On-the-Ground Realities of Health Program Delivery in Addressing Community Needs: A Community-Based Participatory Research Approach in the Moose Cree First Nation

By

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Student Contributions

My role in this research encompassed the development of research ideas, the conceptualization of the article, and collaboration with the program coordinators at Moose Factory Health Center to thoroughly develop project plans. I was responsible for conducting and transcribing the interviews, conducting thematic analysis, and drafting the initial draft. I led the revision process alongside the co-author and am currently preparing the article for publication while submitting the thesis. In the article, my contributions include implementing program activities in collaboration with my supervisor and project coordinators, fostering community relationships, participating in the research design for fieldwork, and leading the writing process. I collected and analyzed the data, which was then verified with the program coordinators and the Community Health Coordinator to ensure it accurately reflected the interviews and conversations. I also drafted the first version of the thesis, which was subsequently refined based on feedback from my supervisor to enhance the clarity and flow of the document.

Abstract

Indigenous communities in northern remote Canada face disproportionate health disparities, including high rates of food insecurity and prevalence of diet-related chronic diseases stemming from colonial disruption of traditional food systems and increased reliance on poor-quality market foods. This study described how Indigenous-led health programs, the Healthy Babies, Healthy Children Program and the Diabetes Prevention Program, in Moose Cree First Nation (MCFN) respond to food insecurity drivers and support community health and wellness. It also documents the on-the-ground realities of program delivery, including operational challenges faced by the programs. Grounded in community-based participatory research (CBPR), this research involved firsthand participation in program delivery alongside the Moose Factory Health Center coordinators, complemented by semi-structured interviews with community members (n=6) and health center staff (n=3), and participant feedback from program activities. High food costs, limited access and availability, and poor food quality continue to drive food insecurity in the community. Health programs responded through culturally grounded, family-oriented nutrition education activities, including cooking and gardening workshops, food demonstrations, and baby food preparation sessions. Beyond their formal objectives, these programs function as vital community support systems, providing tangible resources, fostering social connections, and serving as frontline responders to non-clinical immediate family needs. However, systemic barriers significantly constrained program delivery, including inadequate funding, limited infrastructure, staffing shortages, and ongoing COVID-19 impacts. The findings demonstrate that while Indigenous-led health programs play crucial roles in addressing food insecurity and promoting community wellness, they require sustainable funding models that reflect the true costs of service delivery in northern, remote communities. The study emphasizes the need for policy transformation from top-down approaches toward community-informed, Indigenous-led governance that supports holistic health programming aligned with Indigenous concepts of health and self-determination.

Keywords: *Community-based participatory research, health promotion, Indigenous health*

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List of Abbreviations

MCFN	Moose Cree First Nation
MFHC	Moose Factory Health Center
HBHCP	Healthy Babies, Healthy Children Program
DPP	Diabetes Prevention Program
CBPR	Community-Based Participatory Research
NNC	Nutrition North Canada
ISC	Indigenous Services Canada
NHFI	Northern Healthy Foods Initiatives
CPNP	Canada Prenatal Nutrition Program
AHSOR	Aboriginal Head Start Program on Reserve
ADI	Aboriginal Diabetes Initiative
HTP	Health Transfer Policy
SLHDP	Sandy Lake Health and Diabetes Project
HFN	Healthy Foods North
FNIHB	First Nations and Inuit Health Branch
CHW	Community Health Workers
SDOH	Social Determinants of Health
WHO	World Health Organization

CHAPTER ONE

General Introduction

Community Nutrition has been my core motivation in working with families and communities with the goals of promoting nutrition approaches that align with their needs, priorities, resources, and capabilities of individuals, families, and communities. While it may be simple to say how to eat and live healthily, implementing it requires understanding the complex barriers people face every day. That is why it is important for me to understand the lived experience of families and see situations from their perspective to truly understand where they are coming from and build the foundation from there.

