



The determinants of First Nation and Inuit health: A critical population health approach

Chantelle A.M. Richmond^{a,*}, Nancy A. Ross^b

^a Department of Geography, The University of Western Ontario, 1151 Richmond Street, London Ontario, Canada N6A 5C2

^b Department of Geography, McGill University, Canada

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ABSTRACT

Environmental dispossession disproportionately affects the health of Canada's Aboriginal population, yet little is known about how its effects are sustained over time. We use a critical population health approach to explore the determinants of health in rural and remote First Nation and Inuit communities, and to conceptualize the pathways by which environmental dispossession affects these health determinants. We draw from narrative analysis of interviews with 26 Community Health Representatives (CHRs) from First Nation and Inuit communities across Canada. CHRs identified six health determinants: balance, life control, education, material resources, social resources, and environmental/cultural connections. CHRs articulated the role of the physical environment for health as inseparable from that of their cultures. Environmental dispossession was defined as a process with negative consequences for health, particularly in the social environment. Health research should focus on understanding linkages between environmental dispossession, cultural identity, and the social determinants of health.

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Introduction

In recent years, the health of Aboriginal peoples has become a priority among Canadian health researchers (Adelson, 2005; Reading and Nowgessic, 2002). To date, however, research in this area has tended to employ approaches seeking to quantify rates of disease and mortality, with less attention paid to the processes underlying the summary measures of population health. While it is important to characterize the health inequalities borne by Aboriginal Canadians, these observations have not transformed into common understanding of the underlying causes of inequality, such as environmental dispossession. We use the term environmental dispossession to refer to the processes through which Aboriginal people's access to the resources of their traditional environments is reduced. In the Aboriginal health literature, little emphasis has been placed on the health effects of environmental dispossession, nor of the ways it can produce and sustain health inequalities over time (Waldram et al., 2006; Adelson, 2005). In this paper, we draw from a critical population health approach (Labonte et al., 2005) and interviews with 26 Aboriginal Community Health Representatives (CHRs) from rural and remote First Nation and Inuit communities across Canada to

conceptualize the determinants of Aboriginal health, and to examine how environmental dispossession fundamentally undermines health and its determinants in these populations.

Environmental dispossession and Canada's Aboriginal peoples

Aboriginal populations in Canada are defined constitutionally as First Nations, Métis and Inuit, and the 2006 Census indicates that there are now more than 1 million Aboriginal peoples in Canada. Just over half of the Aboriginal population resides in urban centres in Southern Canada, while the remainder lives on Indian reserves, Inuit communities and other rural and remote areas. Through historical circumstance and geographic location, Canada's Aboriginal communities have experienced the full force of the federal government's assimilationist policies, many of which have left this population at the political, social and economic fringes of Canadian society (Adelson, 2005; Warry, 1998). As recounted by the Royal Commission on Aboriginal Peoples (RCAP, 1996, V1), Aboriginal peoples are physically displaced people. At the time of colonization, Aboriginal peoples were denied access to their traditional territories and in many cases, they were forced to move to new locations selected for them by colonial authorities. Historically, colonial laws and practices were the foundation for the Crown's policy of making treaties with Indian nations for 'peaceful' co-existence

* Corresponding author. Tel.: +1 519 661 2111; fax: +1 519 661 3750.
E-mail address: chantelle.richmond@uwo.ca (C.A.M. Richmond).

and for land for incoming immigrants (Frideres, 1993). Under Section 91.24 of the *Constitution Act*, Canada has the constitutional responsibility for 'Indians and Lands Reserved for Indians' and has administered/managed Indian lands and assets under the *Indian Act* since the 1870s (Miller, 1989).

The land is a fundamental component of Indigenous culture, and central to the health and wellness of Aboriginal societies. As a result, the physical displacement of Indigenous peoples from their traditional lands and territories, in Canada and around the world, has negatively affected the collective well-being of Indigenous populations. In fact, loss of land is argued to be amongst the most significant factors contributing to culture stress within Indigenous communities (Bartlett, 2003). In the 1950s, for example, the Inuit of Hebron were relocated to Makkovik (what is now Labrador) to provide health services (Brice-Bennett, 1994). Despite the fact that the Hebron were relocated to a community that was home to other Inuit, they were marginalized culturally by their dialect, customs and inexperience with the new environmental surroundings. The relocation triggered significant cultural loss, which led to acute stress and despair by the Hebron. The destruction of family ties and the degrading circumstances of their lives led many Hebron Inuit to drift from community to community as permanently displaced people:

Not only were families separated by having to live in different communities but the recurrent deaths of young people, mature adults and also elderly adults—who were often said to have died from heartbreak over leaving their homeland—broke the spirit of their surviving relatives and left them traumatized in overwhelming and silent pain (Brice-Bennett, 1994, p. 17).

