UNDERSTANDING CULTURAL ADHERENCE AND THE USE OF TRADITIONAL MEDICINE IN WASKAGANISH FIRST NATION

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ABSTRACT

Changes in the Cree way of life over the last century are reflected by an increased prevalence of type 2 diabetes (T2D). Since traditional medicine (TM) is considered an appropriate complementary approach for T2D treatment and management, suitable delivery methods need to be determined.

Using community-approved interview and focus group guides, this qualitative study aimed to understand how the community's cultural practices affect TM use and how TM is perceived by various groups.

Two themes emerged from interviews. First, modernization has influenced culture and affects the receptivity of reintroducing TM to the community. Second, participants identified that the health benefits of traditional culture can improve the community's well-being. Focus groups displayed differing levels of knowledge about TM, but everyone agreed that further education is needed before reviving TM use. These findings demonstrate that community-based programs for promoting all aspects of traditional culture, including the use of TM, should be considered.

RÉSUMÉ

Le mode de vie des Cris a changé dès la fin du 19e siècle. Aussi, la prévalence du diabète s'avère la plus élevée au Canada. La médecine traditionnelle (MT) s'est révélée être une approche culturellement appropriée pour un traitement complémentaire du diabète. Il faut toutefois déterminer la meilleure façon d'administrer cette médecine.

Cette étude, de nature qualitative, décrit comment les habitudes et croyances des Cris influencent l'utilisation de la MT et comment celle-ci est perçue parmi les différents groupes rencontrés à Waskaganish.

Nos résultats montrent que la vie moderne a changé les habitudes des Cris quant à l'utilisation des MT. Cependant, les participants ont indiqué que la culture et santé sont liées et que la MT n'est pas, à cet égard, sans bénéfices pour leur communauté. Il ressort qu'il y a un manque de connaissance sur les MT et qu'il faut promouvoir la culture crie en lien avec la MT.

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1. INTRODUCTION

Indigenous people have close connections with the land on which they live. Their natural habitats define the basis for their food and medical systems. In North America, Aboriginal groups adapted to diverse climates and vegetation, including the boreal forest of Canada's subarctic region (Brown and Wilson 2004).

Starting in the 16th century, European settlement and colonial expansion encroached on the indigenous peoples' way of life. Today, Aboriginal people across the continent continue to face the effects of modernization, from the loss of traditional hunting lands to the loss of traditional knowledge. The shift to a "modern lifestyle" has been linked to a rise in the incidence of chronic diseases such as obesity, diabetes mellitus, and cardiovascular disease (Szathmary 1990; Joe and Young 1994).

Type 2 diabetes has had a devastating effect on First Nations groups in Canada. Ten years ago, Young and colleagues (2000) reported that indigenous peoples are 3 to 5 times more likely to suffer from diabetes than the rest of the Canadian population. Moreover, diabetes prevention programs have seen limited success in indigenous communities (Hood et al 1997; Daniel et al 1999; Griffin et al 1999; Gray-Donald et al 2000; Harris and Zinman 2000; Rowley et al 2000; Gilliland et al 2002; Macaulay et al 2003; Satterfield et al 2003; Ho et al 2006; Rosecrans et al 2008). Finally, the use of conventional anti-diabetic medicines in these communities often suffers from a lack of cultural relevance. Poor compliance rates can lead to increased risk for diabetes complications.

With the recent revival of traditional medicinal practices in many indigenous groups (Hill 2003), the use of traditional medicinal plants is increasingly considered as an appropriate approach for diabetes treatment and

management (Berman et al 1999). The case for medicinal plants is further strengthened when considering that metformin, one of the most commonly prescribed diabetes medications on the market, is derived from guanidine, a compound with hypoglycaemic properties found in French lilac (*Galega officinalis*) (Oubré et al 1997). Therefore, it is not surprising that over the last two decades, there has been considerable work done to explore the anti-diabetic properties of medicinal plants (Day 2005).

The Cree Board of Health and Social Services of James Bay would like to make traditional medicines available via the conventional care system (Torrie et al 2003). The CIHR Team in Aboriginal Anti-Diabetic Medicines (CIHR-TAAM) was established in 2003 with the ultimate goal of incorporating traditional medicinal plants with the ability to treat diabetes into the existing care system. The team recognizes that

> "A sense of self-worth and cultural pride is an important component of the complex solution needed to address the problems facing Aboriginal people today. One way to achieve this goal is by preserving, validating, and teaching the significance of traditional environmental knowledge" (Marles et al 2000).

This multi-disciplinary team includes six laboratories located in Montreal and Ottawa, four Cree communities from the James Bay region of Quebec, the Cree Board of Health and Social Services of James Bay, the Grand Council of the Crees, and several provincial and federal agencies. The project encompasses a variety of disciplines, including ethnobotany, nutrition, pharmacology, phytochemistry, and toxicology.

In an ethnobotanical study initiated by the team, Eeyou healers and Elders from Whapmagoostui and Mistissini identified plants from the traditional pharmacopeia to treat symptoms associated with diabetes, including polydipsia, polyurea, and increased appetite (Leduc et al 2006). Since it is

essential to ensure that these plants are efficacious and safe to use as a potential diabetes treatment, many of the identified species have undergone tests to identify and study how they are able to produce the reported effects (Spoor et al 2006; Fraser et al 2007; Harris et al 2008; Harbilas et al 2009). The results obtained thus far are very promising and an observational study is underway to determine how these medicines may help alleviate the effects of diabetes in humans.

Traditional food and traditional medicine consumption patterns have been assessed throughout Eeyou Istchee and published for the Cree Nation of Mistissini (Grandi 2006; Bonnier-Viger et al 2007). In Mistissini, Grandi found that the consumption of traditional food and medicine is less in the younger generation as compared to the Elders. However, the results of the study do not reveal whether there are factors influencing the Crees' attitudes and beliefs towards traditional food or medicine use. The relationship between cultural adherence and traditional medicine use requires further investigation. Simply knowing how many people use traditional medicine does not reveal anything about compliance nor does it indicate what the appropriate delivery of the medicine should be.

This grounded theory study is the first to investigate, at a community level, the willingness to include traditional medicines at the clinic as a choice for healing. The purpose of this study is to describe what Waskaganish First Nation's cultural beliefs and practices are and how they affect willingness to use traditional medicine, in addition to investigating what needs to be done to integrate traditional medicine and to promote its use successfully.

2. LITERATURE REVIEW

2.1 The Nutrition Transition

In modernized societies, diets are changing. The increased availability and consumption of cheap sources of energy-dense and processed foods has been termed the nutrition transition (Drewnowski and Popkin 1997). This diet shift is concurrent with the epidemiologic transition, which is identified as the shift in the burden of disease from infectious and micronutrient deficiency diseases to chronic diseases, such as type 2 diabetes.

The epidemiologic and nutrition transitions have had significant effects on indigenous groups worldwide. For example, in Australia, political, economic, and social pressures led the aboriginal population to adopt a westernized diet (Lee 1996). Today, the range of traditional food used to prepare meals is smaller and participation in bush activities has declined. The Aborigines are experiencing the health consequences of rapid modernization and "acculturation." Studies have reported increases in sodium/potassium ratio, blood pressure, and weight/height ratio, all of which are linked to hypertension, type 2 diabetes, and cardiovascular disease (Lee 1996). Furthermore, it has been observed that Aborigine men and women who gain weight develop an android body profile (visceral fat), which is linked to hypertriglyceridemia, higher fasting blood glucose, hyperinsulinemia, and hypertension in Caucasians and is also thought to be a reason for the high prevalence of diabetes among Aborigines.

In Canada, indigenous people, especially those living in remote or isolated areas, are more burdened by disease than non-indigenous Canadians. When Young explored whether aboriginal people of the subarctic were facing the epidemiologic transition, he concluded that:

> They seem to occupy an unenviable position of having more of just about every category of disease than their co-nationals (Young 1988).

The first half of the 20th century was a period of malnutrition and infectious disease for the Cree of Eeyou Istchee. In 1948, Vivian and colleagues reported that the trading posts in the James Bay region were "primitive and deplorable," with poor sanitary conditions (Vivian et al 1948). This study took place in the aftermath of severe game depletion and widespread starvation, so most adolescents and adults were found to be underweight and malnourished. The high incidence of tuberculosis was believed to be linked to poor nutrition and sanitation.

Modernization and the epidemiologic and nutrition transition of the last half of the 20th century have brought changes to indigenous people and their way of life. In the Canadian Arctic, the dietary changes of the indigenous groups were documented by Kuhnlein and colleagues. The team found that during pre-contact times, 100% of the indigenous diet was made up of traditional food. Today, as little as 10-35% of dietary energy comes from traditional food sources (Kuhnlein et al 2004). Furthermore, people under the age of 40 years consume significantly less traditional food than the older population. The elevated rate of obesity and a usual diet rich in fat and sugar put the northern indigenous population at greater risk for chronic disease.

An analysis of the diet of the Cree throughout Eeyou Istchee in 1991 revealed that the mean consumption of traditional food was relatively low in the general population (Bertrand and Daveluy 1998). The editors reported that the presence of traditional food in the diet increased with age and the amount of time spent in the bush. More recently, food-frequency questionnaires administered in Mistissini revealed that older adults consume significantly more traditional food than the younger generation (Grandi 2006; Bonnier-Viger et al 2007).

2.2 Diabetes Mellitus

Diabetes mellitus type 2 is a chronic disease whose prevalence is rising world-wide. Type 2 diabetes is the result of the body's inability to use insulin, a hormone involved in the metabolism of carbohydrates and the maintenance of blood glucose levels. It is often described as a "feast in the midst of famine" because even though there is a lot of sugar in the bloodstream (feast), very little of it is taken up by the cells to be converted to energy to meet their needs (famine) (Jaffe and Mani 2009). A variety of factors contribute to this disease, including heredity, lifestyle, and diet.

The World Health Organization (WHO) estimates that by 2030, the number of people with diabetes worldwide will reach 366 million, a doubling of the 171 million people estimated to have diabetes in 2000 (Wild et al 2004). In Canada, surveillance data for 2006-2007 revealed that over 2 million people have been diagnosed with diabetes. Currently, the prevalence of diabetes for males and females over one year of age is 6.2% overall (PHAC 2009).

2.2.1 Pathogenesis, symptoms & complications

Insulin resistance, defined as the decrease in insulin sensitivity or response to insulin action, is at the root of the pathogenesis of type 2 diabetes. The adaptive response to insulin resistance is hyperinsulinemia, where the body produces an excess of insulin to help clear glucose from the blood. However, blood glucose levels typically remain high because uptake at the cellular level remains impaired. Meanwhile, prolonged hyperinsulinemia causes refractive hyperinsulinism. At this point, the β-cells of the pancreas exhaust themselves, resulting in poor compensatory insulin release and ultimately leads to insulin deficiency (Jaffe and Mani 2009).

With the body unable to regulate blood glucose levels, the symptoms and physical characteristics of diabetes may manifest themselves. The classic symptoms of diabetes include polyuria (increased frequency of urination),

polydipsia (increased thirst), and unexplained weight loss (CDA 2008). Blurred vision, slow-healing cuts, recurring infections of the skin, gums, or bladder, and tingling in the extremities, especially feet, are some of the physical manifestations associated with diabetes (JAMA 2000). A diagnosis of diabetes is made with either a fasting plasma glucose level over 7.0 mmol/L, a casual plasma glucose level over 11.1 mmol/L with the presence of symptoms, or a 2-hour plasma glucose level over 11.1 mmol/L following an oral glucose tolerance test (CDA 2008).

Type 2 diabetes is often described as a disease of modernization (Lieberman 2003). Evolutionary and dietary factors are thought to play a role in the development of diabetes. The thrifty genotype hypothesis (Neel) was initially proposed to explain the genetic predisposition for diabetes, particularly for indigenous peoples of North America. It posits that people evolved genetic variants which allowed for high glucose uptake during times of feast (high energy intake) to survive famine situations (low energy intake) and harsh environments (Neel 1962). However, some researchers noted that this hypothesis does not hold for all indigenous groups who have since been exposed to Western diets (Lieberman 2003). The thrifty phenotype hypothesis (Barker) has since been proposed, focusing instead on the epigenetic predisposition for diabetes. This hypothesis suggests that *in utero* nutritional programming may alter glucose and insulin metabolism later in life (Hales and Barker 2001).

Poor diets, especially those that are energy-dense, rich in refined carbohydrates, and low in dietary fibre, and decreased energy expenditure increase the risk of weight gain. Obesity, characterized by an accumulation of excessive body fat and clinically classified by a body mass index (BMI) greater than 30 kg/m^2, is a major risk factor for type 2 diabetes (Slevin et al 2003). The presence of visceral fat in the obese individual is associated with

a decrease in insulin sensitivity, which can occur through a variety of mechanisms.

Individuals with diabetes often suffer from dyslipidemia (a triad of hypertriglyceridemia, low HDL cholesterol levels, and normal to high LDL levels), putting them at greater risk for cardiovascular disease (CDA 2008). Other complications may arise in poorly-controlled diabetes. Since excess glucose in the blood facilitates the production of glycoproteins, the level of glycosylated haemoglobin is used to assess long-term (i.e., 6-8 weeks) glucose control in a diabetic patient (Anderson 2006). A glycosylated haemoglobin (HbA_{1c}) level over 9% is an indicator of sustained hyperglycemia and poor diabetic control. Kidney damage (diabetic nephropathy), retinopathy and diabetic cataracts, neuropathy, and diabetic foot ulcers are just a few of the complications resulting from untreated diabetes (CDA 2008).

2.2.2 Diabetes among indigenous people

Studies over the last 30 years have demonstrated that the prevalence of diabetes has sky-rocketed among indigenous populations. In Canada, the prevalence is up to 5 times higher in Aboriginal groups as compared to non-Aboriginal groups (Young et al 2000). Radical changes in diet and lifestyle have contributed significantly to the increase in diabetes.

In 1993, a report on the prevalence of diabetes among the James Bay Cree was published based on case findings and applying the WHO's criteria for diabetes diagnosis (Brassard et al 1993). An overall crude prevalence of 2.7% in Cree adults over the age of 20 was reported, but the authors indicated that their method most likely underestimated the prevalence. However, a clear north-south gradient emerged in the number of cases reported by community. There was a significantly higher prevalence of cases

in the southern communities (Mistissini and Waswanipi) than the more northern communities.

In light of these findings, the Cree Diabetes Information System (CDIS) was formed in 1996 to track the year-to-year changes in crude prevalence of diabetes in Eeyou Istchee. The most recent statistics demonstrate that the crude prevalence of diabetes among Cree adults over the age of 20 is 19.1% (Kuzmina et al 2008). In Waskaganish, 18% of the population over the age of 20 has diabetes. The age-standardized prevalence, calculated according to the age distribution of the province of Quebec, is 25.5% for Cree adults over the age of 20. This alarmingly high prevalence is four times that of other Quebecers, which, as of 2006, was 6.4% for adults over the age of 20 (INSPQ 2006).

In recent years, there has been a push to understand the risk factors for diabetes among indigenous people. A study on the genetic profile of diabetics in Sandy Lake First Nation in northern Ontario found a missense mutation in the HNF1A gene, which codes for a transcriptional activator (HNF1-alpha) involved in gene expression (Hegele 2001). Mutations in this gene were previously found to be associated with maturity-onset diabetes of the young, called the MODY3 defect. The phenotype for this defect is insulin deficiency in lean adults. However, since the phenotype of diabetes among the Oji-Cree of Sandy Lake is obesity and hyperinsulinemia, it was suggested that the gene may be pleiotropic. Furthermore, Hegele and colleagues noted, through linkage analysis, that there is a strong association of the missense mutation with youth-onset diabetes. This suggests that the genetic defect may contribute to the high prevalence of diabetes, along with poor diet and decreased participation in physical activity.

A study on the metabolic risk factors and their contribution to the high incidence of diabetes observed among Aboriginal Canadians was also

conducted with Sandy Lake First Nation. The authors found that, like non-Aboriginal populations, adiposity, dyslipidemia, hyperglycemia, hyperinsulinemia, and hypertension were all associated with a higher risk of diabetes (Ley et al 2009). Additionally, the authors believe that the metabolic syndrome (the term given to the clustering of the above-mentioned risk factors) can potentially be used as an indicator for individuals at risk for diabetes, as it had high specificity and low negative predictive value for detecting disease-free patients involved with the study.

A recent epidemiological study reported that, in Saskatchewan, First Nations women in their reproductive years are increasingly affected by diabetes (Dyck et al 2010). The higher rate of diabetes observed in First Nations women between the ages of 20 and 49 is thought to be associated with their higher rates of obesity and overweight. Consequently, there is heightened concern for gestational diabetes mellitus (GDM) among these women, which puts them a greater risk for diabetes later in life.

The high rates of diabetes among indigenous people means they are at increased risk for complications. In Sandy Lake First Nation, increasing glucose intolerance was associated with poor a lipid profile, which contributes to an elevated risk of cardiovascular disease (Harris et al 2002). When the prevalence of complications was assessed among diabetics in Sandy Lake, the authors found a very high prevalence of nephropathy, suggesting that indigenous peoples suffering with diabetes may be more susceptible to kidney disease (Hanley et al 2005). This study also revealed that diabetics in Sandy Lake had a high prevalence of early neuropathy and a relatively high prevalence of retinopathy, although the majority of the former cases were classified as mild non-proliferative diabetic retinopathy, the least damaging form of the disease.

2.2.3 Understanding diabetes in indigenous populations

The development of culturally-relevant primary prevention programs and treatment interventions is dependent on identifying how indigenous groups perceive and interpret concepts related to diabetes. Qualitative studies were conducted with indigenous groups to understand the aboriginal perspective of living with diabetes (Garro 1995; Grams et al 1996; Boston et al 1997; Hernandez et al 1999; Bruyere and Garro 2000; Thompson and Gifford 2000; Metallic 2004; Barton et al 2005; Satterfield et al 2007; Bird et al 2008). Most Aboriginal groups identified diabetes as a "new" disease, one introduced by changes that were beyond their control.

For example, a participatory action research study with the Cree of Eeyou Istchee revealed that the disease is attributed to an "infection" from the white man:

> Most important among the Cree beliefs of causation of diabetes is the notion that diabetes is a disease of the "white man" that comes from the white man's blood (Boston et al 1997).

An in-depth qualitative study was also conducted in the Cree Nation of Waswanipi to understand diabetes from the Cree perspective. Found poetry was generated from in-depth interviews to describe emerging themes. Metallic's work confirmed that the Cree understanding of diabetes does not correspond with the "conventional" view of diabetes. Furthermore, the use of pills to treat diabetes is met with distrust and is compared to a "quick fix" for a long-term problem. The participants revealed that providing motivation to be healthy through group activities, humour, and re-connecting with the land may be the key to preventing and treating diabetes in this community (Metallic 2004). Many indigenous groups recognize that their health is connected to traditional ways and values, and including these traditional modes into program planning are essential (Satterfield et al 2007).

2.2.4 Diabetes prevention & treatment

Successful chronic disease prevention interventions require a multi-factorial approach. Healthy eating, physical activity, and determinants of health, which include income and social status, work conditions, social exclusion, built environment, and access to health services should be considered when designing a prevention program.

A clinical trial was conducted with non-diabetics at risk for diabetes to determine the effectiveness of lifestyle intervention and/or medication in preventing the development of diabetes (DPP Research Group 2002). The patients were randomized to three groups: lifestyle intervention (using the Food Guide Pyramid, increasing physical activity, and weight loss), medication (metformin), or both. The research group discovered that using medication coupled with lifestyle intervention reduced the incidence of diabetes among these patients. However, the lifestyle intervention alone was more effective than the use of metformin alone. The Canadian Diabetes Association has based their prevention recommendations on this study, citing lifestyle modification or/and pharmacologic therapy for individuals with impaired glucose tolerance (CDA 2008).

For those who are diagnosed with diabetes, treatment is required to control blood glucose levels and reduce the risk of complications. Pharmaceuticals are usually the prescribed treatment option, with a choice between hypoglycaemic agents, anti-hyperglycemic agents, or insulin. Hypoglycemic therapies include sulfonylureas or benzoic acid derivatives which are used to increase insulin secretion. The anti-hypercglycemic therapies include biguanides to decrease both glucose absorption in the gut and glucose production in the liver, alpha-glucosidase inhibitors to decrease glucose absorption, or thiazolidinediones to enhance insulin action in muscle cells, hepatocytes, and adipocytes (Harrigan et al 2001). The Canadian Diabetes

Association also recommends lifestyle modification (improving diet quality, increasing physical activity, and weight loss) along with drug therapy (CDA 2008).

The adherence to diabetes treatment is poorly understood. An international meta-ethnography recently explored the potential obstacles related to adherence (Vermeire et al 2007). Several common themes were found across the European nations involved in the study, including: the course of diabetes, availability and comprehension of information, the patient's social support system and attitude towards health and well-being, the ability of the health care provider to tailor treatment to the patient, and the patient's own body awareness. These factors, alone or in combination, are believed to affect a patient's ability to adhere to diabetes treatment programs.

As Metallic's study revealed, the above-mentioned factors, in addition to a lack of cultural relevance, may lead to compliance issues with diabetes treatments among indigenous groups. The current clinical practice guidelines for diabetes and Aboriginal people do recommend that:

> Treatment of diabetes in Aboriginal peoples should follow current clinical practice guidelines using Aboriginal-specific community diabetes management programs developed and delivered in partnership with the target communities. (CDA 2008).

Over the last 15 years, researchers have endeavoured to consult with members of indigenous communities to help to develop prevention and intervention programs (Gittelsohn et al 1996; Hood et al 1997; Ho et al 2006). However, despite the push to make programs culturally-appropriate, prevention and treatment programs with indigenous peoples have seen few successes.

Table 1 provides a brief summary of some of the diabetes prevention and intervention studies published in the last decade.

