***	0.55	0.71	52.71	0.82***	0.75	0.89	20.90
Rho-square		0.19				0.16			
Specificity		71%				65%			
Sensitivity		74%				77%			

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

^aAboriginal Income Non-Aboriginal Income
 Level I \$0-\$29 999 Level I \$0-\$29 999
 Level II \$30 000-\$59 999 Level II \$30 000-\$49 999
 Level III \$60 000-\$79 999 Level III \$50 000-\$79 999
 Level IV \$80 000+ Level IV \$80 000+

of cultural factors in shaping urban Aboriginal health outcomes (Table 6). More specifically, individuals who have hunted or fished in the past year are less likely to report fair/poor health and an activity limitation than those who have not. Those who have gathered wild plants in the past year are less likely to report fair/poor health but more likely to have two or more chronic conditions and report an activity limitation. Speaking an Aboriginal language is only associated with the reporting of an activity limitation. While consultation with a nurse or doctor is associated with a greater likelihood of being unhealthy, in contrast, Aboriginal people who have access to traditional practices in their community are less likely to

report two or more chronic conditions than those who do not. In addition, consultation with a traditional healer is significant for all three health outcomes and similarly shows that individuals who have consulted a traditional healer in the past 12 months are less likely to report fair/poor health, two or more chronic conditions, and an activity limitation than those who have not.

Discussion and conclusions

The purpose of this article is to contribute to a better understanding of the health of urban Aboriginal people by comparing their overall health status and determinants of health to those of the

Table 4
Social determinants of chronic conditions

Variables	Categories	Aboriginal			Non-Aboriginal			Wald	
		Exp (B)	95% Confidence interval		Exp (B)	95% Confidence interval			
			Lower	Upper		Lower	Upper		
Age (15–24)					1305.96			2165.27	
	25–44	2.96***	2.58	3.40	235.66	1.68***	1.58	1.79	255.59
	45–54	8.42***	7.22	9.82	740.20	2.65***	2.47	2.84	747.59
	55+	13.44**	11.43	15.80	992.29	4.45***	4.16	4.77	1805.63
Sex (Male)	Female	1.26***	1.15	1.37	24.21	1.53***	1.47	1.59	413.07
Place of Residence (CMA)	Urban non-CMA	0.99	0.91	1.09	0.03	1.03	0.96	1.09	0.53
Education (Post-secondary)					17.68				22.02
	No High school	1.25***	1.13	1.39	17.67	1.07*	1.01	1.28	5.94
	High school	1.08	0.95	1.23	1.51	0.92*	0.87	0.97	10.02
Employment (Employed)	Unemployed	1.31***	1.19	1.45	30.07	1.38***	1.31	1.45	163.12
Household Income (Level IV)					80.25				38.04
	Level I ^a	1.84***	1.61	2.11	79.13	1.20***	1.13	1.28	35.66
	Level II	1.54***	1.35	1.76	41.38	1.10***	1.04	1.17	10.21
	Level III	1.41***	1.21	1.64	20.20	1.05	0.99	1.11	2.85
Consultation with Physician (No)	Yes	3.23***	2.84	3.67	318.46	2.56***	2.42	2.71	1080.13
Consultation with Nurse (No)	Yes	1.86***	1.69	2.06	155.02	2.01***	1.88	2.15	427.91
Smoking (Non-smoker)					27.35				88.72
	Daily	1.27***	1.15	1.39	24.67	1.26***	1.20	1.32	83.75
	Occasional	0.97	0.82	1.15	0.10	1.18*	1.07	1.30	12.00
Alcohol (Non-drinker)					163.69				41.90
	Regular	0.50***	0.45	0.56	161.51	1.04	0.99	1.10	2.03
	Occasional	0.70***	0.62	0.79	34.85	1.21***	1.13	1.29	34.16
Rho-square		0.20				0.10			
Specificity		75%				61%			
Sensitivity		70%				69%			

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

^aAboriginal Income Non-Aboriginal Income
 Level I \$0–\$29 999 Level I \$0–\$29 999
 Level II \$30 000–\$59 999 Level II \$30 000–\$49 999
 Level III \$60 000–\$79 999 Level III \$50 000–\$79 999
 Level IV \$80 000+ Level IV \$80 000+

non-Aboriginal urban population in Canada. The results of the analysis using data from the 2001 APS and 2000/2001 CCHS reveal quite interesting findings. Before discussing the findings, some limitations deserve mention.

