
INVITED REVIEW

Tackling food security issues in indigenous communities in Canada: The Manitoba experience

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Abstract

Aims: The promotion of healthy living and chronic disease prevention are predicated on the ability of individuals and communities to make healthy choices. Having access to nutritious affordable food is one of the conditions required to make such choices possible but one that is too often not available, especially to families in remote regions of Canada. The present paper reviews food security issues as they pertain to indigenous communities, particularly in northern Manitoba, and describes community and government approaches to tackling food insecurity.

Method: A narrative review was formed drawing on international literature and Canadian research and practice.

Results: Strategies such as those described above have the potential to significantly enhance access to affordable, nutritious food in Northern Communities thereby improving food security, healthy living and preventing chronic disease.

Conclusions: Community-based action combined with structural changes and a supportive policy environment hold out the prospect of changing the conditions of food access that underlie the ultimate success of healthy living and chronic disease prevention efforts. While there appears to be a growing interest in local food production and the reintroduction of traditional foods to the diet, an important key to successful change is the engagement of youth, whose food habits and preferences have been heavily influenced by mainstream commercial food culture.

Key words: Canada, community development, food policy, food security, indigenous populations.

Introduction

Health is largely determined by social, economic, political and environmental circumstances. The World Health Organization (WHO) states that ‘The social conditions in which people live powerfully influence their chances to be healthy. Indeed, factors such as poverty, food insecurity, social exclusion and discrimination, poor housing, unhealthy early childhood conditions and low occupational status are important determinants of most of disease, death and health inequalities between and within countries’.¹

This is especially so for indigenous populations around the world, as noted by McGill University’s Centre for Indig-

enous People’s Nutrition and the Environment (CINE). ‘Indigenous Peoples are among the most marginalized and disadvantaged populations in both developed and developing countries. With cultural homelands in the most rural areas of developing regions, they experience common problems in relation to their traditional food systems, food security and health’.²

From both health policy and population health perspectives, current nutrition concerns centre around the two inter-related issues of food insecurity and obesity. While obesity points to issues around over-supply of cheap energy-dense food, the provision of sufficient accessible, affordable healthy food is a central concern for food security. Promotion of healthy living and chronic disease prevention are predicated on the ability of individuals and communities to make healthy choices. Having access to nutritious affordable food is one of the conditions required to make such choices possible but one that is too often not available, especially to families in remote regions of Canada.^{3–5}

An example is Manitoba’s northern Aboriginal communities, which historically had mixed, subsistence based economies in which the harvesting of country food for primarily domestic consumption played a significant role in their food security and culture.^{6,7} The term ‘country food’ or ‘traditional

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food' refers to the mammals, fish, plants, berries and waterfowl/seabirds harvested from local stocks. By the middle of the twentieth century, most northern communities were still relatively self-sufficient, except for products like flour and sugar and it was not uncommon to have had market gardens and other locally produced foods.⁸ This included wild game from hunting and trapping, fish, berries and gardening. As a result of colonial attitudes and practices, traditional economies, governments, social and spiritual practices of Aboriginal people were disrupted, and food sustainability was undermined.^{9,10} In Canada, over the last 70 years or so, there has been an increase in permanent settlements for indigenous peoples, leading to a decrease in the importance of foods derived from hunting, fishing, gathering and traditional agriculture and a growing reliance on foods purchased from the market supply.¹¹ As a consequence, food preferences change, leading to the adoption of characteristic southern dietary habits, including sugar-sweetened soft drinks, and snack foods high in fat, sugar and salt.^{12,13} In the 1990s, researchers documented these dramatic generational changes in three communities, showing that there were no country foods that elders had 'never eaten', several that women of childbearing age had never eaten and hardly any that children had eaten.¹⁴ While elders retained a strong preference for country foods, children's stated food preferences were almost exclusively for southern store-bought food. Such changes in dietary practices are associated with obesity, dental caries, anaemia, lowered resistance to infection and diabetes.^{15,16} The present paper reviews food security issues as they pertain to indigenous communities, particularly in northern Manitoba, and describes community and government approaches to tackling food insecurity.