Table 1: Diabetes interventions with First Nations groups

Study	Group/Location	Type of research	Outcome
(Daniel et al 1999)	Rural Okanagan communities (British Columbia)	Community-directed prevention/control	Few changes in risk factors
(Gray-Donald et al 2000)	James Bay Cree (Quebec)	GDM prevention: diet & activity	Minor impact on diet
(Rowley et al 2000)	Northern Territory Aborigines (Australia)	Health promotion intervention (diet & exercise)	No change in prevalence of diabetes
(Ryan et al 2000)	Alexis band (Alberta)	Herbal tea treatment	No significant effect seen with responder analysis
(Gilliland et al 2002)	8 Rio Grande Pueblo communities (New Mexico)	Lifestyle intervention	Significant benefit in glycemic control & weight
(Ritenbaugh et al 2003)	Zuni Pueblo (New Mexico)	Lifestyle intervention	Improved plasma insulin levels
(Saksvig et al 2005)	Sandy Lake Ojibway-Cree (Ontario)	School-based intervention	Improved knowledge and psychosocial factors about healthy eating
(Paradis et al 2005)	Mohawks of Kahnawake (Quebec)	Primary prevention in schools	Early risk reduction seen, but not sustained

Most of the interventions listed above involved a lifestyle intervention. Outcomes related to these culturally-appropriate intervention programs are gradually improving, such as with the Rio Grande Pueblo communities of New Mexico (Gilliland et al 2002; Ritenbaugh et al 2003). The Kahnawake Schools Diabetes Prevention Project and Sandy Lake Health and Diabetes Project recently collaborated together to outline best practices for primary prevention, with the hope of further reducing risk factors for diabetes (Macaulay et al 2003).

An evaluation of a Diabetes Wellness intervention program was conducted with Winnebago (Nebraska) and Pine Ridge (South Dakota), focusing on participants' experiences during Talking Circle sessions. The phenomenological study revealed themes connected to their holistic

worldview and life experiences (Struthers et al 2003). The participants indicated that harmonization of diabetes using traditional indigenous methods, such as traditional medicine, may help treat this disease with greater success.

A treatment study conducted by Ryan and colleagues involved the use of a traditional tea preparation of trembling aspen (*Populus treminoides*) and cow parsnip (*Heracleum lanatum*) made by a Sioux healer from the Alexis band in Alberta (2000). The randomized single-blinded, placebo-controlled trial of the tea, along with continued use of insulin, did not show a significant effect with a responder analysis, which was set at a 10% change in blood glucose. However, when a sub-group of subjects with elevated HbA_{1c} were analyzed, a few significant benefits were observed, suggesting that this preparation can have a greater response on people with poorer glycemic control. Although this study did demonstrate some significant results, the authors recommend that further work with indigenous therapies for diabetes is needed.

2.3 Traditional Medicine

2.3.1 Recognizing traditional medicine use

In recent years, the use of natural health products (NHP) such as traditional, complementary, or alternative medicine has surged. Sales records show that alternative therapies are increasing in popularity (Cavaliere et al 2010). In 2009, the total herb sales in the United States market were estimated to be $5.03 billion, representing a 4.8% increase from 2008. In Canada, a survey revealed that 15% of adults reported using herbal remedies, with the top herbal products being garlic, herbal mixes, and evening primrose oil (Troppmann et al 2002). Furthermore, supplement users were found to have a higher level of self-perceived health than non-users.

With the increasing and wide-spread use of traditional/complementary and alternative medicines, their potential synergies, conflicts, and

complementarities with conventional health care must be considered. The World Health Organization has recognized the popularity and importance of these medicines. In 2002, the Traditional Medicine Strategy was developed (WHO 2002) to encourage Member States to recognize traditional medicines as a form of treatment. The WHO's congress on Traditional Medicine in 2008 led to the development of the Beijing Declaration, which re-established the importance of recognizing traditional medicines:

> The knowledge of traditional medicine, treatments and practices should be respected, preserved, promoted and communicated widely and appropriately based on the circumstances in each country (WHO 2008).

The Third WHO Medicines Strategy documented that, as of 2007, 48 countries had developed policies on the use of traditional medicines and 110 countries had put regulations in place for herbal medicines (WHO 2009a). In this strategy, the WHO emphasizes focusing on facilitating traditional medicine integration within conventional health care systems, the regulation and qualification of practitioners, and the collection and use of evidence.

More recently, at the 2009 World Health Assembly, a resolution was drafted, calling for all Member States to adopt the Beijing Declaration. The resolution also urges the Member States to not only consider the integration of traditional healing practices into conventional care systems, but to also improve communication between conventional and traditional medicine practitioners (WHO 2009b).

In Canada, the Natural Health Products Directorate governs the availability of natural health products and plant products. However, traditional medicines prepared by traditional medicine providers for patients in indigenous communities do not need to be approved by the Directorate as long as they are not sold by retailers.

Traditional medicine is re-emerging in many indigenous communities. In Eeyou Istchee, it was demonstrated that the Cree consider traditional healing practices healthier than the conventional system currently in place (Boston et al 1997). However, there can be risks associated with the revival of traditional medical practices if health care professionals are not informed about their use. Marbella and colleagues reported that less than 15% of Aboriginal patients they surveyed disclosed to their physician that they were seeing a traditional healer (1998).

There has been success at integrating traditional healing in conventional settings. Balick and Cox, two prominent ethnobotanists who study traditional medical systems worldwide, cite the Chinese medical system as an example (1996). Meanwhile, in Canada, the integration of traditional values and healing is increasingly being implemented into conventional care settings in indigenous communities (Torrie et al 2003; NAHO 2008). The Cree Board of Health and Social Services of James Bay would like to include traditional healing practices, values, and approaches into the existing system (Torrie et al 2003). Public health officials are currently striving to incorporate Cree values into existing programs. Thus, it is believed that the integration of traditional medicinal plants is an achievable goal if the communities are ready to pursue it.

2.3.2 Traditional medicine & diabetes

Interest in non-conventional therapies is increasing (Berman et al 1999; Shane-McWhorter 2005). With the growing number of cases of diabetes in rural, remote, or isolated areas where access to conventional therapy may be limited, there is a need to consider traditional/alternative medicines. Over the last 20 years, many reviews have analyzed the evidence for using medicinal plants for diabetes, as summarized in Table 2.

Table 2: Medicinal plants used for diabetes

Study	What was studied?	Summary
(Bailey and Day 1989)	Plants with hypoglycaemic activity & their constituents	Review of active principles: alkaloids, glycosides, polysaccharides
(Ivorra et al 1989)	Plants with hypoglycaemic activity & their constituents	Review of active principles: polysaccharides & proteins, flavonoids, steroids & terpenoids, alkaloids
(Marles and Farnsworth 1995)	Plants with anti-diabetic and hypoglycaemic activity & their constituents	Ethnopharmacological data & many active principles identified
(Ernst 1997)	Plants studied in controlled or uncontrolled clinical trials	Does not recommend anti-diabetic phytomedicines for clinical use
(Berman et al 1999)	Herbal remedies most studied: evening primrose oil, milk thistle (*Silybum marianum*), fenugreek seeds (*Trigonella foenum-graecum* L.)	Potential of their use still unclear; long-term clinical trials lacking
(Yeh et al 2003)	Herbs or vitamin/mineral supplements implicated in improving glucose control & methodological quality of trials	Insufficient evidence for their efficacy, but considered safe for use
(Day 2005)	Issues when studying/using medicinal plants for diabetes	Review original papers when studying efficacy of medicinal plants
(Shane-McWhorter 2005)	Review of frequently used herbal products: cinnamon, Gymnema (*Gymnema sylvestre*), fenugreek, bitter melon (*Momordica charantia*), ginseng, prickly pear (*Opuntia streptacantha* , aloe vera	Most considered safe for use, but should not replace pharmacologic agents. Consultation with HCPs essential

Marles and Farnsworth have produced the most detailed review to date, with over 1200 plants listed, along with their ethnopharmacological use, activity and route of administration, and active constituents (1995). In the last couple of years, literature reviews and systematic reviews have revealed that although long-term efficacy and safety of medicinal plants is still unclear, most medicinal plants are still safe to try as long as health care professionals

are informed to ensure that there is no interference with pharmacologic therapies (Yeh et al 2003; Day 2005; Shane-McWhorter 2005).

In Canada, the Assembly of First Nations published a report card on diabetes among First Nations in 2006. One of their recommendations, based on reports from the First Nations Centre and the Royal Commission on Aboriginal People of 1996, included increasing availability of traditional healing (Assembly of First Nations 2006). They also recommended to:

> Support the development of a First Nations Wholistic Health Strategy for diabetes that recognizes community and regional diversities and which is characterized by complementary traditional knowledge and western approaches, including an expanded and protected role for traditional medicine and healing practices (AFN 2006).

Although these recommendations represent an ideal approach for treating diabetes in indigenous populations, the AFN does not allude to how increasing availability of traditional healing may be achieved.

With more people considering the use of traditional healing to help treat diabetes, it is important to start a dialogue with community members to determine the best way to do so. The present study aimed to achieve such a dialogue in Waskaganish First Nation, with a focus on the use of traditional medicinal plants.

3. RESEARCH QUESTION & OBJECTIVES

3.1 Research Question

What is the appropriate delivery of traditional medicine as part of anti-diabetic therapy for the people of Waskaganish First Nation?

3.2 Specific Objectives

1. To understand the community's cultural beliefs and practices and how they affect traditional medicine use.

2. To understand how the integration of traditional medicine is perceived by health care professionals and members of the community.

4. METHODOLOGY & METHODS

4.1 Methodology

Qualitative methods are preferred for projects that include community involvement. A participatory component invokes a sense of empowerment to communities by giving them a role in the decision-making process (Wallerstein 1992). When working with indigenous groups, cultural appropriateness and awareness are fundamental for a successful intervention (Huff and Kline 1999; Kuhnlein et al 2006). Respect for an indigenous group's traditional lifestyle helps break down the barriers between researchers and collaborating communities. Unlike the positivistic paradigm which seeks to "prove the truth," qualitative research is considered a quest for knowledge and understanding (Castleden and Kurszewski 2000). Thus, qualitative methods are conducive to community-based health research with First Nations groups, who often relate their lived experiences through narratives.

The use of qualitative research is described as "the desire to step beyond the known and enter into the world of participants, to see the world from their perspective and in doing so make discoveries that will contribute to the development of empirical knowledge" (Corbin and Strauss 2008). A qualitative approach captures the opinions and beliefs of the participants, who are free to express themselves via an open-ended approach.

Conceptual framework

When designing a qualitative study, the first step is to develop a theoretical framework that will best answer the research question. This involves choosing a methodology and a philosophical orientation. The foundational questions of the chosen methodology guide how data is collected and analyzed. For this study, grounded theory methodology was used to gather, analyze, and report on the data. Although there is an emphasis on exploring

Cree culture, namely ingestive behaviours, the analysis goes further than the rich, detailed description typically seen in ethnography. With grounded theory, facts are generated from the data and used to prove inferences without turning to statistics.

Since the main goal of this study is to understand sociocultural phenomena within an indigenous community, the project was framed by respecting an indigenous philosophical orientation, which is heavily rooted in phenomenology (Cajete 2004). Native science involves more than pure objectivity: it incorporates an understanding of our "natural reality."

Finally, researchers themselves bring their own paradigm to a research study, so it is critical to define one's role when developing the conceptual framework.

Grounded theory methodology

Glaser and Strauss developed grounded theory methodology in the 1960s with the intention of generating theories from qualitative data. This methodology is a systematic and rigorous form of inquiry with specific procedures. While objectivity is important, sensitivity to the participants' viewpoints must be maintained (Corbin and Strauss 2008). Adhering to the procedures of grounded theory helps minimize biases, making it the most positivistic methodology in qualitative research (Patton 2002d; Creswell 2007).

Patton states that the foundational question asked by grounded theory is "What theory emerges from systematic comparative analysis and is grounded in fieldwork so as to explain what has been and is observed?" (Patton 2002d). This methodology is useful when theoretical perspective is lacking for a particular issue (Creswell 2007). Since data collection and data analysis can take place simultaneously, it is common to rework the interview guide or re-enter the field to refine concepts that emerge from preliminary

data analysis. The approach can be visualized as a funnel: all the data available is narrowed down to themes and developed into specific theories.

Grounded theory is unique because it employs both inductive and deductive processes. The discovery of concepts from the data is inductive, but it is the researcher's interpretations of the relationships between these concepts that requires deduction (Patton 2002b; Corbin and Strauss 2008).

This methodology was chosen for the present study because conducting interviews and focus groups provided us with the opportunity to report on current cultural practices in the community, with minimal intrusiveness and burden on the participants. Furthermore, grounded theory is a culturally-appropriate methodology because the theory developed is grounded by the indigenous perspective (Strickland 1999). Using comparative analysis strategies leads to the construction of delineated theories based on the participants' knowledge. Although the data is interpreted from the researcher's point of view, the results are still meaningful to the community.

Respecting an indigenous framework

Working with an indigenous group requires respect for the principles of an indigenous framework. It would be inaccurate and inappropriate to declare that I used an indigenous methodology for this study. I am part of the "dominant culture" in Canada and an outsider within an indigenous community. Thus, I lack the cultural background or lived experience to identify with indigenous ways of knowing and to integrate these ways into the research (Smith 1999; Cajete 2004). However, since outsiders experience different social realities from their participants, I can bring a unique perspective to the study (Castleden and Kurszewski 2000). Additionally, making connections and establishing relationships within the community demonstrates both a genuine interest in conducting the study and a commitment to providing feedback about the research.

Respect for the indigenous framework may be achieved by obtaining consent to enter the community. Transparency about the purpose and goals of the research must be provided. The CIHR Team in Aboriginal Anti-Diabetic Medicines collaborates directly with the Cree communities to avoid exploitation. The knowledge acquired through various research projects conducted by team members is considered "shared knowledge," and it belongs to both the researchers and the communities. A comprehensive research agreement is in place to ensure that all research is conducted and presented in a respectful manner.

As a member of the CIHR-TAAM team, I am committed to respecting indigenous methodology, as summarized by Linda Tuhiwai Smith (1999):

> Indigenous methodologies tend to approach cultural protocols, values, and behaviours as an integral part of methodology. They are 'factors' built in to research explicitly, to be thought about reflexively, to be declared openly as part of the research design, to be discussed as part of the final results of a study and to be disseminated back to the people in culturally appropriate ways and in a language that can be understood.

Since the knowledge that emerges from this study comes from community members, it belongs to the community. Nor are the participants "objects of research" or "involuntary subjects" (Smith 1999; Castleden and Kurszewski 2000) – they are my co-researchers. My role in this project is to be the instrument that seeks to understand the dynamics of a rich culture and to share my findings with the community.

4.2 Methods

This section describes the methods employed during the study, as outlined in Figure 1.

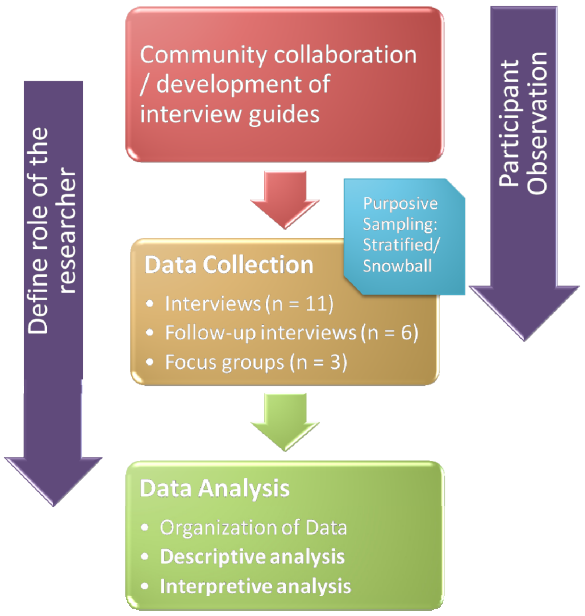

Figure 1: Flowchart describing methods involved in study

4.2.1 Role of the researcher

Self-awareness is an important part of the qualitative research process. My role as a researcher affected how the data were collected, analyzed, and interpreted. The researcher's "bias" is best described by Paul Radin's essay:

> Every investigator soon realizes that the facts he is likely to secure depend, to a marked degree, not merely upon his knowledge and his interests but to a factor frequently overlooked, his personality. No matter how objective one may strive to be … personal considerations are likely to enter which are apt to color his judgement, if they do not occasionally, entirely warp it (1933 p 113).

The cultural differences between myself and the people I worked with in Waskaganish First Nation must be accounted for. It has been recognized that the researcher's own paradigm shapes research, such that aspects of

themselves become a part of their study (Guba and Lincoln 1998). My biases will not contaminate the research if they are addressed and incorporated into the study. This is achieved by a process described as reflexive triangulation (Patton 2002c) This section will address my identity, role in the community, relationship to the participants, and perspectives.

Who am I?

I identify myself as a Caucasian female from Montreal, Quebec. I grew up in a mostly homogeneous, bilingual, suburban area with close proximity to the city. However, my family heritage is diverse: my maternal ancestors are British and Latvian, while my paternal ancestors are of Middle Eastern descent. Growing up with this diversity within my family has made it difficult to identify with one particular culture. With the unique blend of cultural values instilled in me, I have an appreciation and respect for all cultures.

I have been passionate about science since I was a child, and unsurprisingly, I chose to study biological sciences in CEGEP and university. As an undergraduate student, I majored in biochemistry, but discovered that my love of food and nutrition, a by-product of how I was raised, was where I wanted to focus my research interests. Since joining the School of Dietetics and Human Nutrition, I have moved from the laboratory to the field, where I can work directly with people. My goal as a researcher/scientist is to work with populations to find creative and engaging ways to improve nutrition and health outcomes.

Role in the community

The role I expected to take on in Waskaganish was that of "researcher," working in collaboration with the Public Health Officer and Cultural Coordinator. Both collaborators are TAAM members and are heavily involved in the community. We immediately started working together upon my arrival in Waskaganish. They shared information about key contacts at the Band

Office and clinic and helped define the focus of the interview guides. They also introduced me to people in the community and the Gravel Pit, which helped me gain rapport and start building relationships with potential respondents.

My desire to explore traditional food use and consumption was of particular interest to the people I met. I was not just another teacher, nurse, or student. The collaborators described my role as "researcher learning about Cree ways" who was spending an undetermined amount of time in the community. Since many people visit the James Bay region for research, having community members vouch for me improved my accessibility within Waskaganish First Nation.

Relationship to participants

When participating in fieldwork, community engagement allows the citizens to become familiar with the researcher. My participation in community events, along with my connection to the project's collaborators helped build trust with the participants in the study. However, as an outsider trying to understand the inner workings of the community, I struggled with how far to probe during interviews. While most participants were willing to share their experiences, certain topics caused discomfort. I opted not to push these difficult topics further. When I returned to follow-up in the fall, the participants felt comfortable addressing sensitive issues with me.

During one of the follow-up interviews, a role reversal occurred, and the participant ended up questioning me. Since we opted to use an informal interview format, the participant's questions allowed me to reflect on my perceptions of the Cree before and after entering Waskaganish. The use of a standardized questionnaire would not have captured this reflection.

Perspectives

Before starting fieldwork in northern Quebec, my contact with First Nations groups was limited. My expectations about the people and the community were based on my readings. Authors of historical and anthropological texts have their own biases, and I soon realized that relying on the literature to understand what I would encounter in the community was unrealistic. After reading Decolonizing Methodologies (Smith 1999), I was concerned that the people in the community would be suspicious of my motives, despite receiving approval from the Band Council to conduct the study.

My expectations were also shaped by a previous experience in Mistissini Cree Nation, where I stayed for a month to work with the nutritionists. During my time there, I was seen as a transient figure, and it was difficult to make connections. I feared facing the same situation in Waskaganish. Overall, however, I truly did not know what to expect.

I quickly learned that making comparisons between communities was a mistake. Each community is unique. Immediately upon my arrival in Waskaganish, I noticed a strong sense of community. The people I encountered were extremely friendly and they had a great sense of humour, especially with newcomers.

Having grown up in an urban environment, spending seven weeks in a remote community such as Waskaganish was a new experience. While many tried to convince me that I would feel isolated, I found the disconnection from fast-paced city life refreshing. I appreciated the quiet and the pristine beauty of my surroundings. It is hard to believe that despite the outer peace, chaos does exist within the community. High unemployment rates, domestic violence, and addiction are just a few of the issues the Cree face.

The concept of time is very different in the north. The locals call it “Indian time,” where things happen when they are meant to, not when they are

"supposed" to. On Indian time, there is little concern for following a schedule, which was frustrating because I am used to rigid timelines. I had difficulty adapting to this concept, and I often questioned my own ability to get through this study. Fortunately, by the end of my fieldwork, I learned to embrace the laid-back pace of village life.

Despite my initial worries about being able to connect with people in the community, I came away from Waskaganish with a new perspective. The community members were welcoming and accommodating, eager to help and share their beliefs with someone who was interested in learning about them. One of the participants described this reciprocity as follows:

> Yeah, some people are starting to participate in these scientific, or, surveys because it's good to know a traditional point of view and, you know, a Caucasian point of view, it's good to have them together, then that's how you know, when you make decisions, you know which decision is best, once you know both sides (A02).

4.2.2 Data collection

Development of interview guides

Upon my arrival in Waskaganish, a team of community collaborators was established. This team was led by the Public Health Officer and Cultural Coordinator, who are also involved with TAAM, and included the Chief, Director General, and Director of Community Development from Waskaganish's Band Office. The team of collaborators received copies of the interview guides for the semi-structured interviews and focus groups. The final, approved versions can be found in Appendix 1. The collaborators also acted as key informants by helping to identify community members for the interviews and promoting focus group sessions.

Semi-structured interviews

Semi-structured interviews allow participants to talk freely while ensuring that the interviewer gathers the information they are seeking (Bernard 2006). Without the constraint of a close-ended method, participants may express their opinions and the interviewer can gather more details and understanding. Previous research in aboriginal communities has shown that participants are less comfortable with formal interviews (Marles et al 2000). Thus, a casual format was preferred, which allowed the participant and interviewer to engage in a free-flowing conversation. The structure of the interview guide helped facilitate the discussion, especially if the participant veered too far off-track or was reluctant to share.

I approached community members interested in discussing aspects of their culture, including food, activities, and medicine (Objective 1), and invited them to participate in the interview with me. These interviews took place wherever the participants felt most comfortable: either at their home or place of work or at a neutral location such as the Lodge or the *Miichiwaahp*. The interviews were held in English, French, or Cree, depending on the participant's preference, and recorded with permission. When the interviews were not recorded, extensive notes were taken and transcripts were reconstructed from the notes. When an interview was done in Cree, a family member would provide translation. A similar procedure was adhered to for the follow-up interviews.

Focus groups

Focus groups were initially developed as a marketing tool, but they are also an efficient data-gathering method. This technique is used to gather opinions from several people and discover why they feel as they do about phenomena (Bernard 2006 p 233). Unlike interviews, focus groups provide the ability to study group dynamics, which aids in understanding different cultures (Rabiee 2004; Creswell 2007). In qualitative research, they are also

employed as a validation tool for information collected in interviews (Strickland 1999). Focus groups are similar to "talking circles," a discussion forum used by many indigenous groups in North America, making them a culturally-sensitive option (Fredericks and Hodge 1999). For example, the talking circle format was successfully implemented as a diabetes intervention strategy with the Winnebago and Pine Ridge tribes of Nebraska and South Dakota (Struthers et al 2003). The success of the project was attributed to the respect for the oral traditions of the indigenous groups. Since we wished to understand Waskaganish's perspective on traditional medicine delivery, this format was deemed effective and appropriate.