First, cross-sectional surveys such as the APS and CCHS may be limited by recall bias (Cleary and Jette 1984). That said, they remain very important sources of data. The APS is the only publicly available survey in Canada that specifically collects health information for Aboriginal Peoples, providing us with a unique glimpse of the urban-based population. While some First Nations communities (especially in the province of Quebec) refused to participate in the APS,

Statistics Canada was especially careful to ensure that the data are representative of the Aboriginal population (see the Statistics Canada [Canada 2003a]), *Aboriginal Peoples Survey 2001: Concepts and Methods Guide* for the various strategies employed by Statistics Canada to ensure data quality).

Second, since the research relies on cross-sectional data, it represents a comparative picture of the determinants of health between the Aboriginal and non-Aboriginal population in Canada at one point in time. Only longitudinal surveys would allow for a comparative examination of the health of the Aboriginal and non-Aboriginal population over time and to be

Table 5
Social determinants of activity limitation

Variables	Categories	Aboriginal			Non-Aboriginal				
		Exp (B)	95% Confidence interval		Exp (B)	95% Confidence interval			
			Lower	Upper	Wald	Lower	Upper	Wald	
Age (15-24)					826.48			1244.93	
	25-44	1.83***	1.66	2.02	148.47	1.41***	1.31	1.52	80.10
	45-54	4.10***	3.64	4.61	550.68	2.48***	2.29	2.68	495.17
	55+	4.60***	4.05	5.24	538.24	3.14***	2.91	3.39	863.79
Sex (Male)	Female	0.96	0.90	1.04	0.91	0.95*	0.90	0.99	5.61
Place of Residence (CMA)	Urban non-CMA	0.89***	0.83	0.96	8.92	1.09*	1.01	1.17	5.41
Education (Post-secondary)					17.09				104.05
	No High school	1.20***	1.10	1.32	17.01	1.35***	1.27	1.43	99.42
	High school	1.06	0.95	1.17	1.03	1.03	0.97	1.10	1.06
Employment (Employed)	Unemployed	1.57***	1.44	1.70	116.91	1.65***	1.56	1.74	328.22
Household Income (Level IV)					74.88				95.06
	Level I ^a	1.47***	1.32	1.63	48.04	1.40***	1.31	1.50	91.63
	Level II	1.28***	1.15	1.42	21.19	1.18***	1.11	1.26	23.83
	Level III	0.97	0.86	1.09	0.31	1.12*	1.05	1.19	11.64
Consultation with Physician (No)	Yes	1.79***	1.63	1.96	156.20	1.76***	1.66	1.87	313.33
Consultation with Nurse (No)	Yes	1.78***	1.64	1.94	176.97	1.67***	1.55	1.79	198.69
Smoking (Non-smoker)					22.20				214.70
	Daily	1.20***	1.11	1.23	21.13	1.49***	1.41	1.58	211.39
	Occasional	1.02	0.89	1.16	0.05	1.24***	1.11	1.38	15.39
Alcohol (Non-drinker)					117.07				40.38
	Regular	0.65***	0.59	0.71	84.45	0.90**	0.85	0.95	12.36
	Occasional	0.95	0.86	1.05	0.96	1.08*	1.01	1.16	4.57
Rho-square		0.11				0.08			
Specificity		65%				73%			
Sensitivity		66%				54%			

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

^aAboriginal Income Non-Aboriginal Income
 Level I \$0-\$29 999 Level I \$0-\$29 999
 Level II \$30 000-\$59 999 Level II \$30 000-\$49 999
 Level III \$60 000-\$79 999 Level III \$50 000-\$79 999
 Level IV \$80 000+ Level IV \$80 000+

able to make any causal statements about independent and dependent (i.e., health status) variables. While the Assembly of First Nations in Canada has launched a longitudinal survey of health, the First Nations Regional Longitudinal Health Survey (RHS), it only covers health issues for First Nations individuals living on reserves (i.e., First Nations communities) (First Nations Information Governance Centre 2009). It does not cover the Inuit and Métis populations or First Nations people who live off-reserve (typically in urban settings). In addition, the RHS is generally only accessible to First Nations researchers through their own First Nations Principles of OCAP (Ownership, Control,