Food security in Canada

As commonly defined, 'Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life'.¹⁷ Conversely, food insecurity—classified as either moderate (MOFI) or severe (SEFI) is a consequence of inadequate or uncertain access to healthy food in terms of quantity or quality, and is typically associated with limited financial resources.¹⁸

Recognised as an important public health issue in Canada, household food insecurity is associated with a range of food-related health problems, such as obesity and multiple chronic conditions, including heart disease, diabetes, high blood pressure, distress, depression, low immunity levels, dental caries and anaemia.^{19–21} Links between food insecurity in Aboriginal populations and negative health consequences such as obesity, depression and chronic disease have also been reported.²² It has been suggested that food insecurity may at least partially explain why Manitoba has the highest rate of paediatric diabetes in North America²³ when diabetes was unheard of in these communities 40 years ago.

The Canadian Community Health Survey 2.2; Nutrition Focus Study (CCHS 2.2) was the first Canadian study to

systematically collect data on household food security. A national average of 9.4% household food insecurity masks considerable differences in vulnerable sub-populations; much higher levels were reported in households in the lowest income adequacy quintile (55%), social assistance recipients (62%) and off-reserve Aboriginals (33%).^{24,25} A provincial analysis of the CCHS2.2 data indicated that obesity and overweight in Manitoban children is related to food insecurity, being significantly higher in children living in the north, among off-reserve aboriginal children and among boys living in food-insecure households.²⁶ The Canadian study excluded First Nation reserves, but it is reasonable to expect that food insecurity rates would be even higher in northern First Nation reserve communities than off-reserve, given their challenging food environments, as will be discussed below.

There is a paucity of data on food insecurity in First Nations communities. A recent study of 534 households in 14 Northern Manitoba communities⁵ found that three out of four homes (75%) in northern Manitoba were food insecure, with either an adult and/or child experiencing food insecurity in each of these households. One-third of homes (33%) experienced SEFI while more than two in every five households (42%) experienced MOFI. Household food insecurity rates varied dramatically across the 14 communities, from a 'low' of 47% to a high of 100%. Accessibility (road, train or plane) was significantly related to food security rates, with all-year-road access being associated with the lowest food insecurity rates and fly-in access only, associated with the highest. Similar findings came from the 2010 First Nations Food Nutrition and Environment Study, which reported a household food insecurity rate of 73% in northern Manitoba.²⁷

Indigenous community food issues in northern Manitoba

After Ontario, Manitoba has the second highest First Nations population in Canada. As of March 2012, there were 140 975 First Nations people living in Manitoba (out of a total provincial population of 1.15 m); 60% (84 874) of whom live on one of 63 reserves, 31 of which are located in the remote northern region of the province and 17 of which are only accessible by air for 10 months of the year.²⁸ With a median age of 24 years, the First Nations is the fastest growing population group in Canada. At the same time, they are among the most disadvantaged.²⁹

First Nation reserves are typically Canada's most remote and poorest communities. They are frequently economically marginalised, and commonly lack adequate infrastructure for food processing, food production and safe drinking water, as well as poor transport networks all of which are factors that make these communities vulnerable to food insecurity. The First Nations Community Well-Being Index measures wellbeing at the community level. Indicators of education, labour force activity, income and housing are combined into a wellbeing score that is calculated for 541 First Nations and 4144 other Canadian communities. Half of

all First Nations communities score in the lower range of the index compared with 3% of other Canadian communities. One First Nation appears in the top 100 Canadian communities, while 92 appear in the bottom 100.³⁰ Manitoba's First Nations population has double the premature mortality rate of non-First Nation Manitobans: life expectancy for First Nations people is about eight years less than all other Manitobans.³¹