In Canada's early days, Aboriginal peoples were not only displaced physically, but they were also made subject to intensive missionary activity and the establishment of residential schools, the purpose of which was to assimilate Aboriginal peoples into mainstream Canada. These assimilationist activities undermined the social and cultural fabric that is central to Aboriginal identity, as they forbade families from sharing their cultural practices (e.g., dances, ceremonies, language, songs), many of which tied Aboriginal peoples to features of their traditional environments, such as water, plants and animals. Aboriginal people were also displaced politically, forced by colonial laws to abandon traditional governing structures and processes in favour of colonial-style municipal institutions.

In contemporary times, Aboriginal Canadians continue to experience the health effects related to Canada's colonial legacy (Adelson, 2005). Prior to colonization most indigenous societies could be described as subsistence cultures, meaning that the diet and daily nourishment of these Aboriginal groups was provided by the physical resources of their traditional territories. Aboriginal communities, like other vulnerable populations, are more likely to experience the adverse health effects of government and industrial decisions that can dispossess them of their environments (LaDuke, 2002; Krieger, 2001). Perhaps the most direct link between the health of Aboriginal peoples in rural and remote areas and their environment relates to consumption of traditional foods (Kuhnlein and Receveur, 1996). Traditional foods are a fundamental source of essential nutrients, with social and cultural benefits for families and communities. Because a substantial proportion of the Aboriginal diet in rural and remote areas consists of traditional foods, contamination from local and global sources of industrial development can reduce the purity of traditional foods and medicines, all of which impact upon the physical and spiritual health of indigenous peoples (Kuhnlein and Receveur, 1994). Numerous studies conducted in Circumpolar Regions (e.g., Van Oostdam et al., 2005), for example, reveal that

due to anthropogenic activities, environmental contaminants (e.g., mercury and PCBs) are entering the traditional food systems (e.g., fish, game and plants) of Indigenous populations. However, as the consumption of traditional foods is often an economic necessity, contamination raises issues that can extend beyond nutritional and health problems. Due to the poor economic conditions that exist among many Indigenous populations, the consumption of traditional foods is an inexpensive and ideal alternative to store-bought food. As a result, contamination does not only pose significant risks for physical health, but it can present a risk to the health of local economies as well. One prolific example that details the adverse health and social consequences of environmental contamination among Aboriginal peoples in Canada relates to the mercury contamination experienced by the Ojibway community of Grassy Narrows First Nation in North-western Ontario (Wheatley, 1997; Shiklynk, 1985). Grassy Narrows is located 180 km downstream from a chlor-alkali plant that pumped greater than 10 tons of toxic, mercury-laden effluent into the English-Wabigoon River in the late 1960s and early 1970s (Canada, 1999). Grassy Narrows residents were exposed to methylmercury mainly through fish consumption (Canada, 1999), and results from a 10-year mercury exposure sampling programme indicated some of the highest human mercury levels in Canada among residents of Grassy Narrows (Wheatley and Paradis, 1995). The contamination had significant impacts on Grassy residents, who had long relied on the fishery as a means of food and as a cultural and economic base. Community members experienced disruption of lifestyle and eating patterns, and a range of socio-cultural and economic processes (Wheatley, 1998). Perhaps the most destructive effect of the contamination was the increase in violence and boredom related to change in lifestyle, including unemployment, feelings of powerlessness and dependency (Wheatley, 1998; Shiklynk, 1985), and the assault on cultural identity associated with severed ties to their physical environment.

As detailed in this section, the identities and cultures of Aboriginal peoples are intimately bound to their traditional lands and environments. The health of the land and the health of the community are thought to be synonymous (Brightman, 1993), nurtured through relationships to the physical environment and the cultural, spiritual, economic, political and social roots it provides (Canada, 1996). In light of the knowledge that the health of Indigenous peoples is made increasingly vulnerable to processes of environmental dispossession, however, few researchers have examined the various dimensions that link Aboriginal peoples to their physical environments, nor of the health consequences as these ties are severed (Richmond et al., 2005; Adelson, 2003; Wilson and Rosenberg, 2002; Wheatley, 1998; Garro, 1995; Shiklynk, 1985; Thouez et al., 1989; Hagey, 1985). In this paper, we highlight these processes in the context of rural and remote First Nation and Inuit community contexts. Before outlining our methods and analyses, we turn to a discussion of the population health approach, which serves as the theoretical framework underpinning this study.

A critical population health approach

Population health refers to a conceptual framework for thinking about why some people are healthier than others (Young, 1998) and urges health research agendas to consider dimensions beyond health care (Frank, 1995) such as education, employment and social support. Population health recognizes that socio-economic and environmental structures can support or constrain community health (Raphael, 2001). Population health put the wheels in motion for an international research programme that

Table 1
Official list of Canadian health determinants

Income and Social Status
Social Support Networks
Education
Employment and Working Conditions
Social Environments
Physical Environment
Personal Health Practices & Coping Skills
Healthy Child Development
Culture
Gender
Health Services
Biology and Genetic Endowment

Source: F/T/P Advisory Committee on Population Health (1996).

recognizes that social and economic forces can determine the health of populations (Raphael and Bryant, 2002); the framework was sealed into Canadian health policy in the late 1990s when Health Canada officially adopted population health promotion frameworks for programme funding and accountability in the late 1990s (Health Canada, 1996). Canada recognizes 12 health determinants (Table 1).