Access, and Possession) (First Nations Information Governance Centre 2010). Thus, general access to the RHS data is currently not available to non-First Nations researchers seeking to analyze the data for publication in peer-reviewed journals. There may be opportunities for researchers to utilize data from future versions of the APS, the RHS, and the National Population Health Survey (Canada's main longitudinal survey of health of the general Canadian population) to compare the health status and determinants of health of both on and off-reserve Aboriginal Peoples and the non-Aboriginal population.

Third, while the Aboriginal population in Canada represents three broad identity groups

Table 6
Social and Cultural Determinants of Urban Aboriginal Health

Variables	Categories	Self-Rated Health			Chronic Conditions			Activity Limitation		
		Exp (B)	95% CI		Exp (B)	95% CI		Exp (B)	95% CI	
			Upper	Lower		Upper	Lower		Upper	Lower
Age (15–24)	25–44	2.899***	2.359	3.561	3.816***	3.158	4.611	1.788***	1.568	2.039
	45–54	6.431***	5.135	8.055	9.173***	7.448	11.298	4.272***	3.653	4.997
	55+	7.231***	5.748	9.097	17.437***	13.949	21.796	4.232***	3.555	5.037
Sex (Male)	Female	0.900	0.787	1.029	1.130*	1.001	1.276	0.871**	0.786	0.965
Place of residence (CMA)	Urban non-CMA	1.107	0.974	1.257	1.002	0.893	1.125	0.908*	0.822	1.002
Education (Post-secondary)	<High school	1.456***	1.257	1.685	1.496***	1.305	1.715	1.361***	1.211	1.530
	High school	0.880	0.720	1.077	1.176	0.995	1.389	1.039	0.902	1.197
Employment (Employed)	Unemployed	1.975***	1.722	2.266	1.262**	1.113	1.431	1.561***	1.402	1.737
Household Income (\$80 000+)	\$0–\$29 999	1.837***	1.503	2.245	1.539***	1.292	1.833	1.634***	1.410	1.894
	\$30 000–\$59 999	1.449***	1.184	1.772	1.303***	1.099	1.545	1.548***	1.343	1.785
	\$60 000–\$79 999	0.901***	0.705	1.150	1.160	0.955	1.410	1.101	0.933	1.298
Consultation with Physician (No)	Yes	2.349***	1.951	2.829	3.380***	2.857	3.999	1.813***	1.604	2.048
Consultation with Nurse (No)	Yes	1.786***	1.553	2.053	1.612***	1.419	1.832	1.692***	1.512	1.893
Smoking (Non-smoker)	Daily	1.440***	1.250	1.646	1.231*	1.092	1.388	1.186*	1.071	1.314
	Occasional	1.218	0.963	1.541	0.950	0.767	1.177	1.055	0.888	1.254
Alcohol (Non-drinker)	Regular	0.504***	0.434	0.586	0.491***	0.428	0.564	0.622***	0.551	0.702
	Occasional	0.669***	0.568	0.787	0.715***	0.615	0.832	0.926	0.810	1.058
Hunted (No)	Yes	0.666***	0.516	0.862	0.845	0.689	1.046	0.731*	0.612	0.873
Fished (No)	Yes	0.803**	0.688	0.938	1.030	0.901	1.177	0.968	0.864	1.084
Gathered Plants (No)	Yes	0.858***	0.739	0.996	1.290***	1.134	1.468	1.323***	1.183	1.479
Access to Traditional Practices (No)	Yes	1.124	0.991	1.275	0.855**	0.764	0.958	1.049	0.953	1.155
Contact with Traditional Healer (No)	Yes	0.690*	0.557	0.854	0.719*	0.593	0.872	0.587***	0.494	0.696
Language Ability (No)	Yes	1.164	0.995	1.360	0.925	0.797	1.074	0.770***	0.675	0.878
Rho-square		0.19			0.20			0.12		
Specificity		70%			77%			66%		
Sensitivity		74%			66%			67%		

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

(First Nations, Inuit, and Métis), it was beyond the scope of this article to compare health status and determinants of health between these three groups and the non-Aboriginal population. The “pan-Aboriginal” approach used here is a limitation in that the cultural interpretation and applicability of some of the survey questions may differ from one group to another. Therefore, policy interventions are more complicated to suggest and derive when using a “pan-Aboriginal” approach.