Archibald and Grey³² point to underlying shortages of affordable, nutritious food, as well as infrastructure, and lack of employment as the cause of the health 'crisis' among Aboriginal peoples. It is well accepted that exposure to poor-quality food environments amplifies individual risk factors for obesity and poor nutrition such as low income, absence of transportation and poor cooking skills or knowledge³³ and has been well studied in urban settings.^{34–37} Factors associated with food access and its consequences in remote communities are less well researched, but include limited selection of perishable foods, expensive food prices, escalating transport costs, uncertainty of travel with winter roads not freezing over, high poverty rates and a decline in use of country foods.⁸

Dozens of communities do not have all-weather roads, and four communities are not connected to the power grid. 30 000 people in 20 communities rely on temporary 'winter roads', open only for a period of 6–8 weeks each year, during which 'season' 2500 shipments arrive by truck. At other times, they are dependent on planes (or for a few, trains), which incurs very high shipping costs. At all times of the year, perishable foods have to be supplied by plane, through an extended supply route, militating high prices and often poor quality once they do arrive at the local store.

Approaches to tackling food insecurity

Indigenous peoples around the world face challenges to traditional practice and food sovereignty. Using case studies from around the world, researchers at the CINE list many successful food system interventions, which they categorise into four areas: traditional food harvesting of wild/animal plants; agricultural activities, such as home or community gardens, livestock raising and fish harvesting; education on nutrition and food production in community and schools;

fostering local leadership to make linkages with business, health department, education, government and non-governmental organisations.¹¹ Each of these interventions has been introduced, to a greater or lesser extent and with varying levels of success, in Manitoba.

Northern Healthy Foods Initiative

The Northern Healthy Foods Initiative³⁸ (NHFI) was created in 2005 by the Manitoba provincial government to implement priority recommendations from the aforementioned Northern Food Prices Report.⁸ A multi-sectoral approach was developed involving six government departments. Through partnerships with three northern community-based organisations, a school division and a province-wide food security organisation, NHFI assists northern communities to build capacity in local production of food for local consumption, choose nutritional foods, implement strategies to lower the cost for healthy foods, leverage funding for projects and create food-based economic development opportunities. NHFI focuses primarily on remote and semi-remote Northern communities, and on four programme components: (i) home and community gardens; (ii) greenhouse pilot projects; (iii) school nutrition and (iv) food preservation—including a revolving loan freezer purchase program, cold cellars, drying and food preservation workshops.

Table 1 illustrates the growing impact of the initiative over the past three years, with a reach into over 80 communities. Gardening has been extremely popular, with over 1000 individual gardens—often in places where none existed before. (It is worth noting though that historically, gardening was done (one of the communities is called Garden Hill), but that this practice disappeared over time). Northern greenhouse pilot projects have established schools as teaching, training and meeting sites for starting and raising plants for gardens. As well, school nutrition projects provide culturally appropriate nutrition, agriculture/harvesting and cooking education, as well as increasing the availability of nutritious food by providing nutritious lunches and snacks. Small-scale livestock raising has met with mixed success, challenged by the high cost of freight for feed. Finally, the revolving loan freezer purchase

Table 1 Manitoba northern healthy foods initiative outcomes

Year ^(a)	2009–2010	2010–2011	2011–2012
Number of communities/First Nations involved in NHFI activities	60	70+	Est. 80+
Total gardens	549+	735+	1000
Total gardeners	Unknown	1037	1200
Revolving loan freezer purchase programme	307	428	435
Greenhouses/geodesic domes supported	16	35	59
Refrigeration units	3	3	3
Livestock (chicken/turkey/geese/duck/goat)	5 communities	10 communities 21 families	13 communities 29 families

^(a) Data is not available for previous years.

programme, which provides 50% repayable loans to low-income families in First Nations communities (100% repayable in non-First Nations communities), aims to enhance capacity to bulk buy and store country foods, as well as produce from gardens. Beyond the individual community or project level, regional conferences and training events, such as Northern Harvest Forum and Root Camp, provide hands-on training and capacity-building opportunities for networking. Despite the not insubstantial successes, there are many continuing challenges, including poor soil conditions, short growing season, storing and maintaining equipment and a need for more community-based skill development for all aspects of food production and preservation.