Successful focus groups include participants who share similar characteristics and are cooperative with each other (Creswell 2007). Homogeneity within groups is thought to be the best way to get the most useful data (Krueger and Casey 2000). For this study, the focus groups were therefore stratified based on common characteristics: either they worked as a health care professional, resided in Waskaganish, or resided at the Gravel Pit, which is located about 20 km outside of the community. By stratifying the focus groups, we were able to gather perspectives from different groups of people and make comparisons between the groups.

Focus groups were used to study Objective 2. Each group met at a pre-determined time in a comfortable and welcoming location. A guide of prepared questions was used to initiate the discussion for each group and served as a basis to compare responses. The sessions, lasting an hour to an hour and a half, were held in English and were recorded, with the participants' permission. Translations, where necessary, were provided during the sessions.

Participant observation

Participant observation is employed as a complementary research strategy in qualitative studies. It provides a detailed descriptive account of the people in the community, the places they frequent, and the events they attend (Becker and Geer 1970). As a researcher, being involved in the community aids in learning the ways in which the people live, act, and speak. This involvement demonstrates an interest in the Cree way of life and helps gain rapport with the people in the community. The interactions made within the community, including informal interviews that may occur during observation, can enhance the analysis of the data collected during interviews and focus groups. From an ethical standpoint, it must be noted that all observations involving people of the community were conducted overtly.

4.2.3 Sampling

In qualitative research, non-probabilistic sampling is preferred over random sampling (Guest et al 2006). With purposeful sampling, the sample is focused to the study's needs, yielding information-rich cases. If random subjects are invited to participate, saturation is more difficult to achieve. For this project, the interview participants were recruited using stratified purposive sampling and snowball sampling. Stratified sampling involves the selection of participants meeting particular criteria. Snowball sampling relies on the community network – in this case, the community collaborators – to identify interview participants (Patton 2002a). Thus, to reach the requisite number of adults and Elders, the two major strata in this study, I requested help from my contacts in recommending ideal candidates.

Focus group participants were also recruited using stratified purposive sampling/snowball sampling. The three major strata for the focus groups were health care professionals, community members residing in Waskaganish, and Elders residing at the Gravel Pit.

Sample sizes

Determining the number of interviews to conduct depends on when saturation is reached. Saturation is defined as the point where variability is no longer observed in responses. It is a strategy used for building theories in grounded theory (Morse 1995). Reaching saturation is considered the gold standard for qualitative research (Guest et al 2006). However, there are no firm guidelines in place for estimating an adequate sample size. Guest and colleagues (2006) provide an evidence-based recommendation for approximating the ideal number of interviews to conduct, finding that between 6 and 12 interviews is usually sufficient to achieve saturation. Based on this recommendation, I aimed to obtain at least 10 interviews.

The target sample size for focus groups is often set at 6 to 10 participants to maximize involvement from everyone attending the session (Rabiee 2004). Within this range, there is a greater likelihood that all participants will contribute and be engaged in the discussion, without having a few individuals dominate the discussion.

4.2.4 Data analysis

All interview and focus group data was transcribed by hand. Data analysis was performed with the assistance of QSR NVivo 8.0 software. The process of data analysis, as depicted in Figure 1, was divided into three stages: organization of data, descriptive analysis, and interpretive analysis.

Analysis of interview data

Organization of data

The organization of the interview data was directed by the interview guide. The data was grouped by interview question within each topic, allowing the content analysis to take place in a systematic fashion.

Content analysis

Figure 2 illustrates how content analysis proceeded. Generating theoretical prepositions takes place in three steps. In the descriptive phase, open coding and axial coding take place, and in the interpretive phase, selective coding takes place (Creswell 2007).

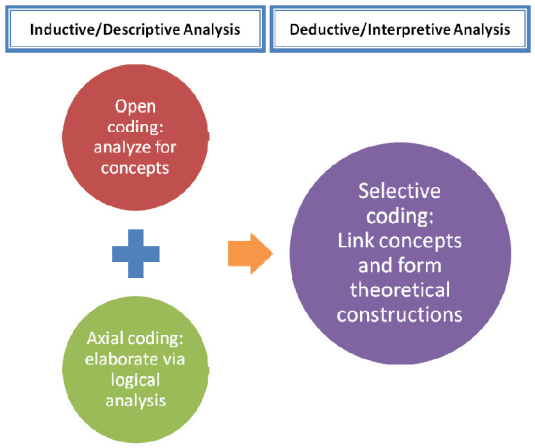

Figure 2: Steps involved in content analysis

Descriptive analysis

Coding may be approached in two ways, depending on which perspective the researcher uses. In an *etic* analysis, codes are imposed by the researcher, whereas in an *emic* analysis, codes are based on indigenous terminology (Patton 2002b). An *emic* analysis is a culturally-appropriate approach when working with indigenous groups. It requires the use of *in vivo* coding, whereby the codes are taken directly from the data set. Although the data set contains sensitizing concepts (terms introduced by the researcher), the present study focused primarily on the use of participants' terms to respect the existing cross-cultural barrier.

Open coding involves sifting through the data set to find ideas, patterns, and themes. The large volume of data is condensed down to key concepts or codes. Convergence and divergence are used to identify whether there are multiple perspectives surrounding a code. Convergence involves asking questions about each piece of information to ensure that it fits in the code.

Divergence calls for making constant comparisons within the code to understand its properties and layers (Corbin and Strauss 2008). Constant comparison helps identify deviant cases (where the data does not fit the code). Discussing this deviance ensures the validity of the inductive process.

Axial coding is concurrent with open coding. The codes are elaborated on, which may involve returning to the field for follow-up interviews to achieve saturation. During axial coding, logical analysis is employed to find where the codes intersect. Matrices may be used cross-classify the codes across two or three dimensions to enhance understanding and create sub-categories (Patton 2002b). Data cannot be forced into the concepts; the fit must be natural. Triangulation with external sources, such as literature, ensures the data was not manipulated.

Interpretive/deductive analysis

Through open and axial coding, the data is condensed down into clearly defined and saturated codes. These key concepts can now be formally connected together through interpretive analysis. This stage involves thinking conceptually to explain the context of what has been described in the inductive phase of analysis. Selective coding ties the codes together to form theoretical constructions (Creswell 2007). First, the context of each code is expanded upon. For this study, historical and social events helped structure the codes. Next, the codes are connected around a core theme, which can be a basic social process or a historical moment, to build up the hypotheses. Formal theory provides the theoretical explanations for what has emerged from the data set. The analysis of the interview data is described in Chapters 6 and 7.

Analysis of focus group data

Focus group data analysis involves a slightly different strategy since group interactions are considered. Framework analysis, a method developed by

Krueger and Casey (2000), uses theme development to analyze focus group data and to make comparisons between the three groups.

The five main steps to framework analysis include familiarization with the data, identifying a framework, data organization, coding by theme, and interpretation (Rabiee 2004). The coding procedure is similar to that for the interview data analysis, with open coding to identify concepts and axial coding to relate categories and sub-categories. During the interpretation stage, group dynamics come into play. One of the components of this step includes accounting for the frequency with which a viewpoint appears. Another criterion to consider is the internal consistency of each participant: does their viewpoint change if it is not part of the popular opinion? Finally, the degree of comfort the participant has in the group setting can be inferred by specificity of their comment: was it personal or hypothetical? These group interactions enrich the built theory and help explain how consensus was reached. The analysis of the focus group data is presented in Chapter 8.

4.2.5 Credibility of the research

Researchers strive for high quality research. In quantitative studies, validity (accuracy) and reliability (precision) are measured to determine whether the research was of good quality. In qualitative research, validity refers to "trustworthiness" of the analysis. Credibility carries the most weight in determining the quality of a study and is established by ensuring that substantive significance is achieved (Corbin and Strauss 2008). The three major criteria involved in determining substantive significance are as follows:

How does the evidence support the findings? The triangulation process is employed during axial coding to test the trustworthiness of the researcher's analysis. It involves determining whether there is agreement between several perspectives, including the researcher's interpretation, the

participants' responses, and an external reviewer's interpretation (in this case, colleagues and community collaborators) (Patton 2002c).

How do the findings increase and deepen understandings? The applicability of the research is considered by asking whether the results of the study can be applied to other research, programs, or interventions. A high quality study generates relevant and useful theories that can shape future work (Corbin and Strauss 2008).

Are the findings consistent with other work? The research conducted will either provide confirmatory significance or innovative significance. Confirmatory significance means that previous literature has explored the phenomenon of interest in your study. Accounting for the presence of the existing literature further validates the results generated from the study. On the other hand, innovative significance refers to the emergence of new ideas. If the study has identified a new phenomenon, there will be no existing literature to support the research (Corbin and Strauss 2008).

By meeting these criteria, the credibility of the research and the researcher is enhanced.

5. STUDY SITE

5.1 The Cree of Eeyou Istchee

The Cree of Eeyou Istchee have inhabited the subarctic region of Quebec for thousands of years, and their territory spans the eastern side of the James Bay basin. The Cree are members of the Algonquin language family and are, by tradition, nomadic hunters and gatherers who rely on resources of the land to survive (Rogers 1973; Gnarowski 2002).

Figure 3: The 9 Cree communities in the James Bay region of Northern Quebec

The Cree have adapted to a harsh climate. Their territory is subject to extreme weather since air currents passing over Hudson Bay collect moisture and cause heavy precipitation. The Bay is ice-covered during the winter, so temperatures are typically very cold (Brown and Wilson 2004). This region is part of the Canadian Shield, a massive geologic shield made up of exposed igneous rock from the Precambrian period, which has shaped the landscape to be rich in rivers, lakes, and swamps. The boreal forest covers most of Canada's land mass from Labrador to the Northwest Territories and is recognized by its abundance of conifer trees (Hyatt 1989). This vegetation

zone is home to many animal and plant species which serve as food, medicine, and tools for the Cree.

5.1.1 Traditional ways of living

Most of Cree culture revolves around the acquisition and preparation of food. Harvesting activities are based on seasonal cycles: between September and May, most of the hunting and trapping activities take place, while the summer months (June to August) are the best time to fish (Bearskin et al 1989).

The pre-contact diet was mainly composed of meat, fish, and fat. Wild berries and plants, the stomach contents of the caribou, and tree sap were the only sources of carbohydrate available to the Cree (Berkes and Farkas 1978). Meats were not washed so that they would retain their blood, and they were often cooked by boiling over the fire, and then lightly salted before eating. Delicacies were rubbed with blood, hung, and roasted over spits (Rogers 1973). Starting in the 17th century, contact with Caucasian explorers introduced lard, flour, and sugar into the Cree diet. These commodities were used to make bannock, dumplings, and doughnuts. These energy-dense, nutrient-poor foods were frequently consumed in large quantities when game animals were depleted. For example, in the 1930s-40s, up to 85% of total calories were provided by non-traditional food (Berkes and Farkas 1978). Today's traditional diet includes game meat, berries (mainly blueberries and cranberries), and carbohydrate sources such as bannock, "*puutin*" (steamed pudding), dumplings, or potatoes. See Figure 4 for images of typical traditional food plates prepared in Waskaganish.

Feasting was an important part of the culture. Animal feasts were held to celebrate the game obtained from the bush, and seasonal feasts held to commemorate the start of a new harvesting activity or movement (Rogers 1973).

Figure 4: Traditional food plates.
Left: *Puutin*, fried bannock (doughnut), goose meat, bear meat, mashed potatoes.
Right: Baked bannock with blueberry jam, fried fish (sturgeon and walleye).

In the past, the Crees' social organization was divided into 3 structures: community, hunting groups, and nuclear family. The community was a grouping of several hunting bands during the summer months at a set location, usually near important bodies of water. Many of the Cree communities that exist today are located at these traditional gathering sites. Hunting groups were made up of about 3 to 5 nuclear families, and these groups would camp and hunt together during the fall, winter, and spring. The nuclear family was the smallest, and most important, unit of organization. Within the family, the husband was responsible for securing food, which could be shared with the other families in the hunting group, and furs, which were essential to trade for supplies, and, in later years, cash (Rogers 1973).

5.1.2 Traditional spirituality

The Crees' traditional spiritual beliefs were linked to respect for the land and the animals they hunted. They practiced *animism*, where animals have their own spirits, which represents an idealized conceptualization of their being. Niezen has extensively explored the use of rituals, divination, charms, and dream revelations for hunting (1998) and the evolution of religious beliefs since the arrival of Christian missions (1997).

Spirit guides and shaking tent rites were used to allow people to communicate with animal spirits (Flannery 1939). Rituals were performed during the hunt, after the animal was killed, and while they were processed (Rogers 1973). Today, the influence of Christian beliefs has rendered such rites controversial.

Cree traditional medicine is holistic: it is a care system involving the use of medicinal plants and animal parts, traditional social relations among the band, knowledge of the local environment, and traditional spirituality (Gnarowski 2002). Healers were experts in the field of Cree medical practices: they were not only responsible for administering bush medicine, but also for providing spiritual care and for dealing with "*mideo*" (people with the supernatural ability to do harm). Today, the supernatural aspects of Cree traditional medicine are taboo. However, healers continue to incorporate Cree values into their healing practices and prepare their medicines by offering thanks to the plants harvested for the treatment and by reciting prayers for health to the Creator.

5.2 Waskaganish First Nation

5.2.1 Waskaganish today

Community setting

Waskaganish, located 1200 km northwest of Montreal, Quebec, has a population of about 1800 people (Statistics Canada 2008). The community is surrounded by five major rivers that open into James Bay: the Jack, Pontax, Rupert, Broadback, and Nottoway rivers (Knight 1967). The village is nestled at the mouth of the Rupert River, traditionally a major transport route which extends inland towards Lake Mistassini, about 485 km away.

This community is now accessible by air and by vehicle. A 100 km unpaved road links Waskaganish to the James Bay highway. The community is connected thanks to internet access, landlines, and cellular phone service. All

homes in town have electricity and running water. The water treatment plant has recently been upgraded, a condition met by Hydro-Quebec as part of the Rupert River diversion project.

There are two day care centres, an elementary school, and a secondary school in the community. The clinic, built in 1999, has ambulatory services, but emergency care requires a flight to Val d'Or. The Multi-Services Day Centre (MSDC), which is featured in all nine Cree communities, organizes activities for adults and Elders. Waskaganish has a police force and several trained firefighters. The strip-mall in "downtown Waskaganish" has a small restaurant, convenience store, banking services, and a post office. All administrators are employed at the Band Office. The community is currently headed by Chief Steve Diamond, who oversees community affairs and delegates responsibilities to directors within the Band Office.

About 20 km outside of the community, a couple of cabins can be found at a place called the "Gravel Pit". The Gravel Pit is across the river from Smokey Hill, a traditional fishery located at the first rapids upstream of the community (Francis and Morantz 1983). The people who live at the Gravel Pit have simple homes, lacking electricity and running water. They enjoy peace and quiet, away from the stresses of village life. Since the Gravel Pit is situated outside the community, residents are eligible to receive funds from the Income Security Program, a stipend awarded to Cree who spend a certain number of days in the bush hunting and gathering.

5.2.2 Post-contact history and modernization

The Cree first encountered European settlers when Henry Hudson arrived via Hudson's Bay in 1610, "claiming" the territory for the British crown (Barger 1981). The first official trading post was established at Waskaganish the spring of 1669 by the Hudson's Bay Company, named Fort Charles for the King of England. Three years later, the French captured the site and

maintained it until the British regained control in 1763, where it was thereafter known as Rupert House (Scanlon 2008).

For over two centuries, the Cree traded furs for hunting tools, such as rifles , steel traps, and wire snares, and staple foods, such as flour, sugar, and lard (Hyatt 1989). Those who hunted and trapped near the Rupert House trading post were in close proximity to the coast, and over the years, they tended to have more contact with non-natives (Adelson 2000).

Morantz describes the fur trade as an example of reciprocity, which is an important Cree principle (2002). The early years of the fur trade were a time of mutual benefit, where the interests of both the English, who managed the fur trade and the Cree, who orchestrated the fur trade, were served. The Cree were able to maintain their autonomy while benefitting from new technology.

The 19th century brought changes to the Cree of way life. Increased involvement with the Hudson's Bay Company caused their relationship to evolve, creating four categories of people: those who left the bush to work full-time at the post, those who mixed bush activities with seasonal employment at the post, those who relied on non-traditional food from the post during food shortages, and those who continued their traditional activities, visiting the post for trading purposes only (Francis and Morantz 1983). Although the majority of the people remained in the bush full-time, this shift is thought to be the catalyst for the spiritual, economic, and social changes that followed in the 20th century. The breakdown of the old way started at the turn of the century, with the arrival of residential schools, first established by the Church, and the loss of the fur trade (Scanlon 2008).

Christianity

In the 1840s, missionaries settled permanently at the trading posts. Reverend George Barnley of the Methodist Church, stationed in Moose

Factory, started the tradition of giving Christian names to the Cree. Reverend John Horden from the Anglican Church arrived in the 1860s, and he developed Cree syllabics for translating the Bible (Scanlon 2008). In 1872, an Anglican Church was established in Waskaganish; by 1880, they were running the post's only school (Knight 1967).

By the beginning of the 20th century, most Cree had adopted Christianity and accepted Christian doctrine. Throughout most of the 20th century, the Anglican and Catholic churches were the major denominations present in Waskaganish, though there were few Catholics in the community. In the early 1970s, Johnny Whiskeychan introduced the Pentecostal church in Waskaganish by. Many people converted, and today the Pentecostals believe he "saved" the community. The Pentecostal Church is the most omnipresent in Waskaganish today. Their doctrine has strict rules against drugs and alcohol. In 1989, the Gospel Fellowship church was opened, attracting a smaller portion of the population to its services. The Anglican Church is presently very quiet. A travelling Minister visits to perform sermons for special occasions and holidays. Father Provencher of the Catholic Church has lived in Waskaganish for over 50 years, and still lives there today.

The Cree have welcomed Christian teachings; today spiritual practices are considered archaic (Adelson 2000). Niezen believes that some aspects of Christianity are not compatible with the hunting lifestyle, citing the emergence of a duality, with people split between their religious beliefs in the village and the spiritual aspects of the bush (Niezen 1998; Scanlon 2008). Not everyone sees a contradiction between Christianity and bush life, focusing instead on respecting animals in the bush.

Appearance of government institutions/Shift to wage-based economy

In the early 1900s, interest in the resources of the north sparked the beginnings of a colonial relationship between Canada and First Nations

groups. The government officially "took possession" of the North in 1919 and the appearance of their institutions in the region soon afterward brought the imposition of power and financial supremacy over indigenous people.

During the Great Depression era of the late 1920s and early 1930s, the James Bay region experienced a severe species depletion, which threatened the Crees' health and the bush economy. This period of starvation caused many families to relocate so that they could be closer to the posts and obtain food, but they lived in poor sanitary conditions. Tuberculosis and other infectious diseases ran rampant (Vivian et al 1948).

The species recovery in the 1940s coincided with an increased government presence. A colonial structure was put in place, and the Cree experienced political domination by federal employees. Caucasians assumed control of the administration of the Crees' affairs (Knight 1967; Barger 1981). Government-controlled beaver quotas, territory demarcation, and welfare payments emerged (Knight 1967; Berkes and Farkas 1978; Boston et al 1997).

The government took over Waskaganish's summer school in 1950 and turned it into a winter day school. Children were expected to attend instead of participating in bush activities with their families. Families began to settle permanently at the posts, which gradually involved into communities, so that their children could attend school.

The biggest government-induced change was the establishment of a nursing station in Waskaganish in the 1950s (Knight 1967). Knight reported that, at the time of his fieldwork in the early 1960s:

> It may be of interest to whoever is concerned with the maintenance of cultural continuity per se to note that the local people consider the nursing station to be the most uniquely non-Indian of the white agencies, and they give it their most unanimous approval (1967 p30).

However, the rampant incidence of infectious diseases and the effectiveness of Western medicine against these diseases may have contributed to this perceived acceptability.

In the last 60 years, resource development and the government's desire to "conquer the north" have affected the Crees' ability to participate in bush activities (Barger 1981; Tanner 1999). Hydroelectric development on traditional hunting lands began in the 1970s and has had the most profound effect on the territory (Hornig 1999; Tanner 1999). For example, the construction of roads to transport supplies into the region not only disrupted animal patterns and behaviours, but also affected trap-line management. This affected the willingness to spend time on the land, and a greater influx of people settled in the communities.

With all these changes, Stephen Hyatt, who conducted extensive fieldwork in northern Quebec and Ontario in the 1980s, found that

> Studies of the Cree Indians indicate a people under pressure to abandon their traditional lifestyle and culture. Resisting acculturation as best they can, the Cree are caught up in a fragmented world of old and new social norms and values (Hyatt 1989).

This observation was corroborated by Ronald Niezen's work with the Cree. As mentioned previously, he noted that the Cree continue to struggle with a dual lifestyle (Niezen 1998).

Since settling in permanent communities, the Cree have become more sedentary and are no longer living a life based on subsistence. Their traditional lifestyle has been replaced with a "modern" way of life. Increased access to market food, especially processed food, and decreased reliance on traditional food has led to a shift in diet. These changes are not unique to Waskaganish. Indigenous groups throughout the eastern subarctic region have been affected by a similar process (Young 1988).

5.3 Study Participants

5.3.1 Interview participants

10 interviews and 6 follow-up interviews were conducted with 12 participants. The majority of the interviews took place one-on-one, and two Elder couples requested they be interviewed together. Translations were necessary for three of the interviews and two of the follow-up interviews, all with Elders, and were provided by their family members. All of the participants indicated that were from Waskaganish.

I interviewed 5 adults; 3 males and 2 females, between the ages of 35 and 54 years. All of the participants indicated that they were employed. While the males were employed on a full-time basis, both women indicated that they worked occasional jobs. Their attained level of education varied from some high school to post-secondary diplomas. All but one participant received their early education outside of Waskaganish: 2 participants were sent to residential school and the others went to Fort George (now Chisasibi).

Seven Elders took part in interviews; 4 men and 3 women, between the ages of 55 and 87. Only one Elder indicated that she was currently employed full-time. The rest of the participants were beneficiaries of the Income Security Program and indicated that they continue to spend a significant amount of time in the bush. A few Elders indicated that they received pensions as well. The older Elders attained a limited level of formal education, with 6th grade being the upper limit. Those with some elementary school education had been in the residential school system. Three of the participants stated that they were educated in the bush. One Elder, who was sent to residential school, also obtained a university degree.