Fourth, the examination of the importance of cultural variables as determinants of urban Aboriginal health is obviously limited to only those cultural variables included in the APS. As such, they may not be the most appropriate variables. The Wald statistics (not shown) for the cultural variables suggest that language should not have been included in the models for chronic con-

ditions and self-rated health while traditional practices should not have been included in the models for activity limitations and self-rated health.⁷ It is also possible that other important cultural determinants of health have been omitted. For example, while the APS measures the utilization of traditional healers, it does not take into account other traditional healing practices (e.g., the use of sweatlodges) (see Waldram 1993, 1997; Waldram et al. 2006). While the results are relevant for demonstrating the significance of culturally specific determinants

⁷In simplest terms, a Wald statistic is calculated for the variables in a logistic regression model to determine whether a variable should be removed. If for a particular independent variable the Wald test is significant, then we can conclude that the variable should be included in the model. If the Wald test is not then the variable (or group of variables) could be removed from the model (see Agresti 1990).

of health, a more extensive set of cultural determinants of health may be needed for inclusion in future versions of the APS. In addition, qualitative research methods would enable a deeper understanding of this important aspect of health.

A fifth limitation relates to the complexity of defining and identifying the urban Aboriginal population in Canada. In particular, high rates of mobility have accompanied the urbanization of the Aboriginal population and extensive research has documented migration flows back and forth between reserves and urban areas (what the literature refers to as “residential churn”) (Cooke 1999; Cooke and Belanger 2006). Movement back and forth between reserves and urban areas is most common amongst Registered Indians (Clatworthy and Norris 2007), accounting for 40 percent of their total migration flows. Interestingly, migration from urban areas to reserves is higher than migration from reserves to urban areas among the Registered Indian population (Norris et al. 2003b). High levels of migration have also been documented among non-Registered Indians and Métis between urban areas, from urban to rural areas, and from rural to urban areas, accounting for 90 percent of migration flows (Clatworthy and Norris 2007). The Aboriginal population changes residence at a much higher rate than the non-Aboriginal population, especially in urban settings. Between 1991–1996, over 40 percent of the urban Aboriginal population changed residence within the same community compared with 25 percent of the non-Aboriginal population (Norris et al. 2003b). Clatworthy and Norris (2007) note that between 2000–2001, the residential mobility rate was only 96 per 1000 among non-Aboriginal people, 198 per 1000 for the Métis, and almost 250 per 1000 among Registered Indians. High rates of residential mobility and residential churn (i.e., high rates of movement to and from reserves and urban areas, between urban areas, and between urban and rural areas) among the Aboriginal population have significant implications for urban Aboriginal health research. High levels of movement between residential locations may make it difficult to capture this segment of the population for participation in research. Furthermore, while much research has documented high rates of mobility and residential churn, with the exception of

Skelton’s work (2002), little is known about the implications of this movement for the planning, delivery, and use of services (e.g., health care) or broader implications for health and well-being. This represents a very important area of future research.

Finally, the urban Aboriginal population also remains marginalized compared to the non-Aboriginal population. One result of this is that the urban Aboriginal population experiences much higher rates of homelessness (Canada 1996b, 2001c; Stokes et al. 2004). However, data for the APS were collected from individuals living in private dwellings. Therefore, the most marginalized of the urban Aboriginal population (i.e., the homeless, those living in shelters, or in institutions) are not captured by the survey. Thus, the results may overstate the positive health status of the urban Aboriginal population as a whole and overlook determinants of health important for the most marginal subgroups of the population.