Indigenous people in Canada continuously face the long-lasting impacts of European colonialism, which fundamentally dismantled Indigenous ways of life. It disrupted traditional food systems, leading to the loss of lands and traditional food sources (Berkes & Farkas, 1978; Krech III, 1984; Liebow & Trudeau, 1962; Skinner et al., 2013; Taylor, 1972), which forced them to shift from locally sourced foods to a market-based food system that presented additional challenges, including high food costs, poor food quality, and limited food options (Kenny et al., 2020). These lifestyle disruptions, shifts in dietary patterns, and increased barriers to food access have contributed to the prevalence of diet-related diseases and alarming rates of food insecurity in Indigenous populations (Samson & Pretty, 2006; Skinner et al., 2013; Huet et al., 2012; Willows et al., 2009). The same colonial processes shaped Indigenous health services designed for mainstream society, moving Indigenous peoples away from their holistic concept of health that seeks balance between physical, mental, emotional, and spiritual aspects, recognizing that overall well-being emerges from reciprocal relationships between the individual, their families, communities, and the land (Sasakamoose et al., 2016; Snowshoe et al., 2017; Auger et al., 2016; Brady 2015; Stanford et al., 2019).

Canada's healthcare system is viewed as one of the best in the world, renowned for its publicly funded and universally accessible services (Martin et al., 2018). The primary objective of this system is *"to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers"* (Government of

Canada, 1985; amended 2017, p.5). However, access to these services is neither equally nor universally accessible to all, particularly for Indigenous people in northern remote communities (Greenwood et al., 2018; Horrill et al., 2018; Browne, 2017; Hahmann et al., 2019; Hayward et al., 2020; Lix et al., 2009; Kim, 2019). Indigenous healthcare is further complicated by fragmented health governance structures, where responsibility for Indigenous healthcare and service delivery is divided among federal, provincial, and territorial levels, leaving communities with confusion and unmet healthcare needs (Greenwood et al., 2018; Lavoie et al., 2015).

Recognizing the challenges of food insecurity and the increasing rates of diet-related chronic diseases, many northern Indigenous communities have developed community-led, local food initiatives to address food insecurity, such as community gardens and greenhouses (Ferreira et al., 2022; Herrmann et al., 2020; Robidoux & Mason, 2017; Skinner et al., 2013, 2014). Health promotion and prevention programs are also implemented at federal and provincial levels to support Indigenous children, families, and communities through health and nutrition education (Nutrition North Canada, 2020; Indigenous Services Canada, 2024; Ontario Ministry of Children, 2016; Wright et al., 2019). While these programs and initiatives are typically delivered through community health centers and health services, their reach and effectiveness are often limited by the “patchwork” of policies and agreements surrounding Indigenous health care, resulting in poor coordination that leads to funding gaps and programs misaligned with local needs and realities (Lavoie, 2018; Lavoie et al., 2010; Mashford-Pringle, 2013; Stefanon et al., 2023). Previous studies that documented these systemic challenges and local needs faced by northern remote health services have largely relied on methods such as interviews, sharing circles, and secondary analyses (Oosterveer et al., 2015; Wali et al., 2023; Skinner et al., 2013; Stefanon et al., 2023), which may offer limited insight into the everyday challenges and realities of health programs.

It remains important to acknowledge the Government of Canada's ongoing contribution to food insecurity and associated long-term health inequities in Indigenous communities, but there is also value in understanding how communities address these challenges through their own health programming efforts

(Dennis & Robin, 2020). This thesis applies a community-based participatory research (CBPR) approach through direct involvement and participation in program delivery alongside program coordinators, providing a comprehensive description of how health programs address drivers of food insecurity and lived understanding of the extent to which systemic challenges are experienced by health programs, considering the changes and rebuilding efforts after COVID-19. It also uses a strength-based approach that focuses on the community strengths, valuing what the program offers beyond formal objectives (Foot & Hopkins, 2010) and thus offering insights into the broader role of health programs within the community context. With limited research on Moose Cree First Nation's health programs, this project builds on ongoing local food efforts in MCFN, focusing on supporting local food development, food sustainability, and strengthening long-standing community initiatives through a partnership established in 2018.

1.1 Community Profile

The MCFN, located in Moose Factory, constitutes one of seven communities that collectively represent the Mushkegowuk Council, a regional entity that has been operating as a cooperative political organization since 1984 (Dylan et al., 2013). MCFN is situated at the base of James Bay, at coordinates 51.264 latitude and −80.597 longitude (Louttit, 2006). The community has 5,160 registered band members, with 1,823 residing on the reserve (Government of Canada, 2024a). The combination of the Hudson Bay Company's arrival in 1673 and its location on the Moose River led to its name, Moose Factory (Maberley et al., 2002). Moose Cree, Swampy Cree, and Eastern Cree are the three spoken dialects, in addition to English (Gaudet, 2016). The community is known for its rich heritage with generations of knowledge keepers, a strong linguistic presence, and a culture deeply anchored in traditional land knowledge, *pimatisiwin* (life) values, and kinship practices (Gaudet, 2017).