5.3.2 Focus group participants

The focus group sessions involved three sets of participants. For the session with health care professionals, 6 participants from the Clinic joined the discussion. This group was made up of Cree and non-native individuals. When the community members were invited to participate in the sessions, 10 participants took part in the discussion. There were 4 adults and 5 Elders in attendance, as well as one non-native individual who is a resident of the community. The focus group session at the Gravel Pit brought 23 Elders to the discussion, although only 12 actively participated and shared a story or opinion during the session.

6. MODERNIZATION IN WASKAGANISH FIRST NATION

Overview

The analysis of the interview data revealed two core themes. This chapter focuses on the impact of modernization on Waskaganish. The participants described how aspects of the culture have evolved over time.

Figure 5 illustrates the major findings discussed in this chapter. The core theme is centralized by the selective codes of traditional food habits, participation in traditional activities (bush life and acquiring traditional knowledge), and the willingness to use traditional medicine. The previously described changes, namely the appearance of missionaries and government institutions and the shift to a wage-based economy, are historical processes that helped structure these codes. The initial themes generated via open and axial coding are elaborated on in each section with relevant quotes. This data was triangulated by existing literature and consultation with the community collaborators.

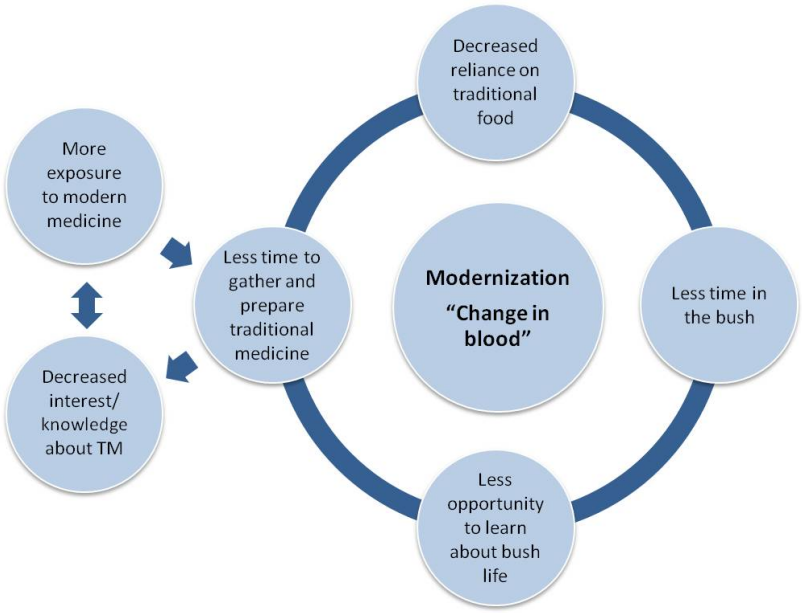

Figure 5: Process describing impact of modernization in Waskaganish

6.1 Changes in the Food System

The Crees' food system was traditionally based on subsistence. Hunting and trapping activities, and thus, the amount and type of food consumed, varied during the seasonal hunting cycle. Today, this is no longer the case, as summarized by one of the participants:

> "And these days, we have no problems with food. Food is abundant, we have a lot of choices, to choose, and we usually eat what is good to our taste buds. We are more fortunate these days than they were in the past. My days it's different than what my ancestors went through. We are more fortunate." (A02)

Over time, new foods have been introduced into the traditional diet. This has altered food consumption patterns and modified the traditional methods of food preparation. The introduction of a monetary-based economy and access to the community by vehicle has increased the reliance on foods available at the grocery store.

6.1.1 New foods introduced into the traditional diet

Many respondents stated that traditional food was still a regular part of their diets, with all participants reporting that they eat traditional food at least once a week. However, this does not provide a complete picture of peoples' eating habits. A quantitative analysis of eating habits in Waskaganish based on food frequency questionnaires conducted by the Cree Health Board in 2008 is forthcoming in a future publication. The present study used a qualitative approach for understanding eating habits.

The increased reliance on market food from the grocery or restaurants has led to a decrease in the frequency of traditional food consumption. One of the Elders pointed out that,

> "People used to live off the land, they had to because they didn't have jobs, so they had to search for food off the land." (E09)

Today, there are more employment opportunities, so fewer people are able to leave the community for long periods, reducing their access to the resources available in the bush. Thus, when asked to free list which non-traditional foods make up the participants' diets, meat products (beef, chicken, and pork), junk food, and pasta were the items most frequently mentioned. Fruits and vegetables were rarely mentioned, unless probed for during interviews, which occurred in 10 out of the 12 interviews. However, the younger generation expressed a desire to include fruits and vegetables in their daily diets. One of the participants mentioned that:

> "I try to eat salad with every meal – green salad. I'm trying, when it's a home cooked meal, but not when we have pizza…" (A08).

Meanwhile, the Elders noted that they are not used to fruits and vegetables:

> "I'm not in the habit of eating them. In the past, I didn't eat them, now, I'm not used to it." (E10)

> "Fruits, we buy oranges, bananas. Vegetables, we buy carrots and tomatoes. But we don't really like them. We just eat them when we're hungry or when there is no traditional food around." (E03)

Although there is interest in including fruits and vegetables in the daily diet, their availability and freshness in Waskaganish remains an issue. Several respondents mentioned that people with financial means and access to a vehicle will purchase their fruits and vegetables "down south" (Amos or Val d'Or). One of the adults mentioned that since her husband travels frequently, he will buy their produce down south because it is more affordable and of better quality:

> "The prices at the grocery store are a big issue and freshness is an issue, especially fruits and vegetables and bread products." (A06)

Snacks have become an integral part of the food system today. Snacking was explored further during the follow-up interviews. All of the participants involved in the follow-up mentioned that they consume snacks. My observations that carbohydrate-based snack foods are preferred were confirmed by the participants, who listed cookies, canned fruit, pie/cake, or toast as their snack food of choice. Surprisingly, bannock was only mentioned by one Elder as their favourite snack food. It appears that the access to pre-packaged foods means that people are consuming more unhealthy foods than they did in the past:

> "The whole floor [at Northern] is all junk…. And it's easy to get it." (A05)

> "I don't like to eat chips, but I still eat them. They are hard to resist. [*laughs*]. Cookies, I eat cookies sometimes, but like I said, it's hard to resist. I don't want to eat them, I know that they are bad for your health. Sometimes it's hard to say no." (A02)

One of the Elders agreed that it is easy to give in to a craving for these types of foods:

> "When I go to the store – I stopped eating chips about two years ago – and when I go to the store, I close my eyes when I pass the aisle so I don't have a craving…. When you walk into Northern store, the first thing you see is what you used to eat, even though you stopped eating it. And then that's when it's really hard because you remember what it tasted like and then you start craving for it, and then some people end up buying it." (E07).

Like feasting, snacking has become a social phenomenon in Waskaganish. Snacking has been defined as the "spontaneous and irregular consumption of food," lacking structure and ritual (Mäkelä 2000). However, in Waskaganish, the consumption of snacks is considered an eating event, or, as described by an Elder, a "pastime" (E07). These eating events have a social component

because they involve sharing food while in the company of others. The snacking period is structured: since the local restaurants are in close proximity to the Band Office, employees frequently take their morning and afternoon breaks to the Lodge with their colleagues, where tea or coffee with a dessert (cake, pie, pastry, or fruit) is the snack of choice. Snack breaks, where tea and cookies or fruit are served, are a permanent fixture at meetings or informal gatherings.

Increased consumption of snack foods that are high in refined sugar and flour is worrisome and, as seen earlier, they have been cited as unhealthy by the participants. They recognize that the frequency with which refined snack foods are eaten should be decreased. Research has shown that these types of foods have a high glycemic index, meaning they are rapidly digested and induce a high peak in blood sugar, as seen in an oral glucose tolerance test (Roberts 2003). Foods that are rapidly digested are associated with low satiety, thus increasing hunger between meals (Anderson and Woodend 2003). Overeating may result from the high consumption of low satiety foods.

Soft drinks contribute to a large proportion of caloric intake, particularly among youth. Studies with indigenous communities have revealed that the consumption of soft drinks is very high, especially among teenagers (Thiele and Boushey 1989; Wharton and Hampl 2004). In Mistissini, food intake analysis showed that about 35% of men and 45% of women consume sweet drinks, with an average intake of 1.5 cans per day (Bonnier-Viger et al 2007). The group of individuals I interviewed were aware of the danger of soda, and reported consuming it in limited quantities. Although diet sodas are preferred over regular soda, they are often paired with junk food, such as pizza or poutine.

6.1.2 Evolution of traditional food consumption patterns

Traditional food indicators

We wished to understand how and why traditional food consumption patterns have changed. A survey on which traditional food items are used the most and which have fallen into disuse was administered during the interviews. Recognizing the diversity of the traditional diet, we chose to look at the following indicators: animal broth, animal grease, Labrador tea, berries, and game meat (refer to Semi-Structured Interviews in Appendix 1).

Animal broth, referred to as "Indian juice" by one of the Elders, is traditionally prepared by boiling animal meat in water, and was used as a stock for soup and stew or as a beverage. Today, animal broth is sometimes used for stocks and stews, but not as a beverage: it has been replaced by juice and soda:

> "But these days, they [youth] really don't want to eat broth…. because they don't see it that much, it's not cooked as often as it used to be. I had a lot of broth when I was a child, but kids these days eat more of the poutine and store-bought food. So whenever somebody wants to give it to them, they say no, I don't know what that is. Or they say that they never tasted it and they don't want to taste it." (E09)

Animal grease is still popular as a dip for meat and fish, and is served with traditional meals by all but 2 adults. In particular, bear grease is considered a delicacy and is used as a dip for smoked meat (E10). Today, these greases have been replaced by lard, butter, and margarine as a cooking or baking fat. However, several of the Elders mentioned that they prefer using animal greases (particularly goose grease) when frying meats or making bannock:

> "The grease is better than lard in the store." (E03)

In the past, plants such as Labrador tea were used to make tea. Today, people prefer store-bought tea, which is served with milk and sugar. Furthermore,

only one participant was aware that other plants, such as the creeping snowberry, may be used as tea. However, four of the participants (2 adults and 2 Elders) did mention that they will sometimes drink Labrador tea, usually for medicinal purposes.

The boreal forest is home to many edible berries. The region around Waskaganish offers a variety of berries, including crowberries, cloudberries, raspberries, and snowberries. Despite this, blueberries and mountain cranberries remain the most popular berries foraged in the late summer and early autumn. The participants in this study only mentioned blueberries and described how they use them: for jam, eaten fresh, or added to bannock.

The most popular food items today are large game. Small game is deemed less efficient to hunt. One Elder noticed that they are less abundant than in the past.

> "The food is not as available here compared to when I was growing up…. There was more abundance of traditional food, like partridge and rabbit. Today, these animals are a dwindling food source." (E10).

Additionally, the quantity of meat provided by the larger animals is ideal for feeding families:

> "When somebody kills a moose, there is lots of meat, and you have plenty to last you for a while. So you know you have at least maybe a month's supply of moose meat and you don't have to worry. You can have a traditional meal." (E09)

However, despite the efficiency of hunting for large game, goose and fish are the most accessible traditional foods. There are more activities dedicated to acquiring these foods, with goose breaks scheduled twice a year and the Fish Bonding Run at Smokey Hill held every fall. These traditional foods are omnipresent at special events. One participant remarked, "At a party or feast, there is always geese" (A06).

Conditioned food preferences and aversions

Food choices have been extensively studied using biological, cultural, behavioural, economic, and anthropological models (Batal 2001). Batal described the sociocultural determinants of traditional food intake among indigenous groups in northern Canada by looking at age, employment status, cultural beliefs, and food availability as variables and market food affordability and the cost of hunting and fishing as traditional food correlates (2001). In the present study, traditional food intake was associated with taste, cultural values, and environment.

Taste is a learned behaviour, often associated with positive or negative responses, such as: "It tastes good" (A08) or "I don't like the taste" (A06). Taste aversions may be associated with decreased access to the bush. When out on the land, traditional food is consumed every day. One of the Elders mentioned that he does not eat traditional food as often when he is in the community. When asked which traditional foods were least liked, a pattern emerged: with less exposure to particular traditional foods, there is a greater chance of aversions towards them. Furthermore, many adults and Elders between the ages of 45 and 65 years of age were sent to residential school. One of the Elders has noticed the impact:

> "So many things have changed since children were taken from their home and sent to residential school because their diet changed as soon as they left. They don't eat traditional food as much as they used to." (E07)

A few of the participants in this study were sent to residential school, and they acknowledged that their diets shifted dramatically when they were away. Some stated that they still feel disconnected from their culture because they grew up away from the bush.

Tastes are rooted in personal preference. Some people will not eat a particular food because they do not enjoy it. For example, fox, muskrat, and porcupine were a few of the foods that the participants stated they did not enjoy. Predatory animals and greasy fish or birds were also associated with a negative response. Preparation of these foods played a role: overcooked meats were not favoured by the participants.

Traditional food preferences are also rooted in culture: "It's what I was brought up with" (E10). However, with the increased use of market foods, aversions to particular traditional foods have become more common. One of the major aversions is to "starvation food." Starting in the late 1800s and peaking in the 1930s, the Cree experienced a major food shortage, due to over-harvesting of game animals by non-natives (Berkes and Farkas 1978). The elderly Elders remember and share stories of past food shortages with the younger generation as a reminder of how fortunate they are today. The foods identified with starvation include small game, such as porcupine and skunk, and lichen.

> "I heard in the old days they used to eat that [skunk] because of famine, lack of food, that's one of the only options that they had, they had no choice to eat it because they won't survive." (A02)

Some of the participants identified environmental factors as a cause for aversions. Changes in the environment have had a negative impact on hunting and trapping. The expansion of Waskaganish has shrunk the trap-line of at least one of the community members. As one of the Elders stated,

> "Since the development has started, lots of roads, and lots of areas have been [disturbed]." (E10)

Many reported that there is more pollution and contaminants present in the environment, and the area is not as clean as it used to be. The presence of

garbage in the community attracts foxes, wolves, and bears. The animals that eat trash are unappealing to the participants:

> "There's more and more animals that we decide not eat …. So there's quite a few animals that they used to use as their food but now ... they're ... I guess there was a time when where it was still ... the environment was more healthy, but now we see where those animals hang around." (A01)

With the increased number of homes and cars and the accumulation of material goods in the community, there is more pollution and waste, and this has negatively affected the environment.

6.1.3 Traditional food preparation: Adaptation to modernity

The preparation of traditional food takes place at many homes in Waskaganish. I observed that several residents in the community set up cooking tepees in their backyards to make traditional meals, demonstrating a desire to preserve the use of traditional preparation methods.

However, many participants mentioned that they don't have a lot of time to cook traditional food. As a result, cooking methods have become faster. The preferred way of cooking traditional food, such as geese, involves plucking the feathers, removing the organs, deboning it, and hanging it to roast over an open fire ("*sakapwaan*"). Throughout this process, someone must constantly tend to the fire and collect the grease drippings. The traditional method for food preservation requires thinly slicing goose meat or fish and slowly smoking it over an open fire until dry ("*piyesuunameshtekw"*). Today, with stoves available in homes, these processes have been replaced by roasting, frying, or boiling the meat. Microwaves have also made food preparation more convenient and less time-consuming. By freezing fresh game meat, fish, or birds, they do not have to be smoke-dried and can be stored for a long time.

Many participants reported that their traditional meals have been adapted to modern times. For example, animal broth may be boiled with oats and rice or macaroni and served with bannock. Vegetables are increasingly included in traditional dishes. Potatoes are considered a staple food in Waskaganish today, and they are served at feasts, with meat or fish and bannock. Other vegetables have been incorporated into traditional meals. Goose prepared over the open fire may be served with peas and carrots. A few participants mentioned that they make stew by boiling moose meat with vegetables. One participant makes a stir-fry with game meat, adding vegetables and rice to the dish. Elders also reported including vegetables in some of their meals. However, one Elder says she does not like adding vegetables to her rabbit stew because it changes the taste. Meanwhile, another Elder stated:

> "I noticed that I am preparing different meals, and it's better in a way because I'm adding all these different vegetables, carrots and potatoes – I add these things that I never used to add before." (E12)

Although food practices and habits have changed over the years, it is clear that traditional food remains an important source of nourishment and pride.

6.2 Changes in Cultural Practices

Traditional knowledge use, the level of participation in bush life, and the evolution of cultural activities and values was explored.

6.2.1 Current use of traditional knowledge

Learning about traditional ways of life is an ongoing process. Even the Elders, who are the main keepers of traditional knowledge, mention that they are "still learning" (E04). It became apparent, as described below, that this knowledge is needed not only for safety and survival in the bush but also for the identification, capturing, and preparation of traditional food.

The participants identified the skills that are essential to stay in the bush. Land management is the responsibility of a tallyman, who is assigned to be the custodian of a particular parcel of land. The tallyman administers his trap-line and respects the cycles of the animals that live on it (Bearskin et al 1989; Feit 2004). As such, each season, a hunter will only visit one particular sector of the trap-line "to allow the animals to breed and populate" (A02).

A skilled hunter has a stellar sense of direction, awareness of weather patterns and tides, and intimate knowledge about the plants and vegetation on the trap-line. Building a sturdy camp site requires the appropriate tools and materials to build tents, tepees, and a fire. A successful hunt requires knowledge about constructing blinds, setting snares and traps, and shooting. Once the game is captured, it must be prepared for cooking, which includes identifying whether the animal is fit for consumption and selecting the appropriate cuts of meat for feasting, sharing, or keeping. Finally, the right wood is needed for cooking (several Elders indicated that balsam poplar – *Miitus* – is preferred). One of the participants summarized:

> "You have to know how to make your tools, you've got to be almost like a craftsman, so you've got to know how to make your tools. And again, you have to be very knowledgeable in the environment, the terrain, the weather ... you almost have to be a meteorologist too. And you almost have to be like a compass too, you've got to know where south, north, and west is. If it's stormy, blowing snow, you couldn't see a foot in front of you..." (A01)

Learning vs. Teaching

The Cree have a strong oral tradition, whereby stories and life lessons are passed on to future generations. Knowledge translation usually takes place by observing parents and Elders. Traditional knowledge should not be imposed on the individual or "taught". Although the Cree culture classes taught at the school are a great initiative, the willingness *to learn* traditional ways must come from the individual. This is confirmed by the participants:

> "Today, traditional knowledge is obtained from Elders … those that are close to 80 years old. They are happy to tell you about it if you ask, and they are happy that you picked them to ask about it." (A08)

> "It's up to the certain person if he wants to learn from an Elder." (E12)

The participants indicated the importance of seeking to learn about traditional ways from Elders, which must be emphasized to the younger generation now. They stated that "it is important to preserve the knowledge with traditional teaching" (A06). One of the adults who attended residential school admitted that since they have just started going into the bush, they do not believe they know enough about traditions to pass on to the next generation.

6.2.2 Bush life & modern lifestyle

The time spent in the bush has changed dramatically since permanent settlement in the community:

> "Yeah, back then people would leave here and they would spend at least 10 to 12 months in the bush and then come back with food and share. But now it's more in and out, you know? Everyone is living more like you're settled here so you don't have camps. So that's more like the people who are living the modern lifestyle, I'd say." (A01)

Living in a modern community means work and other commitments, so there is less time available to dedicate to traditional practices. All of the participants indicated that their participation in hunting activities has significantly decreased. Some of the adults mentioned that they don't have time for the bush because they are busy raising a family:

> "I go less and less now.... because I had to raise my kids alone, make sure they go to school, and be there for them. Once they are out, I'd like to go to the bush to grow old, I think." (A08)

In the past, children were raised in the bush, so they were exposed to traditional ways of living on a daily basis. One of the Elders referred to his education taking place at "Eeyou School" – in the bush. Today, children are taught about bush life at school (not necessarily learning about bush life, however), but they have few opportunities to apply their skills in a practical manner. One of the younger adults expressed his apprehension about taking his young children into the bush because they don't know how to be safe.

In the past, most of the year was spent actively hunting in the bush. These days, people who work or are raising their families are only able to hunt during the holidays or on the weekend. Fortunately, many people in the community spend time in the bush during the prescribed time off. Goose break takes place twice a year, with 2 to 3 weeks off in the spring and 1 week off in the fall. During goose break, the schools and Band Office shut down, and almost everyone leaves for their respective camps. However, much less time is dedicated to hunting for big game or even fishing. One of the adults stated:

> "We stay there longer when we hunt [for goose], for a month, and spring or fall. We stay long. And the moose, we don't stay long, we just go get it…. Where for fishing, before people were fishing a lot. But now, it's ... people don't do that anymore, not much. I used to stay with my grandmother, I'd stay after school was finished, and go stay with my grandmother for a month. We'd go fishing…. [Today] I go with my parents ... I only go out for the day or the weekend. I sometimes go with my brother-in-law, just for the day or a few hours." (A05)

The Elders, who are either retired or receive funds from the Income Security Program, spend more time in the bush. One of the Elder participants mentioned that just he and his wife will stay out at their camp during the fall and the winter. The rest of the family will join them in the spring for goose break. However, times have changed:

> "It's different now because we don't stay out on the land as much, because of our children and grandchildren. We don't live in the bush with our children and grandchildren because they have jobs and our grandchildren are in school, so we're in the community. To spend time with our children and grandchildren, we come and stay in the community for a while. In our younger days, when we were just a new couple, a newlywed couple, we didn't have as many children, we were in the bush year-round, hunting and trapping. It's decreased now, because the children don't have time to go spend time in the bush with us, maybe only in the spring." (E12)

If the Elders want to be able to share their knowledge with their children and grandchildren, they too must consider how long they spend in the bush.

In today's monetary-driven society, the acquisition of goods is common. Many camps are now accessed by motorized vehicles: most people who live in Waskaganish own cars or trucks, snowmobiles (used after the freeze-up), or motor boats (used after the thaw). These vehicles carry an additional cost for gas and maintenance. These costs must be considered when traditional food is brought back to the community:

> "These days, it's snowmobiles, no more dogs. It's just the way the change of living, whether you use a motor on your boats, it's changed a lot. For snowmobiles, it went from dog teams to snowmobiles ... it went from walking to skidoo, so... so now, you understand, when people give you food, they know that they used gas or a motor to get where they want to go or when they want to go to kill the geese for food." (A01).