Despite these limitations, the results of the research provide important insight into the health of Canada’s urban Aboriginal population. In particular, similar to the findings of Tjepkema (2002), the results reveal disparities in health status (as measured by the percent of the population reporting fair/poor health and an activity limitation) between the urban Aboriginal and non-Aboriginal population. However, the disparities revealed in this research are not as large as those shown to exist between the on-reserve Registered Indian population and the non-Aboriginal population at large (see Waldram et al. 2006). As such, these findings suggest that urban Aboriginal people in Canada may enjoy better levels of health than the on-reserve Registered Indian population, although further research is needed to test this hypothesis. In addition, it is interesting to note that, while a lower percent of urban Aboriginal people report two or more chronic conditions compared with the non-Aboriginal population, a higher percent report an activity limitation. This may be reflective of undiagnosed chronic conditions within the Aboriginal population, which in turn may be influenced by lower levels of access to secondary health care services (e.g., specialists). While a similar percent of both populations report at least one contact

with a doctor in the past year, the total number of physician visits may be lower within the Aboriginal population. Certainly, the observation that almost one quarter of the urban Aboriginal population have consulted a nurse in the past 12 months in comparison with only 9 percent of the non-Aboriginal population may indicate overall lower levels of physician use by the urban Aboriginal population. Unfortunately, the APS does not collect data on frequency of health care consultations so this hypothesis cannot be tested.

The logistic regression models revealed a number of similarities in the determinants of self-reported health, chronic conditions, and activity limitation between urban Aboriginal and non-Aboriginal people. In particular, age, education, income, employment, health care use, and health behaviours (smoking and drinking) are shown to be significant determinants of health in both populations. All represent important and widely acknowledged social determinants of health (Canada 2003b). However, some differences were observed. For example, gender is a significant determinant of self-rated health in the non-Aboriginal but not the Aboriginal population. Furthermore, some categories of variables (e.g., high school education, occasional smoker) are not significant for the Aboriginal population but are for the non-Aboriginal population. While these represent very interesting and subtle differences between the two populations, it is beyond the scope of this analysis to offer an explanation for this difference, but the findings warrant further consideration.

Place of residence is a significant determinant for two health outcomes for the non-Aboriginal population but only for activity limitation in the Aboriginal population. It is especially notable that place of residence shows opposite effects for activity limitation between the two populations. Specifically, non-Aboriginal people who live in smaller urban areas are more likely to report an activity limitation than non-Aboriginal people living in CMAs while Aboriginal people who live in smaller urban areas are less likely to report an activity limitation than Aboriginal people living in CMAs (see Table 5). These findings indicate that place of residence (defined as the type of urban area) is an important determinant of health for the non-Aboriginal population with non-CMA locations appearing

to have a negative impact on health. However, among the Aboriginal population, place of residence appears to matter less. In interpreting these results it is important to note that there is no clear distinction between place of residence and urban vs. reserve lifestyles. That is, for the Aboriginal population, living in an urban area is not necessarily congruent with an off-reserve lifestyle per se (i.e., less engagement with traditional activities, etc.) especially in cases where reserves are located within the boundaries of large CMAs. These issues merit further consideration and research to determine the pathways through which different types of urban settings impact health.

Finally, the effect of age is much stronger for the Aboriginal population. Within the Aboriginal population, the age results may reflect their overall lower levels of life expectancy and the fact that they experience poorer levels of health beginning at a much younger age (and thus, for longer periods of time) than the non-Aboriginal population. That is, because the older cohorts of the Aboriginal population have experienced morbidity for a longer period of time than younger cohorts, this may explain why the odds ratios are increased in magnitude. The age-related findings also raise questions about the health of older Aboriginal Peoples. However, due to limitations in using the PUMF of the APS, we are unable to compare the health of Aboriginal and non-Aboriginal seniors (those 65 years of age and older) as a separate category (i.e., the oldest age group available for analysis is 55+). Interestingly, research conducted by Wilson et al. (2010) has shown that, as the Aboriginal population ages, their health status begins to converge with the non-Aboriginal population.