Despite the breadth of this framework, it is not without its critics. A significant critique relates to the framework's inability to consider the theoretical contexts within which the determinants of health and social inequalities are produced and structured (Labonte et al., 2005; Coburn et al., 1996). Some suggest the framework over-emphasizes the identification of socio-economic determinants, and discounts the social-structural influences that initially produce those particular determinants (Coburn et al., 2003; Hayes, 1999), for example by focusing on income inequality as a determinant of health rather than seeking to understand the drivers of income inequality (e.g., changes to the tax and transfer system or returns on post-secondary education in the labour market). Critics relate these shortcomings to a fixation with positivist methods, including large-scale survey analysis and categorical approaches (Labonte and Robertson, 1996).

In the context of understanding the determinants of health among First Nation and Inuit communities in rural and remote areas, there are many varied and interlaced determinants, most of which are entrenched in unequal power relations and a history of colonization (Waldrum et al., 2006; Adelson, 2005), processes that some authors have suggested are unexplainable by a traditional determinants of health framework (Richmond et al., 2005; Wilson, 2003; Wilson and Rosenberg, 2002). We therefore turn to a critical population health approach suggested by a group of researchers in the Saskatchewan Population Health and Evaluation Research Unit (Labonte et al., 2005). Labonte et al. (2005, p. 10) outline the twinned goals of critical population health research to be:

- (1) a thorough going deconstruction of how historically specific social structures, economic relationships and ideological assumptions serve to create and reinforce conditions that perpetuate and legitimize conditions that undermine the health of specific populations; and
- (2) a normative political project that, as a result of deeper understanding, seeks the reconstruction of social, economic and political relations along emancipatory lines.

With reference to health, Labonte et al. (2005) suggest that such an approach should work toward the creation of conditions that improve the health and well being of all people, and equity in the distribution of conditions that improve the health and well-being of all people. In the context of our research, we draw from

such an approach to examine how processes of environmental dispossession work to fundamentally *undermine* and *reduce* the *quality* of health determinants in rural and remote First Nation and Inuit communities. Indeed while the literature on Aboriginal health has made significant strides in describing the inequitable distribution of poor health and untimely mortality among Aboriginal Canadians in comparison to the general population, the discourse examining how these health disparities are produced—and sustained over time—remains relatively understudied. We argue that environmental dispossession is at the root of the health and social inequalities borne by rural and remotely located First Nation and Inuit communities in the modern context. The outcome of forced assimilation has led to a decrease in the quality of those very factors that support health of populations living in rural and remote First Nation and Inuit communities. In the following analysis, we map out how these processes work in the everyday context to shape the health and social realities of these communities.

Methods and analyses

The research described in this manuscript contributes to a larger mixed-methods study seeking to understand how Canadian Aboriginal peoples' health is influenced by varying aspects of their social environments (Richmond, 2007a). Earlier quantitative findings identified social support as a strong dimension and determinant of Aboriginal health (Richmond et al., 2007a,b). The quantitative stage of this research left important questions unanswered, and we recognized the need to draw from more interpretive approaches for better understanding how one's social embeddedness within their families and communities can impact health.

This paper draws from narrative analysis of interviews with a national group of 26 First Nation and Inuit CHRs, which occurred in 2005. Across Canada, there are roughly 1000 First Nation and Inuit CHRs present in 577 First Nation and Inuit communities, and 90% of the CHRs are women. CHRs were chosen as interviewees for this study through a purposive sampling strategy, the strength of which lies in the selection of information-rich cases (Miles and Huberman, 1994). CHRs are front-line community workers who perform a broad range of health-related functions ranging from environmental health to health delivery, medical administration, counseling and home visits, education and community development, and mental health. These services are critical in rural and remote First Nation and Inuit communities, many of whom do not have a permanent physician. CHRs are well integrated within their community's everyday context and they hold localized, cultural knowledge of health and wellness. In 1986, the National Indian and Inuit Community Health Representative's Organization (NIICHO) was formed following the first national CHR conference; NIICHO is accountable to political leaders in First Nation and Inuit communities through their own CHRs.

Through consultation with the Executive Director of NIICHO, which included numerous telephone calls, e-mails and meetings, our request to conduct research with the CHRs was formally supported. Collaboratively, we came to agreement on a number of open-ended questions to be explored in the interview (see Table 2); these interview questions were also based on the academic literatures of Aboriginal health, population health and social support. A detailed description of the process through which this research relationship was formed has been described elsewhere (Richmond and Ross, in press). NIICHO invited the lead author to attend their Annual General Meeting (AGM) in June 2005 to initiate the data collection. The lead author's attendance at the AGM was important for building trust, and establishing a