One of the Elders has noticed that the use of these vehicles has affected the animals and the ability to hunt them:

> "I go into the bush because that's where the food is. You do your hunting there. But, there is a lot that is not there anymore – it's not like it used to be. The mode of transportation has changed. People use skidoos to get around now. For example, the ptarmigan is not around

> anymore because of the interruption from technology and machinery." (E10)

The accumulation of personal possessions may also be a deterrent for spending time in the bush. One of the participants expressed her reluctance to leave: "It's hard for me to when there is no one to watch my house." (A06)

Several Elders linked modernization to a decrease in physical activity. Although motorized vehicles are a faster way to get around, they do not promote an active lifestyle, whether people stay in town or go into the bush:

> "The amount of activity has lowered because of motors and cars – they slow *us* down. I'm addicted to my truck now. It is so easy to go to the store. In the past, I was out all day, on my feet." (E03)

With fewer opportunities to stay active, it is more difficult to maintain energy balance (where energy intake is equal to energy expenditure). When an individual reaches positive energy balance (intake is greater than expenditure), weight gain occurs.

6.2.3 Evolution of cultural activities, practices & values

We chose to analyze the degree of participation in cultural activities and to study cultural values to get a better understanding of the current level of cultural adherence. The perseverance of traditional ways is essential to ensure their survival into the future. We focused on languages spoken, participation in walking out ceremonies, knowledge of traditional songs/dances, and food sharing practices and values as indicators of cultural values.

Language

Language is frequently employed as an indicator of cultural adherence because loss of language is often linked to loss of cultural traditions. For example, a qualitative study with Inuit women identified culture and

traditional knowledge as major determinants of health, and acculturation, coupled with loss of the language, were associated with disconnection from the community and problems with social inclusion (Healey and Meadows 2008).

The Cree have maintained their language, with help from the Cree School Board's mandate to teach Cree and the of use syllabics during the formative years. All of the participants in this study indicated a strong desire to keep their language intact - they speak Cree at home, at social events, and in the bush. According to one of the Band Office employees, Cree is frequently used in the workplace (A01).

However, community collaborators have pointed out that in Waskaganish, the Elders and the younger generation speak two different dialects of the language. Whereas the Elders speak “traditional” Cree with a vocabulary more heavily based on traditional lifestyle, the younger people tend to incorporate English words into their conversations and have created a modern dialect. There are concerns that some traditional vocabulary words will be lost as the Elders age and eventually pass away.

Walking-out & first snowshoe walk

The walking-out ceremony is a traditional celebration to present young children to the community. The ceremony begins in a tepee, where the child receives a blessing from the Elders. The children are given miniature versions of the tools necessary for bush life to symbolize their role in Cree society. They then take their “first steps” out of the tepee for all to see. In Waskaganish, this tradition has seen a revival in popularity in the last couple of years, although not everyone takes part. Although the walking-out ceremony is usually a family function, community-wide walking-out ceremonies, where all families can participate, take place as well (usually at

the *Miichiwaahp*). All but 2 of the follow-up participants (both adults) reported participating in this ceremony for their children and grandchildren.

The first snowshoe walk is another "coming of age" ceremony. One of the Elders (E09) explained that this event takes place when a child is 6 or 7 years of age, where they are fitted with a new pair of snowshoes. During the walk, the boys will drag a beaver behind them to signify the start of a successful hunting career and the girls will carry an axe or teapot to resemble their role in maintaining the camp site and cooking. This ceremony had not been practiced for many years in Waskaganish; in the last couple of years, it has seen resurgence in popularity. Some of the families will hold their own snowshoe walk, and the primary school has been organizing one for the first graders for the last couple of years.

Traditional songs and dances

During the follow-up session, we wished to explore whether the participants knew any traditional songs and dances. Fiddle music was brought over by the Scots, and is considered traditional by many people in the community today. Square dancing is also considered traditional, and it is popular activity at special events. However, when it came to traditional songs and dances, all of the participants, including the Elders, indicated that they were not familiar with them. It is difficult to understand why this is the case. One of the Elders stated that when they were young, "It was all of the Elders that sang the traditional songs" (E11). Two of the adults mentioned that they heard Cree lullabies when they were younger, but they didn't remember what they sounded like. Another adult recollected hearing an Elder sing a song in Cree and said that the words came to mind occasionally.

A couple of the participants linked traditional songs and dances to drumming, which is considered a controversial practice. However, one Elder pointed out that:

> "People did sing traditional songs, but not with a drum. People had drums, but they would use them out in the land, but never on the reserve or... They used to use them on hunting grounds. It was mostly the Elders, and the young people didn't play with it, the drum." (E07)

The drum was used as a divination tool to help with the hunt. This Elder believes that is disrespectful to use the drum for entertainment purposes. He describes the use of the drum from what he remembers when he was young:

> "People weren't dressed – you know how they're dressed in all the feathers? – it wasn't like that. Back in the old days, when the Elder would play their drum, in the evening, they would inform whoever was in the camp, and then, when they would go to bed, when the Elder would go to bed at night, and then ... he would dream about the drum, and it was as if the drum was telling him, telling the Elder that ... where the game was. So, next morning, he would get up and would go towards where the drum said he would find the game, and then he would eventually find the moose or the bear tracks." (E07)

Many people in the community listen to the local radio station, which plays a variety of modern music – from pop to hip-hop to classic rock. Gospel music is also very popular among community members, especially those who participate in religious services at the Churches.

Food sharing practices

Food sharing practices were chosen as indicator for understanding whether traditional values have changed over time. Sharing and reciprocity are two important values, especially when considering the food shortage of the last century. We wanted to know if these values are still important today, and if, so why?

One of the adults explains how food sharing worked in the past, as he was told by his father:

> "Yeah, my father used to say that when they were younger, there weren't enough animals to find. They used to share a lot…. People used to do it in the bush, at their camp trap-line. They used to make these wood ... they used to call it "*teshipitaakan*," it's a suspended floor, it's where they used to put their meat, so anybody that needs it can pick it, pick the meat without asking…. Everyone would take turns to share. It's how people helped each other for a long time." (A05)

Rolf Knight observed as early as 1960 that with the establishment of residences, there was less sharing of goods than in the bush (1967). When asked about current food sharing practices, most of the participants in the present study indicated that they tend to share the food they hunt only within the immediate family. If there is any food leftover, then it will be shared with friends. Most of the time, however, food shared between friends involves payment to help defray the cost of gas and supplies and to compensate for the time spent acquiring food:

> "But sometimes we do give money to them even though they took it for free, you know how these days it takes gas, or ... you know ... at least we're helping." (A01)

Family and friends will offer traditional food to Elders as a sign of respect. One of the Elders explained that due to his advanced age, his participation in the bush is limited to the goose break. His sons-in-law will send him large game and his grandchildren bring him geese, and sometimes community members will bring him small game (rabbit or fish) and beaver. Another Elder indicated that even though his health is poor, he still set nets in the winter to catch fish and shares with those who are unable to hunt.

When asked why the tradition of sharing food is important, the participants explained that they were taught to share. There are positive qualities associated with food sharing: it shows character and respect for others in the community, it is honourable to help those in need, and it reflects your

generosity. One of the Elders lived through the tough starvation period stated that:

> "That's how it was in the old days. People were always willing to share because they knew that some people were short of traditional food, and I saw that the ones who had plenty were always willing to share with others. It was as if people always remembered about the starvation and that's how we began sharing the traditional food because we didn't want anybody to suffer with an empty stomach." (E07)

Many traditional practices have been influenced by modernization, but some aspects of the culture remain intact. While the time spent in the bush has declined and the tools available for the hunt are more sophisticated, the Cree language and the values associated with sharing food continue persevere in the community.

6.3 Changes in Traditional Medicine Use

The community's current traditional medicine practices are explored. This topic was difficult to analyze as the small sample had diverse opinions and beliefs. However, the differences within such a small group may reflect how reaching consensus on reintroducing traditional medicine in Waskaganish faces many obstacles. While this study is a preliminary step, the discussions about traditional healing with these participants can serve as an indicator for how future work could proceed with the rest of the community.

The Cree traditional medical system involves more than just using plants and animal parts for healing. The focus of the present study was on the medicines from a therapeutic standpoint, but some of the supernatural aspects of the medical system were also discussed.

6.3.1 Current level of use

First, we wished to establish whether traditional medicine is actually used by community members. All of the participants, when asked who they went to see when they were not feeling well, answered that they visit the doctor or nurse. One participant mentioned that they consulted with an Elder to obtain medicine for sores, for someone else.

Many of the respondents said that they did not know of any healers in Waskaganish. In this community, it became apparent that traditional medicine makers and healers (*medicine people*) are not necessarily the same thing. One of the community collaborators clarified this point. He described healers (*medicine people*) as those who are knowledgeable in different ways of healing, including the use of medicinal plants and traditional healing methods. People who prepare traditional medicines are considered as those that "know which plants to use as medicine" (E12). There are several Elders in the community with knowledge about medicinal plants. Some of the Elder participants mentioned that they have been asked to prepare medicines for others or will prepare their own treatments, but they do not consider themselves healers:

> "We use what's inside the trees, the sap and inner bark, that's what we take and use." (E11)

> "There is a woman here who took a bullet in her elbow. It was me that helped her – I put some powder, some balm, to push it. That's what happened. There was an accident, she took the bullet here, and she took medicine from the bush [to heal]. She never went to see a doctor." (E10)

> "I use the gum from *Inaasht*. The medicine that comes from plants never expires – you know how from the clinic you get medicine and it expires after certain months? That kind of medicine [plant medicine]

> never expires. I have a scar here – I was in the bush and I had a cut, and that's all I used – the gum from the fir tree." (E12)

We polled the participants to find out if they have used traditional medicine. The response was split: six (out of twelve, four of which were Elders) of the participants had used traditional medicine themselves in the past. Of those who had not used traditional medicine before, three said that they have obtained traditional medicine for a family member.

All of the participants indicated that they had some knowledge about traditional medicine. A variety of medicines was named, but their cited uses were limited to a narrow range of ailments, such as cuts/wounds, infections, coughs/colds, or rashes.

Medicines obtained from animal sources were mentioned more frequently than plants. Bear grease (*kaakuushipimii*) and castoreum (*wiishinaawaapuu*), an excretion for scent-marking released by the beaver which constitutes a mixture of urine with the contents of castor sacs (Walro and Svendsen 1982), seem to be the most well-known medicines. The participants stated that they have obtained bear grease to help treat a family or friend's rash or have received it to reduce the severity of a cough. Meanwhile, castoreum was the medicine of choice to seal cuts and prevent infection. The most frequently mentioned medicinal plants included *Rhododendron groenlandicum* (Labrador tea or *Kachichepukw*) and *Alnus incana* (gray alder or *Atushpi*). Labrador tea was seen used to treat colds and urine problems. Gray alder is used by an Elder from the Gravel Pit to treat mouth sores or rashes in young children. This Elder is actually the only known medicine woman in the Waskaganish area today, and she is trusted and respected by many as a specialist in maternal and paediatric care.

Conventional medicine has largely replaced traditional medicine. Bush kits were created in the early 1980s to provide conventional supplies for treating

medical issues in the bush. These kits further decreased the need to rely on the forest for sources of medicine (Lavallee et al 1990). The Crees' traditional medical system evolved to deal with illnesses encountered in the bush, primarily of an acute nature, such as colds or infections (Marshall 1989). Today, however, more people suffer with chronic illnesses, most of which require contemporary treatment. Consequently, some people feel conflicted:

> "What about for your kidneys and if you are on – what do you call it – [dialysis]. Who do you go to? The Indian doctor or the white doctor? I don't think that the Indian doctor can help. I have many questions of my own. I have a pacemaker for a blocked artery, and I needed a white doctor. With Indian medicine, there is no pacemaker." (E03)

Similarly, one Elder mentioned that he doesn't use traditional medicine as frequently as in the past because he has concerns with mixing conventional and traditional medicine:

> "It's because of the medication that we presently get from the Clinic and is given to a person to take for a certain amount of time. They can't really take the traditional medicine because I don't think it should be mixed together. The medicine from the Clinic stops or blocks traditional medicine." (E12)

Although the older generation have more experience with traditional medicine than the younger generation, the modernization of the medical system has diminished their use, even for treating common ailments. A closer look at the attitudes and beliefs regarding traditional medicine will further explain the decline in this practice.

6.3.2 Interest and attitudes

The attitudes toward and interest in traditional medicine is complex. Overall, an individual's background (i.e., grew up in the bush vs. residential school or the community) and their religious beliefs do not appear to influence

attitudes and beliefs. However, the variation in responses created challenges in identifying a global pattern.

Traditional medicine: beliefs and barriers

The participants were asked: "Do you believe that traditional medicine can help you when you are sick?" Although the responses from this study cannot be treated as a representative poll, it is interesting to note that the question generated a split response. Half of the participants stated that they believe in traditional medicine because they've seen it work or they've heard that it works. Four participants mentioned that they do not believe traditional medicine can help. Safety concerns and lack of knowledge about how to use the medicines were the main reasons for not believing in the medicines: "There is a lot of confusion and not enough knowledge about it" (E03). Finally, two respondents were not sure what they believed, again citing lack of knowledge as the main factor for their uncertainty.

Age does not appear to be a factor influencing belief: out of the five adults who took part in the interviews, the response to the question was split: 2 yes, 1 no, and 2 unsure. Similarly, the Elders were split, with 4 out of the 7 participants responding that they do believe traditional medicine can help.

The variation in responses, in addition to comments from the participants, confirms that, when it comes to traditional medicine, beliefs are of a highly personal nature: "It's all about your way of thinking." (E10). Another Elder agreed:

> "As long as the person himself knows that it's helping him because it will be up to that person who is taking the medication to know what is helping and what is not helping. Only the person himself will know, and if this medicine is tried on him and the person knows that it's working, I think it will be a lot better." (E12)

As mentioned previously, lack of knowledge was the most frequently cited barrier to traditional medicine use. This may be due to the reliance on conventional medicine, thus reducing the need for traditional medicine. A participant expressed her concern that it may be too late to revive the traditional practices:

> "There needs to be more awareness and knowledge. For other people if they want, but not me… There is hardly anyone left with knowledge of traditional medicine. White medicine covered traditional medicine use of past. Trying to revive it is going to be very hard. Those who used it aren't around anymore. Most people have just heard about it and not practiced it. We went to school with many Elders, and even they only heard of it in the past. The knowledge, a lot of it is lost already." (E04)

Participants also noticed that fewer people seek to learn about traditional medicine from the few who possess the knowledge about it. What is not clear is whether there is a causal link between lack of knowledge and an apparent lack of interest. Are people disinterested in using traditional medicine because they don't know enough about it? Alternatively, is the lack of knowledge being mistaken for disinterest in this aspect of the culture? One participant believes that the youth do not care to know about how the resources of the forest can be used as medicine:

> "But this generation, I don't think they'll be interested. They are "losing it" [the willingness to learn]." (A06)

An Elder's cautionary tale reinforced the idea that bringing back traditional medicine after years of relying on conventional medicine may incite fear. Many of the Elders have limited experience in providing medicines:

> "No. I used to [believe in traditional medicine] when I was younger, but now I am afraid of being poisoned with the wrong stuff. You have to be very careful. Have the healers passed it on to their children?

> Using traditional medicine is a dangerous game. The older people have experience. But today, people have only heard about it. They can try to do it, but do they really know? …. Some people are afraid. I know someone whose son had cut his leg. So they made medicine for their son. It didn't help, so they tried something else. The wound ended up infected. They mixed the medicines." (E03)

Knowledge about traditional medicine is lacking in the community, but it is not lost. There are few Elders in the community, such as the practicing medicine woman, who still know how to use plants and animal parts as medicine. However, despite the barriers that need to be overcome, we also needed to determine whether there is an interest in restoring traditional medicine practices.

Interest in traditional medicine

With the adoption of modern ways of living, some aspects of Cree culture have not been maintained. In recent years, there has not been enough of an emphasis on learning the medical traditions of the past:

> "When you look at the Cree culture, you know the hunting and trapping still pretty well, way up there. And arts and crafts. But then, our nature, our medicinal ... we haven't really put that as a priority. We need to prioritize [and] .... bring it back to where it was once." (A01)

Initially, many participants were reluctant to discuss traditional medicines. As the interviews progressed, the participants grew more comfortable and some confided that they would be interested in seeing an increased presence of traditional medicine within the community. Furthermore, although half of the participants indicated that they did not believe that traditional medicine could help them, all but two of them indicated that with increased availability in the community, they would be willing to use it or try it.

> "I would rather use the traditional medicine because anything's more of a higher priority than medication from the Clinic. When you use the traditional medicine sometimes the healing of whatever is faster, it heals better and faster than the medicine from the Clinic." (E12)

However, there are caveats. Many participants stated that they would like proof that the medicines work. While the scientific community uses clinical trials to prove the efficacy of a treatment, in Waskaganish, adequate proof includes testimonials (hearing that it works) or seeing it work on a family member or friend. One participant defined "proof" as:

> "Somebody that I trust telling me it works and I have seen it myself work. Or somebody experienced it, seen it work before. I have to be convinced that it works." (A02)

One Elder, who grew up without much exposure to traditional medicine, saw one of the medicinal plants used to treat an ailment and is now more willing to try it:

> "But I know it works, that medicine from that ... what do you call that?.... *Atushpi*! I know that works because I have seen it work, with my grandchildren." (E09)

Documenting and publicizing cases where traditional medicine is successfully used may lead more people to consider it as a treatment option. If the medicine is provided by a trusted person, the "word-of-mouth" proof will have a snowball-like effect, engaging more people in the community to get involved in seeing the therapeutic effects of the medicine for themselves.

6.3.3 Which aspects of traditional healing are acceptable?

If traditional medicine is to be reintroduced in Waskaganish, consensus must be reached on which aspects of traditional healing are acceptable. As described previously, beliefs are of a personal nature. However, we wished to see whether we could differentiate between people who: reject the medicine

outright, believe in the therapeutic benefits of the medicine, or believe in the plant and the spiritual aspects of traditional healing.

Throughout the interviews, it became clear that the term "traditional healing" brought some discomfort to participants. Upon consultation with the community collaborators, I understood that this term is often associated with the supernatural aspects of traditional medicine, such as sweat lodges or spiritual connections to the plant. Some medicine people may integrate these practices into their healing methods, however, none of the participants indicated whether this was the case in Waskaganish.

When asked about traditional healing practices, a few people indicated that they had heard about them before. There seems to be limited knowledge about their use. For example, the sweat lodge is a healing practice that is regarded as controversial. The ritual required to prepare and participate in the sweat lodge has caused dispute within the community in the past. As such, some participants simply stated that they do not believe in traditional healing. An Elder described her beliefs:

> "Well, I know that my parents have said that it's not our tradition. I know they say that they've used a hot, like a stone, that has been heated or a rock that has been heated... like to use as a compress or something, but I don't know exactly what they do in a sweat lodge, I have never seen it, like, what they do inside, and my parents have said that they don't agree to that, and that's how I feel too." (E09)

Controversial issues were often described as not being a part of the Cree tradition, regardless of whether it was practiced in the past or not. Historical evidence indicates that traditional healing practices were a part of the Cree medical system (Niezen 1997), but their use has diminished significantly. Today, very few of the participants know of others who have tried sweat lodges, and most are unsure of what it entails:

> "I don't know, I never experienced it myself. I don't know how it works, where it works, where it heals. I don't know what they do, exactly." (A02)

The community collaborators indicated that the use of the sweat lodge is slowly being revived within the community, but their use is private. Since the sweat lodge is often used as a treatment for those who suffer from addictions, the practice is not openly discussed within the community.

The Christian churches have a powerful influence on the community, and they may play a role in the attitudes towards traditional healing practices. Although no one considered religious belief as a "barrier" to traditional medicine use, it functioned as a powerful determinant for the acceptability of aspects of the Cree medical system. One of the participants mentioned that her family's religious beliefs and traditional medicine beliefs do not mix: "My parents are Pentecostal. They believe in Jesus." (A08).

Not everyone feels the same way. For one participant, spirituality and traditional medicine do not necessarily have to be separate entities:

> "I say it's the Creator who created the plant. The Creator already knew what in the plant is, but it's just us, we have to know how to use it. And from there, once you identify what the use is for, then you're thankful for the Creator for giving us this. But then ... going back to the medicine man, he prepares it in a certain way too. So those are the use of ... the rituals. For me, the plant was already there and the Creator planted it... He planted it for a purpose, and we can use it. We just have to know how to use it." (A01)

Understanding beliefs in traditional medicine requires further exploration with more community members. We could not clearly differentiate between people who believe in the different aspects of traditional medicine practices. However, the participants were more open to learning about the therapeutic benefits of medicinal plants, without the rituals associated with their

preparation. There is less interest in traditional healing activities as they are linked to controversial practices:

> "There is no harm in the traditional medicine, it's just the beliefs that come with it. Then, that's where we have to be careful." (E07)

These findings have demonstrated that the primary focus for future work in re-introducing traditional medicine to the community should be on the plants themselves. Determining which values and healing activities associated with the Cree medical system are acceptable to the community will require more work, and time.

6.4 Summary

This chapter looked at Cree culture based on three major components: food, activities, and medicine. These concepts are pieced back together when considering cultural adherence. How does it apply? Is there significance for cultural values and spirituality in modern times? How do food and traditional knowledge/activities tie into traditional medicine?

The Elders describe the impact of modernization on the people of Waskaganish as a "change in the blood." The change in dietary habits and participation in traditional activities that the Cree have faced are thought to be the major contributing factors. The Elders do not believe that their people are as hardy or strong as they used to be. The increased prevalence on previously unheard-of diseases, such as diabetes, is a strong indicator that the greater consumption of non-traditional foods has affected the health and strength of the Cree.:

> "So that's where I notice, you know, when you eat wild meat all the time, when your blood is the same, you're strong. You don't get sugar diabetes, you don't get that. That's what's I know. That's what my old man used to tell me. Oh, he says, when you'd give him something to

> eat, 'this is going to make me weak, he'd say', and that's what they used to say. (H13)

The reliance on traditional food has lessened over the years. Although a strong focus on food acquisition and preparation still exists, the participation in traditional activities has declined. Time constraints and a need for income to live in the community mean that there are fewer opportunities to stay in the bush and learn about traditional ways of living. Those who reside at the Gravel Pit have more opportunities to lead a traditional lifestyle. Consequently, the access to traditional medicine and the use of healing practices have decreased significantly. The exposure to conventional medicine and lack of knowledge are two major barriers that need to be overcome, while remaining cognizant that the spiritual aspects of healing remain controversial. The transition to a modern lifestyle is correlated with an increased prevalence of modern diseases, which are treated with modern medicine.

Since traditional practices are frequently associated with the past, is it possible to bring them back to the present? Many of the participants stated that the changes in cultural adherence signal the need to improve food habits, increase physical activity, and re-connect with the land so that traditional medicine will work. This holistic approach to health is described in the following chapter.