Country food programmes

The ability to harvest, share and consume 'country foods' is recognised as particularly important to the food security of indigenous peoples.³⁹ In a 2010 study of First Nations nutrition and environment in Manitoba, researchers highlighted the importance of traditional food.²⁷ Participants in their study reported consuming an average of 45 g of traditional food per day, which comprised mainly land animals (moose, deer, rabbit, elk), fish, wild berries or nuts, wild birds and wild plants. Two-thirds of the participants expressed the wish to have more traditional food. Dietary analyses showed that dietary quality was improved on days when traditional foods were consumed. Presently, many local, financial and regulatory barriers to using country foods exist, such as lack of hunters, lack of time, cost of equipment and fuel for transport, and government requirements governing meat slaughter and handling, or restricting access to or usage of land. In Manitoba, the Nelson House Country Food Program of the Nisichawayasihk Cree Nation provides community members with access to healthy foods, while creating jobs and building community. The programme employs seven local people including five workers who hunt and fish year-round. The food brought in by the workers is distributed for free among community members, with priority given to sharing the food with elders, the sick and low-income, single-parent families.⁵ Although country food harvesting and sharing occurs in every northern Aboriginal community, most do not have the infrastructure or funding to support an organised distribution system for hunting or fishing or support hunters or fisher outfitting. However, Thompson notes that some communities do lend out ice fishing nets to community members. An ice fishing net can each feed 20 families or about 150 to 200 people.

Nutrition North Canada

Nutrition North Canada (NNC) is a new federal government programme designed to ensure that healthy foods are more accessible and affordable to Canadians living in isolated fly-in Northern communities.⁴⁰ Using a market-driven model, the programme applies subsidies at the retailer level, and replaces an earlier transport subsidy programme known

as Food Mail. In eligible communities [those previously participating in Food Mail], subsidies are applied to a list of eligible foods, focusing on the most nutritious perishable foods, such as fruits, milk and eggs that are shipped by air. Retailers and shippers make their own supply chain arrangements to ship eligible items to community stores at their convenience and discretion, where they are sold at reduced prices to consumers. Retailers claim the subsidy from the Government of Canada according to a predetermined subsidy rate per kilogram. Individuals, social institutions such as schools and daycares, and commercial establishments such as hotels and restaurants located in eligible communities can order eligible items direct from Southern suppliers registered with the program.

Funding is provided for the fully eligible NNC communities to support culturally appropriate retail and community-based nutrition education initiatives. According to representatives of the major northern retailer in Manitoba, in the first year of the programme, prices have dropped by 15–20% in NNC communities; food quality has improved because delivery times in the supply chain have shortened and consequently, consumption patterns are changing. For example, fresh milk sales have increased significantly. However, the new programme has been subjected to several strong criticisms, including restrictions both on community eligibility for the programme and on the foods deemed eligible to receive subsidised rates. The question as to whether retailer subsidies are being passed on the consumers has also been raised. Close monitoring during the first year of operation will provide data to guide future programme development.

Conclusions

Strategies such as those described above have the potential to significantly enhance access to affordable, nutritious food in Northern Communities thereby improving food security, healthy living and preventing chronic disease. Community-based action combined with structural changes and a supportive policy environment hold out the prospect of changing the conditions of food access that underlie the ultimate success of healthy living and chronic disease prevention efforts. While there appears to be a growing interest in local food production and the reintroduction of traditional foods to the diet, an important key to successful change is the engagement of youth, whose food habits and preferences have been heavily influenced by mainstream commercial food culture.

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