Table 2
Interview checklist

Defining health

- What does good health mean to you? Poor health?
- Would you say that people in your community are healthy? Why, why not?
- Is the health of people in this community better today that it used to be in the past? Why do you think that is?
- Can you think of someone in your community that has good health?
- What is it that makes that person healthier than others?
- Do you think that having good social support might make someone a healthier person? Why?
- Think of someone in your community with good social support. Would you consider that person to be of good health? Why/ Why not? Are there other things that make that person's health good as well?
- How does the health of your community compare to that of other communities (north versus south, isolated, urban, etc.)
- Are the differences related to the 'place' of the communities, or would you say it is the people within the communities?

rapport with the CHRs, as she attended the conference for the full 3 days. By the end of the AGM, the lead author had interacted with 39 CHRs from various First Nation and Inuit communities representing all provinces and territories, including three Arctic regions, all of whom indicated their interest in participating in this research. In the month following the AGM, in-depth interviews with 25 CHRs occurred on the telephone and one interview occurred face-to-face. Given the broad geographic dispersion of the recruited CHRs (see Table 3), conducting face-to-face interviews was not feasible. The major advantage of telephone interviews over face-to-face interviews is cost efficiency (Marcus and Crane, 1986; Fenig et al., 1993), and in this study, it allowed a breadth of CHR voices to be captured from First Nation and Inuit communities in various rural and remote areas across Canada. CHRs were provided with copies of the interview checklist before the interview, and informed consent was sought prior to all interviews as was mandated by the Ethics board of McGill University.

The lead author, a First Nations researcher, conducted all interviews from June to August 2005, and the interviews ranged in length from 45 to 90 min. All interviews were conducted in English and were tape-recorded, with permission by the CHRs. To maintain consistency, all interviewees were asked the same questions in the same order and the CHRs were encouraged to draw from their experiences, perceptions and personal stories to illustrate their understandings of the topics covered in the interview. The fact that the interviewer had met with all CHRs prior to their interviews was critical for building trust, and in fact, many of the CHRs expressed an increased level of security in sharing their stories with the lead author, herself a First Nations researcher. Interviews continued until a point of data saturation had been achieved, at which point, no new information surfaced.

Interviews were transcribed into electronic format and mailed to all participating CHRs for their input or clarification. None proposed changes. The interviews were analysed primarily by the lead author and a research assistant. The data were organized through the method of coding, a technique used to connect qualitative data, issues, interpretations and interpretations (Miles and Huberman, 1994). Coding has also been labelled as content or narrative analysis (Berg, 1998). Narrative analysis is a way of interpreting a conversation or story in which attention is paid to the evaluations of the speaker and their local context (Wiles et al., 2005; Williams, 2003; Popay et al., 1998; Kearns, 1997). The first step of our analysis of the CHRs interviews entailed careful labelling and sorting of the data into themes and sub-themes, mainly around the identification of the determinants of health as they were defined by CHRs. In this stage of analysis, the utility of

Table 3
Community characteristics of CHRs

Geographic region	First Nation/Inuit ^a	Location ^b
Nunavut	Inuit	Remote
Labrador	Inuit	Remote
Manitoba	First Nation	Remote
Yukon	First Nation	Remote
Northwest Territories	First Nation/ Métis	Remote
Northwest Territories	First Nation/ Inuit/Métis	Remote
Ontario	First Nation	Remote
Quebec	First Nation	Remote
Quebec	First Nation	Remote
British Columbia	First Nation	Rural
British Columbia	First Nation	Rural
British Columbia	First Nation	Rural
Alberta	First Nation	Rural
Alberta	First Nation	Rural
Alberta	First Nation	Rural
Saskatchewan	First Nation	Rural
Ontario	First Nation	Rural
Ontario	First Nation	Rural
Quebec	First Nation	Rural
Quebec	First Nation	Rural
Quebec	First Nation	Rural
New Brunswick	First Nation	Rural
Nova Scotia	First Nation	Rural
Prince Edward Island	First Nation	Rural
Quebec	First Nation	Rural/urban

^a Refers to the community area served by the CHR.

^b Rural areas as sparsely populated lands lying outside urban areas (i.e. those with population densities lower than 400 km²), and remote areas refer to communities in the territories, and/or those CHRs who work in nursing stations or outpost settings. Urban areas are those adjacent to and/or connected (via transit, commuter patterns and economic exchange) with census metropolitan area or metropolitan area.

narrative analysis shone as a key analytic strategy for understanding CHRs perceptions of the determinants of health in their communities, and particularly so for enabling their stories about the complicated ways in which environmental dispossession has worked to affect the quality of these health determinants. Narrative analysis provides a framework through which researchers can understand 'the contingent, the local, and the particular' (Wiles et al., 2005), thereby connecting the speaker to varying levels of social context at once. In this research for example, the voice of the CHR was important as it enabled the articulation of both professional and personal perceptions around the determinants of health.

Results

Determinants of health

CHR identified six health determinants: balance, life control, education, material resources, social resources and environmental/cultural connections. *Balance* refers to maintenance of the mental, physical, emotional and spiritual elements of a person. Emphasis was placed on physical health status, including the importance of eating nutritious traditional foods (e.g., moose, fish), maintaining a healthy body weight and being physically active:

[Good health] is about being very active. Having a healthy lifestyle and a healthy body... Being physically fit also includes nutrition. That is the number one thing that we need is good

nutrition, because over here we tend to eat a lot (laughs) (**Norma**).