The results of the logistic regression models appear to show that the health of the urban Aboriginal population in Canada is shaped by the same determinants of health as the non-Aboriginal population. While both populations share common health determinants, the research also demonstrates the significance of a number of cultural factors in shaping the health of the urban Aboriginal population. In particular, the results suggest that many cultural factors are actually health promoting. For example, in general, activities such as hunting and fishing are associated with a lower likelihood of being

unhealthy. The APS asks about participation in these activities for food, pleasure, commercial, and medical/ceremonial reasons. On the one hand, it is possible that such activities are indirectly related to health because they represent a source of food or income for some individuals. On the other hand, they may be more directly related to health because they are being done specifically for medicinal reasons. Interestingly, the results also show that individuals who gathered plants are less likely to report fair/poor health but more likely to report chronic conditions and an activity limitation. It is possible that individuals gathering plants may be doing so because they are unhealthy (i.e., they have a chronic condition and traditional plants and foods gathered may be used as part of traditional healing practices). In addition, research conducted by Wilson (2003) demonstrates that many First Nations people perceive the actual act of participating in cultural activities such as hunting and gathering plants to be beneficial for health (see also Gone 2008). This may explain why gathering plants, hunting, and fishing are associated with a decreased likelihood of reporting fair/poor health status. These hypotheses require further research and perhaps the use of qualitative methods to understand the complexity of the links between traditional activities and health. Another particularly interesting finding is that individuals who contacted a traditional healer are less likely to be unhealthy than those who have not. In contrast, those who consulted a nurse or doctor are more likely to be unhealthy. These results suggest that conventional health care may be used when people become sick whereas traditional healers play an important role in maintaining health, thereby representing an important aspect of health promotion. Overall, the results demonstrate the relevance of traditional activities and traditional approaches to health in urban settings. Furthermore, they support the arguments of Waldram (1990a, 1990b) and others (Benoit et al. 2003; see also Waldram et al. 2006) that cultural approaches to healing remain important for Aboriginal people living in urban areas. Certainly, the findings suggest a need to support Aboriginal people's access to culturally relevant and appropriate approaches to healing within Canada's cities.

In summary, this research quantifies the disparities in health that exist between Canada's urban Aboriginal and non-Aboriginal populations. The existence of these disparities demonstrates a need for future research to identify those factors that may be contributing to the observed differences in health, especially in cities with relatively large numbers of Aboriginal people. While this research also shows that the more widely recognized social determinants of health are significant predictors of urban Aboriginal health, it also demonstrates the importance of culturally specific determinants of health (see Smylie and Aboriginal Health Issues Committee 2001; Adelson 2005; Richmond and Ross 2009). Despite the fact that the Aboriginal population in Canada is becoming urban-based, there has been little focus on this segment of the population. Over 20 years ago, Shah and Farkas (1985) cited a serious lack of information on urban Aboriginal Peoples in general and their health care behaviours and needs in particular. In 1996, the Royal Commission on Aboriginal Peoples in Canada (RCAP) identified urban Aboriginal issues, particularly those related to health and health care, as requiring more attention and research (Canada 1996b). Fifteen years have passed since the Royal Commission's call for more attention towards the urban-based population yet research and policy on Aboriginal health remains focused on the reserve-based population while overlooking the needs of urban Aboriginals (see Young 2003; Wilson and Young 2008). Obviously the focus on reserve-based populations is tied to need and differentiated access to health care in reserve settings. We are not arguing that scarce Federal resources be shifted away from reserve populations. Rather, we suggest that provincial governments, who historically have been reticent to develop Aboriginal-specific health policies (but see Ontario Ministry of Community and Social Services 2008), should begin to acknowledge the unique health needs and determinants of health of Aboriginal Peoples living in cities and towns.

This study has begun to fill an important knowledge gap, as it constitutes one of the few studies aimed specifically at examining the health of urban Aboriginal Peoples. As the urban Aboriginal population in Canada continues to grow, so too will their health and health care needs. Further research is therefore needed to

understand the complexity of urban Aboriginal health and its determinants, as well as to ensure that Aboriginal health and healing needs are met within urban environments. Without growth in current knowledge of the health status and determinants of health of urban Aboriginal Peoples, there will be little room for shaping urban health policy that is aimed at reducing both health disparities and health inequities (Adelson 2005).

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