Moose Factory is accessible by boat taxi in the warmer months and by winter road during the colder months. Additionally, helicopter services provide year-round access, which is crucial during the transitional freeze-up and breakup periods. Food is available and accessible for purchase at the Northern Store, private grocery stores, and the local Farmers' Market (Ferreira, 2022). The primary food source for most Indigenous peoples in the JHB region is the Northern Store, the successor of the Hudson's Bay Company, a monopoly that has been harshly criticized for its predatory practices across northern Canada (Burnett and Hay, 2023).

1.2 Positionality

This community-based participatory research with MCFN was informed by Indigenous research methodologies. Following Steinhauer's (2002) emphasis on relational accountability and transparent research relationships, I begin by locating myself within this research. Sensoy and DiAngelo (2017) explained that positionality recognizes that your position relative to others influences your perceptions and understanding. This understanding acknowledges that all knowledge is situated and that researchers

cannot claim objectivity or neutrality. Instead, we must honestly examine how our identities, experiences, and social positioning influence our research practice and the knowledge we co-create with communities. To begin, I introduce myself and explain how I came to conduct this research and what this project means to me outside academia, and as a non-indigenous researcher. As a Filipino immigrant navigating life in Canada, I encounter cultural contexts vastly different from my own. This experience has motivated me to learn about local culture, history, and practices with humility and respect. During my undergraduate years in the Philippines, I worked with remote communities where we lived in the community for weeks, immersed ourselves within the community, built relationships with the people, and helped them strengthen their existing nutrition-specific and sensitive programs and services. This work broadened my perspectives in community health and helped me understand that individual choices are not enough to change the trajectory of our life, health outcomes, and everything in between—systemic support is essential for meaningful change. These experiences solidified my aspiration to pursue a career in Community and Public Health Nutrition with the goals of addressing food and nutritional challenges, improving the quality of life, and promoting optimal health outcomes for communities. This is where I decided to choose my supervisor, Dr. Michael Robidoux, who has been collaborating and working with Indigenous communities. Throughout my fieldwork in the community and in conducting this research, I have always been proactively listening, continuously learning, and constantly reevaluating the value and meaning of my research and my position as a researcher. My positionality as a non-Indigenous researcher working within Indigenous methodologies requires careful navigation to avoid appropriation while honoring the relational principles that guide this work. I am mindful not to over-emphasize or misappropriate Indigenous methodologies, but rather to allow these frameworks to guide my practice in ways that serve Indigenous communities and knowledge sovereignty. This positioning demands ongoing self-reflection about my motivations, the potential impact of my research, and my responsibilities to the communities with whom I work.

CHAPTER TWO

Literature Review

The fragmented governance of Indigenous healthcare in Canada, characterized by divided responsibilities among federal, provincial, and territorial jurisdictions, traces back to European colonization that resulted in colonial policies that systematically dispossessed Indigenous peoples from their traditional lands and dismantled their autonomous systems of governance. This literature review examines the multifaceted factors contributing to the current healthcare system and health services experienced by Indigenous communities, with particular focus on northern remote regions. First, this section briefly outlines the historical context, nutrition transition, structural and social determinants of Indigenous peoples' health, and food and nutrition challenges that Indigenous peoples have endured. Next, it will describe the healthcare policies that shape healthcare services of Indigenous people across Canada, highlighting jurisdictional complexities and their impacts on care quality and accessibility. Finally, it will discuss some of the health promotion programs operating in northern, remote First Nations, with emphasis on food and nutrition-related initiatives.

2.1 Colonialism and Nutrition Transition

European colonization has brought a range of historical, cultural, and political struggles for Indigenous peoples in Canada. These include forced displacement from their ancestral lands, disruption of traditional ways of living, and loss of traditional food sources (Berkes & Farkas, 1978; Krech III, 1984; Liebow & Trudeau, 1962; Skinner et al., 2013; Taylor, 1972). These changes have resulted in a nutrition transition from locally procured traditional food to highly processed market food, which has led to increased consumption of foods high in calories but low in nutritional quality (Samson & Pretty, 2006; Skinner et al., 2013; Sumner et al., 2019; Timler et al., 2019). This has also led to the loss of culture-specific food activities and traditional food systems that involve a high level of physical activity such as hunting, fishing, and gathering, which are necessary for good health (Kuhnlein & Receveur, 1996).