Life control was defined as one's ability to take care of him or herself. Respondents reported that being healthy did not necessarily mean living disease-free, but that being able to manage disease is fundamental to living a healthy life. Being mobile and having the ability to make decisions was described as synonymous to life control. *Education* was also declared a vital health determinant. It was broadly defined to include environmental and cultural knowledge, access to high-quality educational facilities (i.e., school, daycare), as well as health promotion activities that educate community members on the benefits of healthy eating, prenatal health and cultural activities, for example:

... We have all kinds of pamphlets in our health centre that tell people about healthy living. Today there is better access to healthier lifestyles and ideas about what to do [to achieve a healthy lifestyle]. Young mothers are given ideas about healthy pregnancies, about cooking nutritious foods that they didn't have a few years ago (**Clara**).

Another key health determinant was *material resources*, through which respondents referenced the importance of work, the opportunity to earn a salary and to provide for his/her family. *Social resources* refer to the breadth and quality of one's social ties, and the ability to rely on friends and family in times of need. CHRs place particular emphasis on the importance of social support for enhancing self-esteem and as it encourages community members to participate in health-promoting activities:

... Social supports are really important for health... if you are trying to quit drinking, or lose weight, or exercise more, a buddy system is good. Because those days that you don't feel like doing it, they are there to encourage you (**Michelle**).

These five determinants reflect those found among Canadians, generally (Table 1). It was within the determinant of health described as *environmental/cultural connections* wherein the determinants of First Nation and Inuit health, as reported by the CHRs, departed the Canadian list. CHRs conceptualized environment and culture as a single health determinant, which differs from Health Canada's official listing wherein culture and environment form two separate health determinants. They defined *environmental/cultural connections* less categorically than other determinants and more so as a process defining people's abilities to draw resources from the environment in the maintenance of culture and way of life, which Debbie explains is vital for community well-being in the North:

In my community, we are more northern and we have traditional foods that we depend on. We travel on the land, we socialize more together, and we know each other, and that is good. We always go on word of mouth, if somebody is going through this or that, and this means everybody gets involved. We are lucky to have that (**Debbie**).

CHRs pointed unanimously to reduced access to environmental resources and shifting culture as a source of decline in the quality of the five other determinants described above (i.e., balance, life control, education, economic resources and social resources):

People here have lost their traditional way of life... We lost our traditional way of life and I think that's why people have poor

health now, because we don't eat our traditional foods or do things like we used to (**Norma**).

In the following section, we draw from the voices of the CHRs to illustrate how environmental dispossession has altered the quality of the health determinants identified above.

Environmental dispossession and the quality of health determinants

Life imbalance

CHRs made explicit connections between severed ties to the physical environment and how the physical, mental, emotional and spiritual elements composing health have fallen out of balance in their community contexts. There was general agreement that reduced consumption of traditional food and a shift toward more sedentary lifestyle is leading to poor health:

For a long time my community didn't have access to a lot of services, because the closest town is about 80 kilometers away. We were very self-reliant. More recently, as we are relying on cars and outside resources, the community has gotten away from things like gardening or cutting wood, and all those other healthier lifestyle practices that they used to do a long time ago, that kept them active and physically in shape (**Michelle**).

Limited access to the physical environment and a decline in the skill needed to harvest and procure traditional foods means that community members find it more and more difficult to access traditional foods such as fish, moose and deer, and there has been a significant shift to store-bought foods. Coupled with decreased access to traditional foods, another dietary challenge for many remotely located communities relates to the prohibitive cost of fruits and vegetables, most of which are shipped by boat or plane. CHRs remarked that once these foods arrive in the communities, their quality is often much reduced. As well, some community members will 'reserve' the foods they want ahead of time, thereby further reducing the quantity and quality of foods available to community members that may not have the same purchasing power:

We live in a remote area, and the food that comes up here is very expensive. So we cannot always have fresh food, like even when vegetables do come up here, they are sometimes not even fresh. And the fresh food that does come in goes very fast sometimes. If you wait, you will end up with nothing fresh (**Julie**).

Many community members will rely instead on non-perishable, processed foods. These foods are inexpensive and keep for a long time.

Spirituality was mentioned as another important element in maintaining life balance. Over the years, spirituality has formed a contested issue in many Aboriginal communities and families. As discussed earlier, the church was originally introduced to Aboriginal communities as a means of assimilating them from their 'pagan' beliefs and into mainstream Canadian (i.e., Christian) values. Today, the church remains a key fixture of many Aboriginal communities, however, traditional Aboriginal forms of spirituality—those which connect people to their lands, to mother earth—is also important. CHRs indicated that such traditional forms of health and healing are being practiced by smaller numbers of people and there are often strong divisions within communities as some members prefer the church over traditional ceremonies, and vice-versa. CHRs described how traditional songs

and ceremonies are being lost or forgotten altogether, as these long-held cultural values are regarded as unimportant, or are not passed down by parents and other family members:

For traditional ceremonies, or in regards to the lands, there are a group of people who are very traditional and try to incorporate our traditional culture back into the community. But again, not everybody is traditional, so it's sort of hard in a way to get people to understand. And like, some people just don't have that knowledge or they are not interested. Their family or their parents have not passed anything on to them, so they are without anything to guide them (**Emma**).