7. HEALTH BENEFITS OF TRADITIONAL CULTURE

Overview

Thus far, we have seen the links between modernization, changes in Cree culture, and the effect on health outcomes. This chapter focuses the second core theme: the health benefits of traditional culture and its potential in disease prevention and healthy lifestyle promotion.

The interview data revealed that the four main aspects of Cree culture (traditional food, traditional activities, traditional medicine, and spirituality) were linked to well-being. To represent the participants' ideas, a conceptual model was designed in the shape of a medicine wheel, a symbol frequently used by indigenous groups across North America (Figure 6). The items in the wheel represent selective codes. The initial themes generated via open and axial coding are elaborated on in each section with relevant quotes. This data is triangulated by using examples drawn from scientific literature.

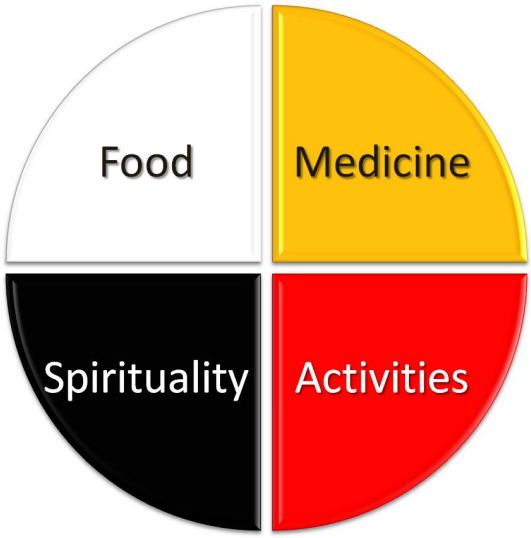

Figure 6: A conceptual model linking the health benefits of culture.

For the Cree, health is a holistic concept, involving social, cultural and political aspects (Adelson 2000) The Cree use the term *miyuipmaatisiium*, which translates to "being alive well," and this extends beyond the health of

one's body: it is described as being "less determined by bodily functions than by practices of daily living and by balance of human relationships intrinsic to Cree lifestyles" (Adelson 2000). This concept applies to many indigenous groups, including the Maya of Central America (Pesek et al 2006).

The holistic approach to health was recently highlighted in a paper focusing on the conservation of the boreal forest and the ethnobotanical perspective of cultural perseverance:

> Social activities like medicinal plant collecting or berrypicking excursions provide a number of health benefits: the nutritional/medicinal benefits of the plant, the physical activity involved in gathering as well as the opportunity to bring families and community members together (Karst 2010 p 10).

Furthermore, research with the Innu of Labrador revealed the negative impacts of the nutrition and physical activity transitions (Samson and Pretty 2006). The authors discussed the importance of re-emphasizing traditional culture and suggested policy changes to help promote the sustainability of traditional practices. The participants in their study agreed that:

> The nomadic hunting way of life is often regarded as strenuous and sometimes demanding to the point of life-threatening, but it is healthy, vibrant and connects people to a core of their cultural and environmental identity (Samson and Pretty 2006).

The participants of this study also indicated that the Cree way of life is healthy, as described in the following sections.

7.1 Traditional Food

Reasons for eating traditional food

As discussed previously, many people continue to eat traditional food because they were brought up with it: "I started eating it as a child, and I

loved it, I want to continue" (A05). Despite the costs associated with going out to hunt, traditional food is cheaper and more abundant than market food.

The quality and taste of traditional food are considered superior to store-bought foods. One of the participants described a visitor's awe at the freshness of what is hunted, gathered, or caught:

> "But him, to actually see us, catching the fish, cleaning it, boiling it, and next thing ... 15 or 20 minutes, we were already having a good meal. And what he observed was of course, a fresh fish, and he says, 'Ah, doesn't that have to be processed?' And, like, he said, we didn't have to take it to a manufacturing place where they do all the cleaning, and it becomes frozen, and then to the distribution channel and eventually to the market. That whole part has been cut out. 'You guys are taking it from there, then you're cleaning it and processing it and cook it ... it's all there, in one time'. And he says, 'What you just ate is a very fresh fish.'" (A01)

One of the best qualities of traditional food is that there is no middle-man required to modify it: it is fresh, whole, and complete.

Taste was described as an important determinant in food consumption patterns. It is also cited as a reason for eating traditional food. The participants continue to hold much knowledge about the seasonality of foods, and they described the nuances of flavour based on when the game meat is hunted:

> "The early spring is the best time for traditional food. In the summertime, the food tastes different because the leaves, grasses are different. Fall, winter, spring, those are the best times to hunt traditional food. In the summer, it is not a good time for being in the bush. We go in the fall and spring." (A06)

What the animals eat may affect the flavour of the meat. For example, bear is hunted in the fall, when it starts to feed on berries, or in the spring, when it

comes out of hibernation. In the summer, the plants the bear eats gives the meat a less desirable taste. However, the varied diet of the game animals contributes to their superior taste over store-bought meats: "I think that the meat from the game is far most the best because of the different diet of the game." (E12)

A few of the participants discussed their craving for the taste of wild game. What is it about the food that creates a craving? One participant stated that he has strong cravings for the taste of bear meat, even though it is not his favourite food. Several Elders in the community described the bear as a revered animal for the traditional hunter, which may explain the strong connection to that particular food. One of the Elders explained that cravings for game meat are natural, and part of being Cree:

> "On the other hand, when a Cree sees traditional food, they know how it tastes like, and how it's prepared, and when they see it, they start to have a craving for it, you really want to have a taste of it…. When it comes to banquets, they ... you see all the young people really wanting to have a seat because they know you can have a taste of traditional food." (E07)

Many of the participants identified traditional food as being part of healthy eating. Several aboriginal groups in Canada also consider traditional food as healthier than market foods (Wein et al 1989; Gittelsohn et al 1996). However, the convenience of market foods contributes to their ongoing and growing popularity:

> "The kids usually have Pogo sticks you just heat up in the oven, you know, for their lunch, which is really bad…. But they like it, eh?" (A08)

However, the quality of bush meat is seen as superior to what is available at the store. One Elder described the difference:

> "Beaver meat is healthy. Rabbit has no fat – it is a lean meat. Caribou is also a lean meat. Pork chops and steaks, they have hidden fat. Traditional meats are healthier than the store." (E03)

Table 3 provides a simple comparison of the protein, fat, energy, and mineral content of moose meat versus two different cuts of beef commonly available in Waskaganish. All values were obtained from the 2007 version of the Canadian Nutrient File (Health Canada 2010). While the amount of protein per 100 grams is comparable among all 3 cuts of meat, there is much less total fat found in the moose meat as compared to the cuts of beef. Furthermore, a greater proportion of the total fat in the moose meat is unsaturated (about 75%), while close to half of the total fat in the beef is saturated. Moose meat is also a richer source of iron than the cuts of beef.

Table 3: Comparison of moose meat to beef sold at the grocery store

Nutrient name	**Game meat, moose**, roasted /100 g portion (CNF #3588)	**Beef, rib eye,** lean/boneless, roasted /100 g portion (CNF #6065)	**Beef, flank steak,** lean/boneless, cooked /100 g portion (CNF #6025)
Protein	**35.00 g**	29.22 g	34.41 g
Total Fat	**1.30 g**	16.22 g	9.51 g
Sat. fat	**0.29 g**	7.18 g	4.27 g
Energy	**161 kcal**	273 kcal	236 kcal
Iron	**5 mg**	3.14 mg	2.90 mg

Source: Canadian Nutrient File - Food Search [Internet]. 2010. Available from: http://webprod.hc-sc.gc.ca/cnf-fce/index-eng.jsp

There are many positive attributes linked to traditional food. The participants stated that traditional food makes them feel good because it provides strength, energy, and nutrients, which can be correlated to a strong understanding of the corresponding nutritional concepts most important for traditional living: proteins, fats, and vitamins and minerals. One of the participants describes the healthy properties of traditional food in a modern context:

> "I would say ... the foods that have not only the meat, but the vegetation, the plants, too. I found, if I look at the meats and how much protein they have, I find those very healthy to eat. I would say like the beaver, has a lot of iron, and when I look at the fish, it has a lot of omega fat, and then look at the berries, eating berries it protects, it prevents disease too, you know." (A01)

Meats are rich in essential amino acids, the building blocks of protein. Game meat is a source of high-quality protein, which is used to build muscle, thus providing the strength needed to be active in the bush. The need for traditional meat products for strength was emphasized by several participants. One of the Elders elaborated on why he feels traditional food is good for his body:

> "To me, it's the meat products. I say that because it gives you energy and keeps you healthy. If you don't have some of the meat products in a day, you don't have the same energy for the day and you don't feel as strong, you feel different when you eat other things, that doesn't include a meat product in your meal." (E12)

Traditional food, and in particular animal fat, may contribute to satiety. In the past, fat was an essential part of the Cree diet because energy intake needs were high for bush living. One of the participants recounted that he and his father would eat a piece of beaver fat in the morning before heading out to hunt, and they would not need to stop until well after mid-day. Fat is an energy-dense nutrient, and it breaks down slowly, sustaining the feeling of fullness for a longer time. Traditional meats, when consumed with animal grease for dipping, are a very good source of calories, and are recommended by participants when participating in activities that require high energy expenditure.

The blood of game meat is a rich source of iron. When someone was very tired after a hard day's work in the bush, they were given boiled blood mixed with food (Adelson 2000). One of the participants mentioned that an Elder

had shared a story about the benefits of caribou blood to restore energy levels after a gruelling day, saying "When I eat it ... I just got my energy back." (from A01).

A study on the nutrient content of goose meat in Wemindji First Nation revealed that it is a rich source of high-quality protein and minerals, particularly iron, zinc, and copper (Belinsky and Kuhnlein 2000). Goose is a popular food item with cultural importance. People of all ages and abilities can hunt for goose, and its healthy properties are further evidence that it should remain an integral part of the Cree diet.

Fish, found in abundance in the many rivers and lakes of the Cree territory, are high in omega-3 fatty acids, one of the polyunsaturated fats. A study conducted in Eeyou Istchee found that a representative sample of the Cree population had higher eicosapentaenoic acid (omega-3) and docosahexaenoic acid (omega-6) concentrations in the blood than the rest of the province (Dewailly et al 2002). Since diets rich in omega-3 fatty acids are associated with reducing cardiovascular disease risk factors, such as dyslipidemia and maintaining higher levels of HDL cholesterol, the Cree are encouraged to continue eating locally-caught fish.

Thus, in light of the extensive evidence from the community and from research, the consumption of traditional food contributes to being healthy:

> "What makes people strong? My father, at age 75 was like a man at 45 years old. Was it the food [wild meat] he ate? He never bought food from the store. He used berries for juice and boiled beaver and drank the broth. I'm still doing my own research on that." (E03)

7.2 Traditional Activities

There are connections between participation in traditional activities, using skills in the bush, and "being alive well" (Adelson 2000). Spending more time

on the land means greater involvement in labour intensive work, which directly contributes to an increase in physical activity. Having physical strength is also the sign of an experienced hunter (males) or someone skilled at preparing food and hides and maintaining the camp (females) (Adelson 2000). While bush life can be difficult, it is thought to be healthier than being confined to village life.

7.2.1 Bush life & traditional lifestyle

There are many benefits associated with spending time in the bush, such as more family time. For example, during the goose hunt, when the schools and the Band Office close, families head out to their camps. One of the participants explained the importance of the goose break:

> "It's a family [activity]... we can get it together…. We cook together, that's when we'll find about the days back for grandparents, our parents will say stories about them, that's what I like to hear." (A05)

Another participant indicated that being in the bush is a priority for her. She looks forward to spending time with her family because "It's fun ... it's something that is always on the agenda" (A08).

With more time spent in the bush, there are more opportunities to share traditional knowledge and pass on cultural values to the next generation. More knowledge may help promote the continued revival of traditional ceremonies, such as the walking out and first snowshoe walk. As was seen in the previous chapter, there has been a strong push to bring back these ceremonies in the community. Maintaining ties to important cultural activities keeps traditions ongoing.

Many participants expressed that they feel better when they are out on the land:

> "I like the environment: it's more healthy. I see when my parents are in town, they are less active. In the bush, they are more active and their blood pressure is lower. I think high blood pressure runs in my family. When they are in town, they stay in the house and watch TV – there is not much to do. But in the bush, you have to chop wood, get water, walk around. Long ago, there was no diabetes because we were active. Now people don't do that anymore." (A06)

Participation in bush activities is physically and mentally demanding, as described by a participant:

> "And then when you go out and do these activities, a lot of it is very physical, mentally ... and you have to be more aware of what you do and a lot of walking, physically, it comes with the ... the physical has to be there to ... if you're going to walk for 6 km, to try to look for a beaver house, you have to be physically fit to [do it]. And that's... when you're a hunter and trapper, you're really fit. Because you're doing the portages, and there's a lot of weight." (A01)

Returning to a traditional lifestyle was shown to be beneficial (O'Dea 1984). Kerin O'Dea's study brought 10 diabetic Australian Aborigines into the bush for 7 weeks, where they relied solely on the resources of the land to survive. By the end of the study, the participants had lost an average of 8 kg and their fasting glucose and postprandial glucose levels had improved significantly. These positive changes were attributed to the increased energy expenditure, required for foraging and hunting, as well as to the improved quality of their diet, mainly composed of low-fat wild meats.

The effects of returning to the bush on weight, blood sugar, and physical activity levels in diabetics from Eeyou Istchee were studied in a case-control study (Robinson et al 1995). The bush-living participants stayed out on the land for three months, but would return to the community to purchase market foods. The study found that bush living was not enough to control diabetes, but this may have been due to the strong reliance on non-

traditional foods, even on the land. However, a higher activity level was observed among the bush-living participants versus the controls who stayed in the community. Since sustained exercise can improve insulin sensitivity (Borghouts and Keizer 2000), bush living may still be beneficial for diabetics, pre-diabetics, or anyone wanting to reduce the risk of cardiovascular disease.

The benefits of bush life extend beyond physical health. Many participants described the bush as being peaceful, quiet, and relaxing. When out on the land, the participants stated that they feel closer to nature. There is more freedom; it is an escape from the demands of life in the community. One participant described the sense of healing you can obtain:

> "I love being in the bush. It's peaceful, quiet ... when you sleep in a tent and it's raining, you hear the raindrops and sometimes you hear the wood crack in the fire... it's peace. Peaceful, no stress, relaxing, it's healing." (A02)

7.2.2 Traditional physical activity

Incorporating traditional physical activities into everyday life may also be beneficial. Motor-based modes of transportation can be replaced: In the summer, canoes can be used instead of motor boats. One of the adults mentioned that in Waskaganish, a canoe brigade takes places every summer, where youth and Elders paddle the Rupert River to Nemaska and back. Although the number of people who can participate in the brigade is limited, this should not stop other community members from organizing their own canoe trips.

In the winter, snowshoes can be used instead of the skidoo. As described by one of the Elders:

> "In the past, a long time ago, before we had skidoos, I worked a lot with my arms, my hands, the whole body. We walked with snowshoes to get everything, not with the machine, we were able to burn fat right

> away. We were thin, thin. When the ski doo arrived, I noticed that it was easier and I gained weight." (E10)

For people who have less time to spend in the bush, there are activities they can participate in town. Square dancing, considered a traditional dance, is an enjoyable aerobic activity for men and women. One of the participants mentioned that she likes to dance, recognizing that it's exercise:

> "The square dances are still popular, especially at weddings. There is always a dance after a celebration, after the feast." (E09)

Despite the traditional diet being heavily based on fat and protein, with high energy expenditure in the bush, obesity and cardiovascular disease were not a common occurrence among the Cree in the past. Physical strength and healthy eating are linked: to be able to hunt for traditional food, one must be active and strong, and eating traditional helps provide that strength. Based on current recommendations from the World Health Organization to improve diet and increase physical activity to help achieve a healthy lifestyle (WHO 2004) and the participants' desire to be healthy, I propose that, to maximize health benefits, an increase in traditional food intake should be coupled with traditional ways of living.

7.3 Traditional Medicine

7.3.1 Traditional food as medicine

Traditional food's health benefits extend beyond being an excellent source of nutrients. We have already seen that animal greases and Labrador tea can be used as traditional medicine. Some other bush foods are considered to have medicinal qualities.

Several participants described the preventive properties of traditional food. One Elder mentioned that if someone "eat[s] lots of traditional meals, they can use it as medicine, it will help them." (E12). It is thought that the plants

eaten by the animals are passed through the meat, providing additional "benefits" (this was described in a very abstract manner). While there is no specific effect, the Elders emphasized that there is a link between traditional food and health.

Eating berries are believed to have a protective effect: "Like I said, when you know that the berries are good for, you know ... it's almost like for prevention purposes." (A01). One participant mentioned that her great-grandmother used to eat cranberries every day and lived to over 100 years of age. An Elder had heard that blueberries were good for people with diabetes, so she said that she makes an effort to consume more berries as a preventive measure.

Some foods that have been described as remedies include beaver meat, caribou meat and parts, and broth. One of the Elders described how beaver was used for healing:

> "The beaver is a special food item: Whenever there was a sickness going around, to take care of our health, we ate beaver and the sickness went away." (E10).

Another Elder discussed the uses of caribou, a food item used frequently by his mother as a medicine:

> "The blood from the caribou was collected, and it was put into that part of the caribou that they kept. I remember my mother used to use it a lot as a medicine, if somebody had a really bad cold and a congestion, she would boil it for a while and give it to the person as a drink…. My mother also knew if a person hadn't been feeling well and they had a lack of appetite, someone who hasn't eaten for 12 hours, she knew which part from the caribou to feed the person and it would change the person's appetite." (E12)

Although not mentioned in the interviews, Adelson (2000) reported that broth was a popular remedy after an illness or starvation period. It was considered the ideal food to start to build up the body before eating solids.

In summary, the Cree interviewed felt that bush foods are healthy in many ways: they not only provide good nutrition, and they may also play a role in preventing or curing illness.

7.3.2 Healing self

There are positive social and political implications of re-introducing and maintaining aspects of traditional healing practices: it is "an area of Cree knowledge and practice which symbolizes Cree autonomy" (Marshall 1989). We have already seen that there are barriers to overcome in terms of knowledge about traditional medicine use. However, there are benefits to their use, as discussed in more detail in the following chapter. The focus group participants revealed several reasons for using traditional medicine, namely empowering the community to take charge of own health.

Western society has finally started to recognize the health benefits of traditional healing practices. An urban indigenous population located near Milwaukee, Wisconsin was surveyed regarding their concurrent use of traditional healers and physicians, finding that 38% of their sample consult with both (Marbella et al 1998). They observed that the traditional healer was often visited for spiritual healing, while the physician would provide physical healing. The authors recommended moving towards the integration of medical practices, where patients can choose to receive traditional healing, conventional healing, or both, in a safe manner.

The return to traditional healing has been documented by the National Aboriginal Health Organization (2008). For example, the Whitehorse General Hospital in the Yukon offers a First Nations Health Program, where

traditional knowledge and medicine are integrated into the conventional care system. This program was created and developed by an Elders Working Group, and they continue to be involved in administration, logistics, and policy planning. A traditional medicines coordinator acts as a liaison between physicians and healers, ensuring that communication remains open between the two groups. It has been reported that increasing support has been given to this program by the conventional care practitioners (NAHO 2008). This program can serve as a model for other indigenous groups across the country whose medical traditions are currently not recognized. Whether Waskaganish First Nation is ready to move forward with such an endeavour is explored in the next chapter. If the holistic model of health is considered, the restoration of elements of Cree medical traditions would be beneficial to the health of the people and the community.

7.4 Spirituality

In Waskaganish, the majority of the community members are practicing Christians. Thus, many elements of traditional spirituality, such as sweat lodges, drumming, and shaking tents, are considered controversial. One of the Elders explained that Christianity and traditional spirituality may not mix:

> E07: If I were to build a house and if I had two masters, I probably wouldn't be able to build it right. And if I just had one plan to focus on... then everything would turn out ok.
>
> Interviewer: So to him, it's a choice between traditional rituals, traditional medicine and God?
>
> Translator: Yeah.
>
> E07: And once I started believing in God, I noticed that there was a lot of change and it helped me a lot. To everything I do, I rely on God.

The participants in the follow-up group identified themselves as members of the churches in the community. The majority indicated that they take part in

services at the Pentecostal church. However, one participant believed that the church you attend should not matter because spirituality is about "knowing your personal saviour" (E09).

Spirituality, regardless of individual beliefs, is an important component of health and healing, which is why it was included in our holistic health model. The participants focused on spirituality as a personal connection to the land. It is impossible to "be alive well" without connecting to the traditional source of your sustenance.

The connection was described in a variety of ways. Several Elders, especially those raised on the land, expressed that they "feel more at home in the bush" (E04). Many of the Elders spend limited time in the community, as they have cabins at the Gravel Pit. They will head to the Gravel Pit when they need an "escape" from village life. Other Elders stay at camps on their trap-lines for most of the year, returning for short periods in the summer and for holidays.

One of the participants described how spending time on the land strengthens your bond with it:

> "But the more you spend on the land, and that's where you tend to find the spirituality of it. The spirituality is the good side, the good side of it. And at the same time it becomes more of a healing. Sometimes, when you live in a fast-paced society, you've got to set aside some time to relax, you know? But here, when you're out in the bush, sometimes you can find it good, quiet, away from everything. You just sit there and watch the scenery and relax. And I find that's very healing, I find that's part of a healing." (A01)

7.5 Summary

This chapter used evidence from the study participants and scientific literature to describe the health benefits of traditional culture. We have seen that eating traditional food, participating in traditional activities, healing

with traditional medicine, and making personal spiritual connections to the land each contribute to the health of an individual. It is clear that these aspects are ultimately interconnected, functioning together so that the people of Eeyou Istchee can "be alive well."

This model can be applied to health promotion and disease prevention activities, such as in diabetes prevention and treatment.

7.5.1 Traditional culture & diabetes

Diabetes, previously unseen in the Cree population, is often referred to as a white man's disease. The prevalence of diabetes started to rise around the time people switched to market foods and settled in permanent communities. Today, the Cree recognize diabetes as a condition where they have a lot of sugar in their body. The participants in this study were very knowledgeable about diabetes: they recognized its detrimental effects and made connections between the foods they eat and the impact on their blood sugar levels: "We know we're diabetic, and we want to eat less sugar" (E10).