Loss of life control

CHRs noted that community members have become less self-reliant over the past several years, and they remarked that dependencies on the Canadian government and local band councils for health and social services have grown immeasurably:

At times, community members are really dependent on us [health services]...They don't know how to help themselves. We are trying to encourage people to take control of their life, and what they need, and to seek out other sources of support and assistance. We are trying to kind to give the control for their health, and their life, back to them (**Holly**).

CHRs noted that community members were at one time fully responsible for maintenance of their health and management of disease, as they drew from the knowledge of their elders, medicine men and midwives, many of whom have used traditional medicines, such as roots, herbs and plants to treat various ailments for generations. With the introduction of government health services and the abolishment of traditional forms of healing, such as the Sun Dance, the Shaking Tent and other sacred ceremonies (see [Waldram et al., 2006](#)), the role of traditional healers within Aboriginal health care has been diminished. These assimilationist policies have led to a reduction in self-esteem by individuals, and in their abilities to care for themselves and their communities in times of illness:

I think there is a lack of, a sense of um, self esteem in people. A lot of times you see it from residential school, like the impacts, and the lack of parenting skills, and the addictions, and stuff like that, that have resulted from that traumatic experience and it seems people are not sure how to move on (**Meghan**).

These include the shift in lifestyle from active to sedentary, decreased participation in traditional ceremonies, and the reliance on government for its health care needs.

Changing forms of education

Environmental change has reduced educational opportunities within First Nation and Inuit communities in rural and remote areas. CHRs stated that at one time, the greatest education students received was that associated with being out on the land. As these opportunities are reduced over time, however, the cultural exchange, language and traditions associated with the environment are also diminished. First Nation CHRs indicated concern that the quality of education received by students enrolled in on-reserve is subordinate to that of non-Aboriginal communities:

The teachers are not as good here, and I feel that we should have that option to send our children where we want to.... I

would love to send my children to school [in the nearby town], and incorporate them into mainstream society with all different cultures, rather than having them go to school on reserve and be segregated as they are (**Emma**).

In many First Nation and Inuit communities, the Internet and other global media (e.g., radio, TV) have become significant sources of information and communication, particularly in remote communities. Such tools have invariably enhanced opportunities for learning—for instance, as teachers in remote communities may draw upon resources of the Internet to teach their students more effectively. The use of the radio and other media has been used to educate community members on their health:

Recently there was a diabetes video made. Aboriginal People's Television Network traveled to each community, interviewed people, looked at their lifestyles and related it to diabetes. We've lost some things in the process [of colonization], our language, we've lost our connection to the land, people don't go out on the land as much. I think the key thing here is that people are recognizing, and are trying to do something about it, trying to bring it back. I think the media can be a powerful tool that can be used to educate and increase awareness (**Annie**).

CHRs remarked that the impact of the Internet has also had an isolating effect on youth in their communities. In general, youth now spend more time alone on computers and less time in play and physical activity:

People have a lot more knowledge of how to improve their health, to get better, and we are more exposed to the television and the media, so we are a more worldly I guess. But in some aspects it has its downfall is too. For instance, children are no longer respectful, like they no longer respect their elders. They are not as active; they spend a lot of time in front of the TV or playing board games (**Annie**).

CHRs indicated that there is a pandemic of obese and overweight children, and they point to inactivity as a major source of the problem, particularly in the summer months, when children are not in school:

No, the kids are not very active. Because they always want to play those Nintendo games, and all those computer games. And eating junk food. Sitting inside your house I guess, and the kids are always playing because the school year is over right. So they are just sitting inside (**Nicole**).

Lacking material resources

The clearest conceptual pathway connecting poor health with environmental dispossession arises through limited opportunities for economic development in First Nation and Inuit communities. Aboriginal communities continue to face the highest rates of unemployment in Canada:

The main social problem here is a lack of jobs... The lack of jobs and housing would have to be the two major ones. In the community there is no place to work (**Delores**).

Echoing Delores's comments, Michelle states that the social structure of a community can proliferate the unequal distribution of resources in the material environment, for instance as resources (e.g., jobs, money, opportunities) flow within friends and families, but not between them. Families with greater access to power, material resources and political clout are therefore in a better

position to share such resources with their social networks, while those with less access to jobs and income are often trapped within a cycle of unemployment that can be difficult to climb out of:

The main employer is the band, and there are only so many full time jobs. So the people in those families are financially secure, whereas other people have to rely on seasonal jobs for their families, and then if you have a larger family and you have a seasonal job, by the time you start paying off your bills it is time for a layoff again. It's like a vicious cycle, and our community members really struggle with that (**Michelle**).