One participant explained why diabetes is an issue in Waskaganish:

> "In the old days, they used to get their water down by the water and walk ... I think that's the reason why people have diabetes because of lack of exercise, they eat a lot, unhealthy foods, you know ... for myself I'm trying to watch what I eat because I want to be healthy, you know? I want to choose a healthy lifestyle. So it depends on the person, you know, they have the option to choose a healthy lifestyle or an unhealthy lifestyle." (A02)

Several Elders noticed a link between traditional foods and post-prandial blood sugar levels. One Elder explained that he "feels" his blood sugar is lower when he eats game meat, such as beaver (another Elder recommended caribou or rabbit meat). He said that his blood sugar worsens after consuming bannock: it "feels" higher. Since carbohydrate-based foods create

a greater postprandial surge in blood glucose levels versus protein-based foods (Franz 1997), it is not surprising that this participant perceives a change in his blood sugar level after eating bannock, especially if he is diabetic.

The traditional diet, although high in protein and fat, with minimal carbohydrates supplied by berries and plants, can be healthy for people with diabetes. One of the participants agreed:

> "I know a person who says when he eats, there's certain wild food, he says, my sugar level is the same level. But the thing is, identifying those foods that you eat that stabilize you, your blood sugar level. And the other food is ... let's say the processed food, let's say the bannock. He says, 'I would eat bannock, and man, my blood sugar just jumped, you know?' So yeah identifying those foods that ... wild meats and plants that contribute to it." (A01)

Healthy eating also includes healthy food preparation (i.e., frying food less often) and purchasing healthy market foods, such as fruits and vegetables, to supplement the traditional diet. Increasing physical activity, either by increasing participating in bush activities or including traditional activities, such as canoeing, snowshoeing, or dancing, into an exercise regimen, may help reduce the risk of diabetes in this population.

For those who are already suffering from diabetes, traditional medicine may be a valuable therapy option. For example, one of the participants mentioned that she heard about a traditional medicine provider in Eastmain who prepares a "juice" made with different plants to treat diabetes. The Team in Aboriginal Anti-diabetic Medicines has confirmed that several plants found in the boreal forest have anti-diabetic potential. There is still work to be done, but, hopefully, these medicines will be considered as a treatment option for diabetes in the future. The community's readiness to pursue making traditional medicines more available is discussed in the following chapter.

8. USING TRADITIONAL MEDICINE

This chapter addresses the topics discussed during the focus group sessions. We spoke with community members, health care professionals, and Gravel Pit residents to hear their thoughts on three themes: the revival, integration, and delivery of traditional medicine. In light of the ongoing research by the Team in Aboriginal Anti-diabetic Medicines, we focused on the use of traditional medicine for its traditional functions and for its potential as a therapy option for diabetes. The results from the focus groups are group consensus, unless otherwise indicated. In some instances, this data is triangulated by a one-on-one interview with a traditional medicine provider who resides in Waskaganish.

8.1 Revival of Traditional Medicine

As described previously, conventional medicine has largely replaced traditional medicines. In Waskaganish, a "revival" of Cree medical traditions would be needed to get the community interested in using medicinal plants and animal parts.

8.1.1 Current knowledge about traditional medicine

The interviews conducted in the community have demonstrated that there is limited knowledge about the traditional uses of Cree medicines. Do these findings hold for the focus group members?

The health care professionals admitted that they have little to no knowledge about traditional medicine. None of these professionals has had any extensive experience with Cree medicines. One participant noted:

> "We have bear grease in the freezer at the Clinic. I didn't know what it was or what it was used for." (HC04)

However, the group expressed a willingness to learn more about the medicine, but recognized the need for more medicine people/traditional medicine providers and for training on using the medicines safely. The importance of teaching the youth was stressed, since, in the future, "They are the ones that decide if they want to use it" (HC01).

The community members also indicated that they are lacking knowledge about traditional medicine. Although the group cited their experience with five different medicinal plants, very few knew how the medicines were prepared. In a few instances, the participants had simply heard about a plant that could be used as a medicine, and were unsure of what the medicine was treating.

This group, like the health care professionals group, emphasized that the youth should be encouraged to consider traditional medicine as a therapy option. With more exposure to the medicines and increased awareness about them, the more likely they are to trust in their ability to heal:

> "The more they use the traditional medicine, the more they'll believe in it. Because right now, the younger generation, they don't believe in it." (CM11)

There are few opportunities to learn about traditional medicine, which was cited as a barrier to generating interest about using it. However, there is a role for the Team in Aboriginal Anti-diabetic Medicines to help promote traditional ways of healing:

> "I think it's more with the awareness about the medicines used, [and] that proposed project regarding anti-diabetic [medicines]... coming up with a plant. And the Elders too, the healers that are here. We would have to really think about how many healers that we have in this community and are they ready to talk about these medicines, practice them, to make to available to the community. That's how I looked at it, anyway." (CM06)

The Elders, who tend to hold the most knowledge about traditional medicinal plants, would have to be willing to share their experiences with the youth. In fact, the Elders at the Gravel Pit were knowledgeable about a greater variety of medicines than the community members and health care professionals. Some participants were reluctant to participate at first, but the translators helped initiate the discussion by sharing their stories. Once the participants felt comfortable, they showed great interest in discussing their experiences with traditional medicine throughout the session.

Thirteen different medicines were mentioned during the focus group, with 5 plant-based and 6 animal-based therapies discussed. The group members also alluded to the benefits of breast milk (used for snowblindness) and charcoal (considered a source of calcium). Animal greases (bear, beaver, and moose) were the most frequently mentioned medicines, followed by castoreum and tamarack (*Larix laricina* or *Watnagan*). While the greases were cited for treating rashes and burns, castoreum was popular for healing wounds, and tamarack has been used for all three ailments.

Since these Elders are familiar with a variety of treatments, we wondered if they have shared their knowledge with others. The medicine woman of Waskaganish, indicated that she has tried, unsuccessfully, to teach:

> "Well, I had gone through the process of trying to recruit some people to be able to pass on the tradition of teaching them the traditional medicine. But there was no – no-show, no one showed up to take part of it. But I am more than willing to teach." (GP03)

The lack of awareness about traditional medicine may be preventing people from seeking to learn more about them. Promoting the therapeutic benefits of the medicines may help generate interest in seeking more knowledge about them. Thus, the Elders were asked whether they accepted a move

towards increasing availability of these medicines. One Elder suggested a scientific approach to learn more about how the plants can help:

> "We have been discussing a lot of various kinds of treatment processes and trees, and the saps that are applied to certain wounds and sores. I am suggesting, why don't we get certain kinds of trees and get the inner bark and try and get the sap, boil it, get it tested, and see what kind of extract that would help." (GP05)

The participant did not know that this approach is similar to what the Team in Aboriginal Anti-diabetic Medicines is doing with plant extracts, for diabetes. This Elder contrasted this "modern" approach with the "traditional" approach that the people used in the past to learn about the beneficial properties of a medicinal plant:

> "In the wild, looking at the animals, like the beaver and muskrat or any source of animals, they feed a lot on the plants, and they have a process of knowing which plant helps them at a certain time as they go in the cycle, and they feed on those." (GP05)

This group showed support for working in collaboration with scientists to further explore and enrich our knowledge about the local flora's ability to heal.

As seen in the interviews, the younger generation would like proof that the medicines work. Conversely, the Elders don't necessarily need to be convinced with proof:

> "So people will use those traditional medicines, at what cost, if they need to get instant healing or, you know... and they know it works, they'll apply that, at what cost."(GP12)

In town, I conducted an interview with a traditional medicine provider, who also had much knowledge about the plants and animals used as medicine. He alone cited 10 different medicines and explained how they are used. With

such vast knowledge, I wondered whether he shared it with others. Community members have consulted him about particular medicines, and he will gladly provide the information, when asked. However, as the Elders from the interviews described, he says it is up to the individual to want to learn.

8.1.2 Using traditional medicine for diabetes

The research done by the Team in Aboriginal Anti-diabetic Medicines is generating promising results. The Cree medicine has demonstrated anti-diabetic and anti-oxidant properties in the laboratory. Knowing their potential to help with the prevention or treatment of diabetes, we wished to discuss whether there was interest in considering the use of traditional medicine for diabetes. As was explained to the participants, it is expected that conventional treatment would continue in conjunction with the herbal therapies, although it is hoped that the traditional medicine would reduce the dosage of or need for pharmaceutical therapy. Furthermore, it has yet to be proven whether Cree medicine, taken in its natural form or as an extract, is effective at lowering blood sugar levels on its own. On the other hand, the presence of traditional medicine itself may have benefits: it is believed that the availability of traditional healing methods for diabetes may help people come to terms with their diagnosis.

The community members had varying opinions when discussing traditional medicine and diabetes. Several participants commented that they had not heard about using traditional medicine for diabetes before. The Team's lack of exposure in the community may be a factor:

> "It's hard to say. This is the first time I hear about it or have a meeting about it. I do believe in it, to control diabetes. I have attended some of the Elders Council meetings to introduce [this] project, but I still don't know much about it." (CM08)

Another participant noted that personal beliefs play a role in determining whether a medicine will help:

> "I've always believed that if you believe in something, it's going to work for you. But I never heard of any medicines that can be used for diabetes." (CM09)

In these cases, lack of knowledge, a recurrent theme throughout the session, made it difficult for the participants to provide a definitive opinion on whether traditional medicine could help with diabetes management. No one knew whether fellow community members had tried traditional medicine for diabetes. Some alluded to rumours that people in other communities had tried it, but could not confirm what was used or where they got their medicine from. Despite the lack of knowledge available, a few participants indicated their support for treating diabetes with traditional medicine:

> "There are lots of plants that heal people for different sicknesses. Tamarack is one of them. I believe that lots of plants can help." (CM01)

We also discussed the willingness to try traditional medicine for diabetes. Only a couple of the participants spoke up, indicating that they would try it. The benefits to using these plants were cited: they are "traditional and healthy" (CM09). One participant, who suffers from diabetes, declared that he "would do anything to get rid of it" (CM11).

However, there are some concerns. The community members do not want to be treated like lab rats, where extracts of plant material are administered to the animal subjects:

> "As long as instructions are given on how to administer it, whether you chew it or drink it or whatever.... I don't want to be involved in lab testing like rats or mice." (CM03)

Thus, the most acceptable method of delivery appears to be a familiar format, such as tonics or teas. However, one participant feared that it would be difficult to switch over to traditional medicine, and expressed her concern about mixing it with conventional medicine:

> "If you're using traditional medicine, you have to notify the clinic. I know someone, she's a diabetic... it will be hard to change to traditional medicine if it has been a long time..." (CM11)

At the Gravel Pit, when I asked the Elders their opinion on using traditional medicine to treat diabetes, no one spoke for a lengthy period. The silence that this question generated was interpreted as personal reflection about the issue. Although no definitive response was given, one participant, a diabetic patient, did express her beliefs:

> "I believe that it can be done. I'm tired of the insulin treatment... 20 years and it's [blood sugar] been going up and down with that." (GP08).

One of the community collaborators explained that the hesitation to respond was because the Elders needed context to understand what the plants are helping with. The translator for the session provided a clarification:

> "I'm just stating that in the past, the Native people were always harvesting what they consumed, eh, all the animals, what they consumed, and in return, we sort of eat the animal, and the contents, or what they have eaten, is the substance of that meat, and that helped us. There were no signs of diabetes then, or any form of disease, because the cycle of what the animals living was also involved in the cycle of the human being, of the people. And it's lately that we began to contact these diseases because of what we're eating, you know, like the beef, the chicken – these are all treated, they don't get their substance from the wild." (GP12)

The Elders understand the physical manifestations of diabetes, such as sores on the feet or slow-healing wounds because they can be seen and treated with traditional medicine. However, how the plants may be used in the management of diabetes, particularly for regulating blood sugar or reducing fat, is more difficult to grasp because they cannot see whether the medicine is working. Since the Cree are visual learners, greater effort is needed to show the people how these medicinal plants could help with diabetes.

Meanwhile, back in the community, the health care professionals displayed ambivalence towards using traditional medicine for diabetes. There is an important caveat to supporting the use of medicinal plants as a treatment option for diabetes: it needs to be proven to work. These individuals would like to see proof that the medicines are effective for treating diabetes:

> "We have to see it work first. The medicine has to prove itself. We need to see many cases, and each individual needs to prove that it's working for them." (HC03)

Diabetes is a "silent disease," and patients often don't know they have it until they visit a physician or nurse. There is concern that the plants are targeting diabetes when it is too late, as some of the research is looking at treating the complications that can occur with poorly-managed diabetes. Safety issues and using traditional medicine for a chronic condition were also concerns for this group:

> "Diabetes is long-term – we need knowledge about using these plants for a long time. We have to ask about this." (HC02)

> "I think that we're starting with the hardest [diabetes]. Maybe something simpler to treat problems that have existed for a long time." (HC03)

The health care professionals are not sure whether the community is ready to try traditional medicine for diabetes. However, this group is very open to working with medicine people and traditional medicine providers. Both parties can benefit from working together: while the health care professionals can learn more about traditional medicine, the traditional medicine providers can be taught about how their medicinal preparations act in the body to help the people they treat.

8.2 Integration of Traditional Medicine

As mentioned earlier, the Cree Health Board has indicated that the integration of traditional medicine into the conventional care system is one of its goals (Torrie et al 2003). With collaboration between medicine people and physicians or nurses, patients would be able to choose how they want to be treated. If the patient opted for traditional medicine, the provider would prepare a treatment and report back to the clinic with the details on the medicine administered and the dosage prepared. The health care professionals would update the patient's chart with this information, thus ensuring that the traditional medicine is used safely.

8.2.1 Support for integration?

The focus group sessions aimed to get a preliminary idea about whether the community supports the idea of traditional medicine being made available via the clinic.

The health care professionals provided support for integration and are open to working with the community to help make traditional medicine more available. However, this support is on a conditional basis. They mentioned some important points that must be addressed before moving forward: proof that the medicines work and the elimination of safety concerns, such as drug interactions.

> "But I want to make sure there are no side effects or interactions with other medications. Just because it's natural doesn't mean it is safe. It can be harmful if taken with other medicines." (HC04)

The freshness of the medicines must also be considered. Knowledge about whether these plants can be taken over the long-term, such as for diabetes, is lacking. Since traditional medicine has typically been used to treat acute ailments (colds, cuts, rashes), the health care professionals are not sure if they are effective when taken for extensive periods.

A clarification was made during the session as one of the health care professionals asked how they would learn to prepare it. Another participant explained that the goal of integration (making traditional medicine available via the clinic), is not for the doctors and nurses to be involved in administering the medicines. Rather, their role would be to follow-up with the patient to ensure that the medicine is not taken in conjunction with a contraindicated conventional medication.

While community members also see the benefits of integration, they have their own concerns about whether Waskaganish is ready to move forward. The current situation in Waskaganish was compared to that of other communities. The participants feel that their community has not reached the same level of readiness as Mistissini:

> "It would be based on the readiness of the community. Because yes, in Mistissini they are ready to start the project, but we need to follow what each community wants, when they would be ready." (CM05)

The difference between Mistissini and other communities, in terms of readiness for integration, can be explained by the greater degree of awareness of traditional medicine there. Many of the Cree partners on the Team in Aboriginal Anti-diabetic Medicines are located in Mistissini, which contributes to more exposure. One of the participants also recognized that

the traditional medicine providers are more involved with promoting the use of the medicines:

> "In Mistissini, they have a table at Traditional Day, they explain everything about the medicines. The healer there gave us a bag for headaches. The healer was there, and explained everything. Here, you don't see any healers explaining everything, what the leaves are for, you don't see anything in Waskaganish. In Mistissini, they go out in the open, our healers here they don't do that." (CM11)

There are concerns about the ability to harvest healthy plants for traditional medicine preparation, as compared to other communities. Whapmagoostui and Chisasibi were two examples mentioned:

> CM05: We're going to have to stop loggers and forestry, and tell them we want to take care of our plants. Maybe that's the reason why you see a lot of Whapmagoostui still practicing, because they are more isolated, and there is not a lot of damages around their land.

> CM06: I don't know if there is less contaminants. In the report I saw on the river that runs out of Chisasibi, the big river, over 30 years of the dam has destroyed a lot of under the water, all the way up to Great Whale. And the Inuit people explained to us about what happened to their sea cucumbers, which the seals eat, they're eating rocks. They're mistaking them for sea cucumbers and winding up with open sores.

The environment surrounding Waskaganish is evolving, with more vehicles polluting the air and increased development of the community encroaching on the surrounding trap-lines. Furthermore, the impact of the recent diversion of the Rupert River is yet to be seen. Will these changes affect the willingness to harvest local medicinal plants?

Similar to the session with the health care professionals, a clarification was made concerning what was meant by medicine being "available at the clinic". Initially, the participants thought that health care professionals would

assume control of preparing and administering the medicine. However, the group was reassured that the traditional medicine providers and medicine people will maintain their knowledge required for the preparation of these medicines. It became apparent that the term "making medicines available via the clinic" was too ambiguous.

The issue of freshness was also brought up by this group. Several participants remarked that the medicine cannot be kept for long, and do not believe the clinic should store it and dispense it. Traditional medicines are only made when they are needed, and they need to be used fresh. Once again, it was emphasized that collaboration is essential for integration to succeed: the medicine people would have to prepare the medicines on demand, not in advance. Traditional medicine does not have a shelf life like conventional products do.

At the Gravel Pit, when the group was asked if they would be more inclined to use traditional medicine if it were available through the clinic, a lengthy discussion ensued. One participant requested confirmation that the traditional medicine provider would be in involved in the process. When this was affirmed, she indicated her approval. There was further discussion, until one of the translators and community collaborators mentioned that the group was voting on the idea. In the end, the majority of the group answered "yes" to the question. The community collaborator asked them if they would volunteer to attend the clinic and try receiving traditional medicine, to see if it works. The consensus was that: "Most people are in favour because they trust their own medicine." (TW)

The traditional medicine provider in the community agreed that providing people with the ability to request traditional medicine within the clinic (framing integration in this manner generated better feedback) was a good

idea. He supports the integration of traditional medicine and feels that people should not be afraid to use them:

> "Like I said, God made the trees and everything for the people, you know. Now people know that, in the old days. That's why they accept it, use it. And they used to tell us, too – God, he would not have made those things, they says, you know, if it was going to hurt you." (H13)

8.2.2 Benefits & limitations of integration

Although community members and health care professionals have concerns about the integration of traditional medicine, overall, there is support for pursuing the idea. Thus, we wished to explore the benefits and limitations of integration.

The health care professionals listed a variety of benefits for having traditional medicine available through the Clinic: it provides a choice to people on how to be treated, it is cost-effective, and it generates pride in using one's own customs. This group also feels that other communities may be inspired by the revival of traditional medical practices. One participant even compared the potential for expanding Cree medical traditions to the Chinese medical system, whose popularity has surged in recent years.

However, there are barriers that could limit the success of integration. The lack of traditional medicine providers and the potential loss of knowledge are major factors. One participant lamented:

> "Imagine if this had started earlier. This project has been an awakening about traditional healing. The loss of healers may have a serious impact on the future of traditional medicine…" (HC02)

It was thus suggested that perhaps the people of Waskaganish could collaborate with the other communities in Eeyou Istchee could limit the loss of this precious knowledge.

The accessibility of the few traditional medicine providers is also a limitation. Many of the most knowledgeable Elders spend most of their time outside of the community, at their camps. While their time in the bush is essential to harvest medicinal plants, they would need to be available for consultations and for preparing and dispensing the medicines.

As mentioned previously, another concern is that the TAAM is dealing with a difficult disease. This group feels that chances of successfully integrating traditional medicine would be greater if the clinic started by re-introducing medicines for "easier things first" (common ailments) to "gain confidence" (HC03).

The community members found many benefits that could come from integrating traditional medicine into the conventional care system. A stronger connection to Cree culture and one's spirituality could be achieved:

> "The other thing I was told about the medicines, is also that you pray. You know, the same way you pray for your food before you eat, that it will give you health, strength. You pray for the medicines, you have your connection to what you believe in. How you believe in the Creator. And, also it's the step in terms of benefits, I guess if people can understand ... healers also will tell you when you're taking the medicine, to pray." (CM06)

Most importantly, using one's own customs to treat diseases provides a sense of empowerment to the people. It is hoped that pursuing integration will encourage people to want to improve their health and decrease their reliance on conventional medication: "I'm looking forward to our own Lakota" (CM05). Another participant emphasized this point when mentioning the environmental benefits of using medicines from the bush:

> "We live right in a garden, compared to other areas…. And everything we have here is there, available to our advantage, to use. There is potential of our own surroundings… the Garden of Eden." (CM03)

When it came to discussing the limitations of having traditional medicine integrated at the clinic, this group interpreted the question as disadvantages of *not* having traditional medicine integrated. This perspective suggested that this particular group of individuals was optimistic that integration could succeed. The group felt it would be the community's loss by not pursuing it. When the Elders pass on, so will the knowledge about medicinal plants. The proposed solution is to get the younger generation interested and to train them to help administer traditional medication. It was suggested that culturally-appropriate educational tools are required to help preserve and pass on the knowledge about traditional modes of healing.

The traditional medicine provider also believes that the integration of traditional medicine would be advantageous. Using these medicines would be more cost-effective for the Cree. He did suggest that payment for the medicines would be acceptable if the medicine provider requested it, but emphasized that members of the community would not be charged. Rather, he is thinking of the potential to make these medicines available to non-natives, and suggests that a license to sell it would ensure that the people are able to profit from the medicinal preparation.

This medicine provider did not see any disadvantages to making traditional medicine made available via the clinic. However, he observed that there are obstacles to overcome. Providing proof that the medicines work, by testing the plants in a similar manner to what the TAAM has done, would be a good idea. We have already seen that the Gravel Pit Elders support this idea. Education was also emphasized by this participant. He agreed with the community members that training people in the community to help the traditional medicine providers would contribute to preserving the knowledge about the plants. These helpers would chart the doses provided and duration of use, and report this information back to the clinic, thus improving accessibility, compliance, and transparency.

8.3 Delivery of Traditional Medicine

Finally, we wished to explore the delivery of traditional medicine. The questions asked during the focus group sessions were tailored to the particular audience (see Appendix 1).

The health care professionals revealed that most of their patients had not disclosed whether they had used traditional medicine before. One of the participants indicated that she had just heard about traditional medicine recently:

> "I have been here 2 years and that's the first time I hear about it …. I never thought about asking. I thought none existed before tonight. I figured Elders maybe more than youth were using it or knew about it." (CM04)

The health care professionals mentioned that they do ask about the use of conventional medicine, but do not ask if their patients have used or are using traditional medicine. Now that they are aware that traditional medicine does still exist, they will consider inquiring about it in the future.