In terms of accessing employment opportunities outside their communities, lacking education can act as a significant barrier to employment—particularly in more remote locations wherein very specialized skills and training may be necessary for the type of work available, such as diamond mining in the Northwest Territories. In many communities, CHRs remarked that the prevalence of unemployment—even if it is only seasonal—has become a normalized feature of community life.

As mentioned in the discussion around *life control*, CHRs noted a growing tendency for community members to rely on the government for financial help. They expressed concern that such dependencies can trigger feelings of competition, resentment and powerlessness, and these feelings may be exacerbated by the perception that access to band-related jobs and resources are unfairly distributed. This claim reverberated strongly among CHRs and they noted that the poor material circumstances of their communities strongly shape the quality of their local social environments.

Strain on social life

CHRs described the health effects of environmental dispossession to be most evident within the social environment of their communities. CHRs indicated major changes within their community's every day social context, as there is less trust among community members, and increased competition for scarce resources of the material and physical environments (e.g., for jobs, or in obtaining traditional foods from the land):

In my home community, you can still see the volunteering, the community-based or family-oriented events, whereas when I came here I felt very, like it wasn't here you know, that feeling is gone.... I've been trying to make sense of that, and I'm thinking it could be because it's isolated [referring to the location of her home community] and we were closer to the old life, and here, everything is so advanced. They are close to town, they always have activities, you know and there are always prizes or whatever. And back home when we have activities it's just to socialize and have fun, and there are not really prizes or any competition. So the competition here in the community is very high (**Margaret**).

As noted in a related analysis (Richmond, 2007b), CHRs described a general decrease in reliance on one another, as 'help' has become more a feature of economic necessity than of community ties and cultural obligations:

If you ask for help, people will usually come around. But it's different today than [it was] in the past. Money has become a factor in everything; its not too often you have somebody helping an elder out like just as a good deed, it will often be because the person is getting money, or because one of the band programs is paying that person to help the elderly (**Holly**).

CHRs mentioned unemployment and drug and alcohol addictions as the most common social problems in their communities. They suggested the cause of this break-down in the social environment to be related to community members' frustration at their inability to generate economic opportunities from the land. They also mentioned that the social divide between families with more and less economic resources is growing, and this is leading to greater frustration and dependence by those on the lower end of the social ladder. CHRs noted that this has affected the types of activities and health behaviours that social groups engage in. For instance, CHRs reported an increase in health-damaging behaviours such as over-eating, alcoholism and drug abuse among many families. In terms of health-promoting behaviours, such as attendance at community events (e.g., health promotion workshops), however, CHRs indicated that they could expect the 'regulars' at their events.

Discussion and conclusions

Consequences of environmental dispossession

This research on the determinants of Aboriginal health was inspired by a frustration with the current base of Aboriginal health literature, which continues to describe inequality of health and social conditions with the general population yet makes little effort to critically examine the processes that underpin these inequalities and contributes to their growth over time. This research was also inspired by calls for critical population health research (Labonte et al., 2005) to work toward the creation of conditions that improve the health and well being of all people, and to promote equity in the distribution of conditions that improve health. We have drawn from a critical population health approach to identify CHRs perceptions of the determinants of health in rural and remote First Nation and Inuit communities, and to further examine the effect of environmental dispossession on the quality of these health determinants. Given the special relationships between Aboriginal peoples and their traditional lands and environments, the consequences of environmental dispossession have had—and continue to have—disastrous implications for the health of rural and remote First Nation and Inuit communities. Our paper documents how this process affects the quality of health in the every day contexts of these communities.

First Nation and Inuit CHRs described the determinants of health in rural and remote communities as balance, life control, education, material resources, social resources and environmental/cultural connections. The first five of these determinants map well onto those recognized by Canadian health policy (e.g., personal health practices and coping skills, education, income and social status, employment, social environments and social support networks). It is within the sixth determinant, environmental/cultural connections, wherein CHRs descriptions of First Nation and Inuit health determinants show divergence from the Canadian list. CHRs articulated the role of the physical environment for health as inseparable from that of their cultures and traditional ways of living. This conceptualization differs from that of Canada's official list, wherein culture and the physical environment form two separate determinants. CHRs defined decreased access to environmental resources and the corresponding shift away from traditional foods and economies as a precursor for life imbalance, loss of life control, changing forms of education, lacking material resources and strain on social life. CHRs spoke about environmental dispossession as a process that affects health in direct and indirect ways. The mercury contamination which occurred at Grassy Narrows provides an example of the direct effect of environmental dispossession (Wheatley, 1997,

1998), as the connection between the community and the resources of their physical environment was severed due to the health risk posed by continued consumption of fish from the river. Environmental dispossession can affect the health of First Nation and Inuit communities in more indirect ways as well, for instance through the legacy of assimilative policy (e.g., the residential school system, missionary efforts), which systematically sought to disconnect Aboriginal peoples from their traditional lands and the cultural, spiritual and economic roots it nurtured for health.

The cumulative effects of environmental dispossession—whether operating in direct or indirect ways—and the compromised cultural connections between land and identity are fundamental contributors of the poor health experienced by rural and remote Aboriginal communities. In a physical sense, the effect of environmental dispossession has led to increasingly sedentary lifestyles and limited food choices, of which CHRs described as pivotal determinants of obesity, diabetes and many other chronic diseases that plague their fellow community members at near-epidemic rates. In the face of changing way of life, CHRs alluded to a sense of powerlessness by community members. The rapid change in lifestyle has caused many to turn to alcohol, drugs and violence as a means of coping with their losses. At the family and community levels, these behaviours have contributed to a decline in the quality of the social environment, which are being shaped increasingly by the despair of a lost way of life, widespread dependence on health and social services, and the negative health behaviours associated with living in poverty (Brice-Bennett, 1994; Adelson, 2005).

An important finding in this study relates to the fact that CHRs did not speak about certain determinants from the Health Canada list, specifically: healthy child development, gender, health services, and biology and genetic endowment. We know that indeed these *are* important determinants of health among Aboriginal peoples as other researchers have previously made reference to them (Mussell et al., 2004; Young, 2003; Browne and Fiske, 2001; Dion Stout and Kipling, 1998; Newbold, 1998). So why did CHRs choose not to speak about these particular determinants? Perhaps the most obvious, albeit superficial, answer relates to the nature of this research, which sought to better understand the social determinants of health in rural and remote First Nation and Inuit communities. We argue that the answer goes deeper than this however. We interpret the CHRs preoccupation with the social determinants of health as a direct message about what they perceive to be fundamental *health need* in their community contexts. As Adelson (2005, pp. S45–S46) has written elsewhere, these health disparities are related to economic, political and social disparities—not to any inherent Aboriginal trait—and because of the *limited autonomy* Aboriginal peoples have in determining and addressing their health needs (emphasis added). That is, with the effects of colonialism and environmental dispossession so ripe in the health and social status of this population, basic needs in relation to the social determinants of health remain largely unmet within these communities (e.g., employment, income, food security). Based on the commentaries of the CHRs, we argue that the determinants of health may not be all that different between Aboriginal and non-Aboriginal Canadians, but that current health and social needs *are* indeed significantly different. There are certain fundamental determinants that we must first address before we can move into the more ancillary health determinants (e.g., gender, biology). The act of acknowledging environmental dispossession and its consequences on health in the Aboriginal context provides a critical first step toward the creation of conditions that may improve the health and well being of Canada's Aboriginal peoples, as was the challenge put forth by Labonte et al. (2005) in their call for the increased uptake of critical population health approaches by

Canadian researchers. Health policies and programmes must acknowledge the rippling affect of environmental dispossession and colonialism on the quality of health determinants in these communities, and they must work to encourage Aboriginal communities to reconnect with the land and resources of their traditional environments, for example by promoting the harvesting of traditional foods, by making space for community gardening practices, or by encouraging local schools to incorporate Aboriginal languages and traditional activities into their curricula.

A limitation of this research relates to the fact that no Métis CHRs were interviewed (in addition to First Nations and Inuit, Métis are Canada's other constitutionally recognized segment of the Aboriginal population). Nor were CHRs from urban areas included in this research. This study therefore presents perspectives only from First Nation and Inuit CHRs in rural and remote areas, and we can make no inferences about how environmental dispossession has worked to influence health in the Métis or urban areas, nor of Aboriginal communities in close proximity to large, urban areas. Clearly, there is a need for these perspectives to be understood as well. Part of the challenge to creating effective health policy requires understanding of existing health need. In relation to future research, our results point to the importance of drawing from more critical approaches such as that advocated by Labonte et al. (2005), and the importance of understanding how environmental, social and economic processes related to environmental dispossession can extend health inequalities over time. We argue that current population health frameworks may be sufficient for *identifying* summary measures of population health, but for research to affect any positive change in Aboriginal health outcomes, it is necessary that researchers remain critical in the research questions they ask, for example by seeking to understand the underlying processes that can initiate inequality and allow it to manifest in the health and social characteristics of populations over time.

Perhaps most significantly, in the context of reducing health inequality in the Aboriginal context, health policies, health programmes and future health research on the determinants of health in these populations cannot advance without blatant recognition of the complex historical, political and social context that has shaped current patterns of health and social inequality and allowed them to grow to such appalling proportions. That is, as we aim to improve health and social conditions for *all* populations, we must recognize that health policies and health promotion efforts will not be equally effective across all contexts. As the results of this research demonstrate, the health of rural and remote First Nation and Inuit communities are marked by significant upstream determinants and we cannot move forward without an appreciation of the impact of these processes, and a determined effort to understand the mechanisms through which they operate to affect measures of population health. Though we have focused on the example of environmental dispossession in this study, the processes underpinning the formation of Aboriginal health inequalities cannot be narrowed to a single explanation. Rather, reducing these inequalities requires an integrated approach that seeks understanding of various complex processes, including environmental dispossession, cultural identity, and the social determinants of health, and the ways these processes interact to shape health in local places.

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