We wanted to know if these professionals were concerned about mixing conventional and traditional medicine. There do not appear to be concerns now, but a few people indicated that caution was needed in case of interactions. They also stressed the importance of increasing awareness of traditional medicine among health care professionals at the clinic. A handbook about traditional medicines and seminars with medicine people were suggested as being beneficial to medical practitioners, who are very hands-on.

This group also mentioned the whole community needs to be made more aware about the medicines. When the community is ready, they would be very interested in collaborating with the traditional medicine providers to

treat non life-threatening illnesses, until a greater level of comfort is established.

The Elders at the Gravel Pit have extensive experience receiving or providing traditional medicine. Steps need to be taken to encourage the younger generation to be trained by these Elders about how to use the medicines to treat common ailments.

Health care professionals and traditional medicine providers need to work together to help make traditional medicine available through the Clinic. The community members indicated that this can only be achieved by sharing knowledge and collaborating**.** It was suggested that perhaps monetary compensation would provide incentive for the younger generation to get involved in Cree medicine, in addition to being a source of income.

8.4 Summary

The Elders at the Gravel Pit hold the most knowledge about traditional medicine. The community members have limited knowledge, and most health care professionals do not know anything about traditional medicine. These sessions revealed that people should start talking about traditional healing again, without intruding on religious beliefs. While the focus of reviving traditional medical practices in a public setting would be on therapy, a more sensitive starting point would be to start including traditional values, such as the importance of family health (Torrie et al 2003), into everyday care. With chronic disease affecting many people in the community, the use of traditional modes of healing could help improve health outcomes.

These focus groups have generated interest in using traditional medicine and are encouraging people to want to learn more. The majority of the participants expressed interest in integrating traditional medicine into the conventional care system in the future. However, there are obstacles to work

through. Preserving the Elders' knowledge and increasing awareness about the medicines are the priority. Most importantly, the community must be reassured that with integration, the traditional medicine providers will maintain control of preparing and administering the medicines. The clinic's role would be to facilitate access to the medicines and to monitor their use for safety reasons. Finally, integration was found to be best framed as **"providing people with the ability to request traditional medicine within the clinic."**

Education about Cree medicines is lacking. The Elders are needed to promote traditional medicine and to develop and deliver programs about traditional medicine use. Much ambivalence exists concerning the use of traditional medicine for diabetes, and there is a role for the Team in Aboriginal Anti-diabetic Medicines to explain the potential benefits. The successful integration of traditional medicine includes collaboration between health care professionals and traditional medicine providers and improved dialogue between patients and health care professionals about these medicines.

Most importantly, as we have already seen and discussed, maintaining health requires a holistic approach. One of the community members provided an excellent summary:

> "I think as we look at these things and we talk about diabetes, it's not going to do much good if we just take the medicine and we continue to eat poutine, and we continue to not get exercise, it's not going to do much good. It's the combination … that's going to work. It's your whole life, it's not just the medicine you take. Your whole life, the way you live, is a medicine." (CM02)

9. CONCLUSION

9.1 Summary

Much of Cree culture centres on food acquisition and preparation, while other aspects of the culture have been "forgotten." In Waskaganish, two important rites of passage, namely walking-out ceremonies and first snowshoe walks, are being revived in an effort to maintain links with the past.

With the current level of traditional medicine use being quite low, it appears that is one aspect of the culture that could be promoted within the community. Although there are some Elders in the community or at the Gravel Pit with knowledge about traditional medicines, many people in the community have limited knowledge about how to use plants and animals to heal. This lack of knowledge is a strong barrier and needs to be overcome, while remaining cognizant that some spiritual healing practices are controversial, if traditional modes of healing are to become a priority in this community.

The perseverance of traditional culture has been associated with health benefits. A holistic model was developed, linking traditional food, activities, medicine, and personal connection to the land to improved health outcomes. This model could be applied to diabetes prevention and treatment.

Is the community ready to include traditional medicines as a treatment option at the Clinic? According to participants in the focus groups, the community is not ready yet, but there is interest to pursue integration "in the future." Education and promotion of these medicines for everyday ailments would help raise awareness of the benefits of using traditional medicine and could encourage people to consider using these medicines for treating diabetes.

The success of integration relies on the community not only knowing about traditional medicine, but also wanting to use the medicines. The younger generation would like to see proof, so it is important to start sharing stories and testimonials about these medicines. The scientific evidence gathered by the Team in Aboriginal Anti-diabetic Medicines is also a valuable source of proof for the community.

9.2 Strengths & Limitations

There were lessons learned throughout the research process. The major limitation of this study is that it is not necessarily representative of the entire community. A small subset of the population was involved in the interviews, and the use of snowball sampling presents risks. I may not have had much diversity in respondents. Since most of the interview participants were connected to the Band Office and clinic contacts, there is a risk of self-selection bias (Harris et al 2009). The interview data includes opinions and perspectives from employed adults, and they may not speak for the unemployed or underemployed adults of the population. However, there was a greater demographic diversity among the Elders who participated; they had varying levels of education and income status. The focus group participants also tended to be those more actively involved in the community, so it is difficult to generalize the results to all residents of Waskaganish.

The use of an interview guide may have hindered the discovery process because the amount and type of data gathered was often limited to the questions asked. The participants would answer what was asked of them, but some had difficulty elaborating on their responses. Furthermore, although the interview guides were developed with community collaboration, they were not pilot-tested prior to use. The interview guides were comprehensive and detail-oriented, and this may have contributed to interview fatigue. Since

there were many dimensions of each aspect of culture to cover, the interviews were often over an hour in duration. Pilot-testing would have yielded a more focused approach, maximizing opportunities to elaborate and minimizing interview fatigue.

The strength of this study was its ability to engage the community to be more involved in the Team in Aboriginal Anti-Diabetic Medicines. Input from community members was welcomed throughout the fieldwork portion of the study to ensure that the needs of the community were met. The results of this project were summarized into a plain-language report and submitted to the local Elders committee for approval.

9.3 Implications & Future Directions

This study was designed with the intention of gathering the community's feedback on traditional medicine. By focusing on participants' opinions and beliefs, we are able to provide recommendations on what could be done. For example, the lack of awareness about traditional medicines should be addressed. Many recommendations were brought forth through the interviews and focus groups, as described in the following sections.

9.3.1 Traditional food & preparation

One participant suggested the creation of a recipe book of traditional dishes, along with the names and spellings of Cree food items to help maintain a link with the bush dialect. For those who want to know more about the health benefits of the foods, it would also be helpful to provide the nutritional value and content of the foods.

Access to affordable healthy foods is lacking in the north. A "true" Cree food guide, adapted to the availability of certain foods would allow the community members to make realistic food choices at the supermarket. One participant mentioned that grocery store tours have been successful in the past, and

suggested that this be continued. Some community members expressed interest in building a greenhouse or creating gardens with hardy vegetables that grow well in the extreme climate, such as potatoes, carrots, or parsnips.

The perseverance of traditional food preparation techniques could be achieved by community-run cooking classes for Elders and youth. Since market food makes up the majority of the diet, more shopping and cooking classes with small groups would help the community members to get the most out what is available.

9.3.2 Traditional medicine

Based on feedback from community, it was suggested that the Elders and Youth councils should get involved with promoting traditional medicine activities for the community.

The community members emphasized a need to bring traditional medicine knowledge to the community where the youth and adults who spend limited time in the bush could learn more. It was suggested that workshops be held with Elders, as they are the main holders of this information. The local radio could be used to encourage youth to seek knowledge and training about medical traditions, as it is part of their culture.

Since there is more awareness about using traditional medicine for diabetes in other communities, participants suggested collaboration throughout Eeyou Istchee to share collective knowledge about different medicines.

The health care professionals have very little knowledge about traditional medicine. They are interested in hands-on workshops conducted by Elders so that they can learn how the medicines are used. These workshops would be a positive stepping stone for integration.

9.3.3 Future directions

Much information came out of the interviews and focus groups, and it was difficult to choose the direction of the study. There are many more threads and leads that could be expanded upon with more focused research in the future. For example, the affordability of full-time bush living, the impact of residential schooling on the current middle-aged population, and gender roles in a modern society were briefly touched upon in the interviews.

This study was a starting point for further exploration of Cree culture and "what it means to be Cree". The interviews and focus groups provided a snapshot of what is currently happening in Waskaganish First Nation. I hope that this outsider's perspective will encourage community members to preserve the knowledge about medicinal plants and maintain a powerful connection with the land and resources that surrounds them.

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APPENDICES

Appendix 1: Interview Guides

Semi-Structured Interviews

General Information

Age: 15-25 (young adult) ____ 26-54 (adult) _____ over 55 (Elder) _____

Gender: Male _____ Female ____

1. Are you from Waskaganish?	
2. How many persons, including yourself, currently live in your household?	
3. Are you currently employed? What level: part-time, full-time, seasonal?	
4. What is your main source of income?	
5. Where did you receive your education?	
6. What is the highest level of education you have received?	

Aspects of Culture (Topic 1)

Language

1. What language do you use at home?	
2. In the bush?	
3. At social events?	

Traditional food

4. Do you eat traditional food? Why? If you do not, why not? Does this affect your relationship with family and friends?
5. Which traditional foods do you like the most?
6. Can you explain how you would prepare a traditional meal?
7. Which traditional foods do you like the least? Why?
8. Where do you get traditional food from? /Where does your family get TF from?
9. Do you share food with family and friends? Do they share food with you? Why is this tradition important?
10. What, to you, are the most **important** traditional food items and why?
11. Which **non-traditional foods** have you adopted as part of your diet? Why do you like to eat these foods?
12. What do you consider "healthy eating"? Do you believe you have enough information to make healthy food choices?

Traditional Food Preparation

13. Who prepares traditional meals in your home? Have you been taught traditional food preparation techniques and cooking habits? Have your (their) cooking habits changed since you were younger?

Food Items

14. ***Game***				
How do you prepare game?	☐ Cooked (baked, fried, boiled)		☐ Smoked or dried	
Do you use:	☐ Organs	☐ Bones		
15. ***Fish***				
How do you prepare fish?	☐ Cooked (baked, fried, boiled)		☐ Smoked or dried	
Do you use:	☐ Organs	☐ Fish eggs	☐ Bones	
What is your favourite type of fish?				
16. ***Birds***				
How do you prepare birds?	☐ Cooked (baked, fried, boiled)		☐ Smoked or dried	
Do you use:	☐ Organs	☐ Bones		
17. ***Bannock***				
How do you prepare bannock?	☐ Baked	☐ Fried	☐ Traditional	
18. ***Broth and animal grease***				
Do you make broth from traditional food sources?	☐ Yes	☐ No		
Do you serve it at meals?	☐ Yes	☐ No		
Do you use animal grease in your cooking?	☐ Yes	☐ No		
Which animal greases do you use?				
Do you serve it at meals?	☐ Yes	☐ No		
Have you ever used animal grease as medicine?	☐ Yes	☐ No		
19. ***Berries***				
Do you go berry-picking?	☐ Yes	☐ No		
What do you use berries for?				
Have you ever used berries/plants as a medicine?	☐ Yes	☐ No		
20. ***Other foods:*** Do you know of any other foods that can be found in the bush?				
21. ***Teas***				
Do you drink Labrador tea?	☐ Yes	☐ No		
Have you ever used Labrador tea as medicine?	☐ Yes	☐ No		
Do you use any other plants as teas? What are they?				

Frequency of Traditional Food and Market Food Consumption

22. How often do you usually eat traditional food?
a. Daily *b. At least once per week* *c. At least once per month* *d. Special occasions*
23. Has the amount of traditional food you eat changed from when you were younger? If yes: Why has it changed?
24. In what ways do you think traditional food and local food use can be promoted?

Celebrations & Cultural Events

25. How often do you celebrate feasts?
26. What do you attend or host feasts for?
27. What are the most important cultural events in the community?

Traditional knowledge (TK)

28. **Transmission of knowledge**: Where do you/did you obtain traditional knowledge?
29. Do you use traditional knowledge in your daily life? Can you provide an example of when you used traditional knowledge?
30. Do you feel that you learned enough traditional knowledge to pass on to future generations? Why or why not?

Traditional activities

31. Which traditional cultural activities do you participate in?
32. Do you go in the bush?
33. What skills are needed to live in the bush?
34. Has the amount of time you spend in the bush changed over the years? Why is that?
35. Why do you go into the bush?

Traditional Medicine Use (Topic 2)

1. Who do you go see when you are not feeling well?
Healer Doctor/Nurse Other
2. Do you believe that traditional medicine can help you when you are sick? Why/why not?
3. Have you used traditional medicine before? Yes _____ No _____
4. If you have used traditional medicine before, what did you use it for? a. Illness b. Ache/pain c. Infection d. Prevention e. Regular part of the diet f. Other (specify)
5. How was your experience using traditional medicine? (Did it help?)
6. Have your experiences of illness changed your attitude toward traditional medicine use? How?
7. What do you believe could be barriers for the non-use of traditional medicine?
8. If traditional medicine were more available to the community, through the clinic or through local Elders, do you think that you would use them more? Why?
9. Where do you receive your traditional medicine?
10. Have you ever participated in any traditional healing activities? a. Do you believe that these activities help you? Why/why not?

Follow-Up Interviews

Food:

1. How many times a day do you eat snacks?
2. What kind of snack foods do you eat? Why do you like these snacks?
3. How often do you drink soda pop?
4. Do you like to eat fruits and vegetables? Why or why not?
5. How do you use fruits and vegetables?
6. When do you eat them?

Culture:

1. Do you participate in walking out ceremonies?
2. Do you know of any traditional songs and dances?
3. What traditional crafts (beadwork, clothing) and tools are made?

Religious Beliefs:

1. Are you a member of one of the Churches in the community? Which one?
2. Do you participate? How do you participate and how often do you participate?

Traditional Medicine:

1. Do you know anyone who provides (makes/prepares/gives out) TM? (Name & where they can be found)
2. Do you know anyone who has tried TM? (Friends/family)
3. Do you need proof/evidence before you use TM? What kind of proof?
4. Do you know of any plants or animal parts that can be used as a medicine?
5. Have you ever heard of a sweat lodge? Shaking tent? Do you know anyone who has used either of them? Do you agree with their use? Do you believe that they can help you?

Healer Interview

Traditional Medicine Delivery

1. How did you learn about traditional medicines?
2. Do you have people who come to see you for traditional medicine?
3. What do most people come to see you for or ask you advice about?
4. Do you receive payment for providing traditional medicine?
5. Do you often teach people about traditional medicine?
6. Do you think that traditional medicine will work for people with diabetes?
7. Have you ever given anyone traditional medicine for diabetes? Has anyone ever asked you for traditional medicine for diabetes?
8. For the people that have asked you about traditional medicine for diabetes, what do you recommend to them to use?

Traditional Medicine Integration

1. Do you support the idea of traditional medicine being made available at the clinic?
2. What do you think would be the benefits of having traditional medicine at the clinic?
3. Do you think that there would be any disadvantages to having traditional medicine at the clinic?
4. What do you think would be the best way for healers and health care professionals to work together to make traditional medicine available at the clinic?
5. Do you know of any other healers that work in Waskaganish or provide medicine in Waskaganish?

Focus Groups

Questions for Community Members

1. Do you believe that traditional medicine can help treat diabetes?
2. Do you know anyone who has used traditional medicine for diabetes?
3. If you had diabetes, would you be willing to try traditional medicine?
4. Do you support the idea of traditional medicine being made available at the clinic?
5. What would be the benefits of having traditional medicine available at the clinic?
6. What would be the *disadvantages* of having traditional medicine available at the clinic?
7. How can Healers and health care professionals work together to make traditional medicine available at the clinic?

Questions for Healers & Elders

Traditional Medicine Delivery

1. How did you learn about traditional medicines? / Which traditional medicine do you know the most about?

2. Have you ever been given traditional medicine [as a patient]?

3. Have you ever taught anyone about traditional medicine?

4. Do you think that traditional medicine will be able to help people with diabetes?

Traditional Medicine Integration

1. Do you support the idea of traditional medicine being made available?

2. If traditional medicine will be made more available through the clinic, do you think that people will use them more?

Questions for Health Care Professionals

Traditional Medicine Integration

1. Do you believe that traditional medicine can help treat diabetes?

2. Do you support the idea of traditional medicine being made available at the clinic?

Question from moderator: Are you interested in learning more about traditional medicine?

3. What would be the benefits of having traditional medicine available at the clinic?

4. What would be the limitations of having traditional medicine available at the clinic?

Traditional Medicine Delivery

1. Do patients ever disclose to you that they have used traditional medicine?

2. Do you ask patients if they have used or are using traditional medicine?

3. Do you support the use of traditional medicine as a treatment option for diabetes?

4. How can Healers and health care professionals work together to make the integration of traditional medicine work?

5. Do you have concerns about mixing conventional and traditional medicine?

Appendix 2: Informed Consent Form

Letter of Consent

Please read the following consent form carefully. If you have any questions or concerns, please do not hesitate to ask us at any time.

Introduction

Diabetes mellitus is a disease which is identified by high blood sugar levels. Many members of your community are affected by this disease, and the number is growing. If untreated, diabetes can lead to serious complications such as eye disease, kidney disease, and nerve damage.

In 2003, the Canadian Institutes of Health Research Team in Aboriginal Anti-Diabetic Medicines (CIHR-TAAM) was created. It is headed by Dr. Pierre Haddad at Université de Montréal. Other groups involved with this study include the Cree Board of Health, McGill University's Centre for Indigenous Peoples' Nutrition and Environment (CINE), University of Ottawa, and the Montreal Botanical Gardens' Institut de recherche en biologie végétale (IRBV).

This team is dedicated to creating new, shared knowledge through the collaboration of Cree community members and scientists. Cree Healers and Elders have identified traditional medicinal plants with anti-diabetic properties. The scientists are currently studying these plants in the laboratories. Once the research is completed, the team and the communities would like to reintroduce these medicines back to the people. The Cree Board of Health's goal is to integrate the traditional medicinal plants into the existing diabetes care system.

Purpose

This study will be conducted by the researcher and your fellow community members (community collaborators). It aims to contribute knowledge to the community and to the Team in Aboriginal Anti-Diabetic Medicines. The main goal

of this study is **to determine the appropriate delivery of traditional medicines within anti-diabetic therapy**. The specific objectives are as follows:

1. To understand how the community's cultural beliefs and practices affect traditional medicine use.
2. To understand how the integration of traditional medicine into the conventional diabetes care system is viewed by health care professionals, Healers and Elders, and members of the community.

The findings from this study will be used for the following purposes:

1. To understand the current Cree culture;
2. To promote the appropriate use of traditional medicine;
3. To facilitate the integration of traditional medicine into the conventional care system.

All members of the community who live in Waskaganish First Nation are invited to participate in this study.

Study Description

Interviews

As a participant in this study, you will be visited at your home or at a comfortable meeting place for the interview with the researcher and a community collaborator. The interview will require about 2 hours of your time. It will be scheduled at your convenience. This interview will ask questions about your culture, such as:

1. Traditional food use and preparation techniques;
2. Traditional knowledge and traditional activities;
3. Traditional medicine use.

If you would like to do the interview in Cree, an interpreter will translate. Please note that the interview **will be recorded** to help the researcher transcribe the information you provide. All data obtained during the interview will be stored in a secure location and will remain confidential.

Focus Groups

As a participant, you will also be invited to attend a focus group session. You and your fellow community members will join the researcher and a community collaborator at a comfortable meeting place for this session. The focus group session will require about 2 hours of your time. Topics that will be addressed include:

1. The integration of traditional medicine for diabetes into a conventional health care system;
2. The appropriate delivery of traditional medicine.

The focus group sessions will be conducted in English or Cree (or both). Please note that the session **will be recorded** to help the researcher transcribe the information you provide. All data obtained during the interview will be stored in a secure location and will remain confidential.

Review

After the researcher completes the analysis of the data collected during the interviews, you will be invited to review your own data and approve it. We wish to ensure that the information you provide is interpreted correctly. Once you and your fellow participants have given your approval, a final report will be prepared.

Right to Refuse Participation

Your participation in this study is voluntary. You have the right to withdraw from the study at any time. If you choose to withdraw, there will be no consequences, and you will continue to receive services from the Cree Board of Health.

You have the right to refuse to answer any questions. If you feel uncomfortable at any point during the study, you are welcome to contact the community collaborators or the researchers.

Benefits and Risks

There is little to no risk involved if you participate in this project. The interview guide was developed with the input of the community collaborators in order to be culturally appropriate.

The results from the analysis will be presented back to you before a final report is written. No findings will be presented to the public or published until the community has approved them. Your community will benefit from the input you provide about your culture and your beliefs.

Confidentiality

The information you provide to the researcher and community collaborators will only be used to achieve the goals and fulfill the purposes of this study. Your identity and personal information will be kept confidential. A coding system will be in place to protect your identity in the final report. If you are quoted directly, you will remain anonymous as your identity will not be revealed.

Interviews will be kept private since they will be conducted by the researcher and a community member. However, privacy is not guaranteed for the focus groups because you will be interacting with fellow community members.

All data will be stored electronically and password-protected on the researcher's computer, with a password-protected back-up copy on the researcher's portable hard drive. Printed transcripts will be stored in a locked cabinet at the School of Dietetics and Human Nutrition. A copy will also be stored in a locked cabinet at the Band Council Office. Only the researcher and the community collaborators will have access to the data.

Compensation

All participants will be compensated for their time. $25 per hour will be given for interviews and focus group participation.

Contacts

If you have any questions about this study or about the Team in Aboriginal Anti-Diabetic Medicines, you may contact one of the following people:

Researchers	
	E-mail address
Christine Tabib, BSc	christine.tabib@gmail.com
Timothy Johns, PhD	tim.johns@mcgill.ca
Alain Cuerrier, PhD	alain.cuerrier@umontreal.ca
Community members	
	E-mail address
Charles Esau	charles.esau@waskaganish.ca
Tim Whiskeychan	tim.whiskeychan@waskaganish.ca

By signing this consent form, **I agree to participate in the study**.

I agree to be recorded ☐ Yes ☐ No

Choose **one** of the following options:

- ☐ I allow the researcher to quote me anonymously
- ☐ I wish to be acknowledged **by name** for my contributions

My signature means that I understand all of the information given in this form.

Name of participant	Signature of participant
	Date
Name of researcher	Signature of researcher

Consent explained by: _____ Date: _____

Questions answered by: _____ Date: _____

Participant's contact information: _____

Check-list for components completed

Interview	☐ Date:	_____
Focus Group Session	☐ Date:	_____
Review	☐ Date:	_____

A copy of this consent form will be given to you once you have signed it. Please keep it for your personal records.