Nutrition transition is a term used to describe the shift from a diet based on locally sourced plants and animal food sources to increased consumption of energy-dense market foods (Samson & Pretty, 2006). Indigenous food systems have been continuously replaced with highly processed alternatives since the earliest contact with Europeans (Damman et al., 2007; Kirmayer et al., 2003). This meant transitioning from traditional foods to increased reliance on processed, store-bought options that are often high in refined carbohydrates and saturated fats, and low in nutritional value (Samson & Pretty, 2006; Skinner et al., 2013; Sumner et al., 2019; Timler et al., 2019). Additionally, the increased dependence on Western staples like flour, sugar, lard, and baking powder, as well as the changes in harvesting practices, has led to a more sedentary lifestyle, has resulted in a significant increase in chronic diseases such as obesity, type 2 diabetes, cardiovascular diseases (CVD), and chronic kidney diseases, which were previously uncommon in Indigenous populations (Kuhnlein et al., 2004; Patchell & Edwards 2014; Yeates & Tonelli 2006). In Canada, First Nations peoples experience more than double the CVD prevalence compared to non-First Nations people (Anand et al., 2001). Poor access to and trust in the healthcare system, limited social support, education, and health and nutrition literacy contribute to these risks and health outcomes (Anand et al., 2019).

2.2 Food and Nutrition Challenges in Northern, Remote Indigenous Communities

Indigenous peoples represent the fastest-growing population in Canada, with growth of 9.4% from 2016 to 2021, reaching 1.8 million and representing 5.0% of the total Canadian population (Statistics Canada, 2023). Despite the growing population, Indigenous people in northern remote communities in Canada continue to face significant health disparities, including a higher prevalence of dietary-related diseases such as diabetes, and related risk factors as compared to the general population (Hahmann et al., 2019; Hayward et al., 2020; Lix et al., 2009; Kim, 2019). Aside from this, food insecurity, is also a serious public health issue for Canada's indigenous populations, stemming from

several interconnected factors in the North (Power, 2008; Willows, 2005). The World Food Summit (1996) states that food security exists:

> … *"when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."*

Food security is understood through four key pillars defined by the Food and Agriculture Organization (2006): access, availability, utilization, and stability. Access refers to an individual's economic means to purchase food in retail food system; availability relates to the production and supply of food; utilization involves the skills and knowledge to prepare nutritious meals within their local food environment such as households, schools, and communities; and stability refers to sustainability of the three over time (Power, 2005). In the context of northern Indigenous Canada, food security is defined as the capacity of communities to access food, both market-based foods and traditional foods, grounded in the physical environment and sustained through Indigenous knowledge systems and cultural practices (Paci et al., 2004; Council of Canadian Academies, 2014). Environmental degradation, climate change, and ecosystem disruptions threaten the availability and safety of traditional foods, while high costs and limited access affect market food options (Guyot et al., 2006; Kuhlein & Chan, 2000). And in terms of utilization, traditional foods remain more nutrient-dense and culturally significant, making it essential to consider both food systems when designing public health strategies to address food insecurity among Indigenous populations (Kuhlein, 1989; Batal et al., 2004).

Food insecurity affects the majority (54.2%) of First Nations households, with 13% experiencing severe food insecurity, while First Nations communities without road access face 23% higher food insecurity rates compared to remote communities with road access (42%) (FNRHS, 2018). Northern communities experience a high cost of living primarily due to their isolation, which drives up the prices of goods, especially perishable foods. Food costs can vary significantly between communities based on factors such as remoteness, climate, and transportation expenses (Huet et al., 2012; Leblanc-Laurendeau,

2020; Odoms-Young et al., 2023). Food security is closely linked to food affordability, and when food prices exceed family incomes, providing nutritious meals on a daily basis becomes a significant challenge (INAC, 2004). Moreover, several studies have highlighted the limited availability of healthful foods in comparison to the non-nutrient-dense food items in local stores (Cunningham-Sabo et al., 2008; Mead et al., 2010). This disparity is perceived as a significant barrier to health for individuals, contributing to inadequate intake of nutrients, resulting in diet-related conditions such as obesity, type 2 diabetes, and chronic kidney disease (Huet et al., 2012; Willows et al., 2009). In addition to availability, issues of food quality and freshness remain a pressing concern, particularly with the presence of past-date and expired items available for purchase (Cunningham-Sabo et al., 2008; Parker et al., 2019).

2.3 Initiatives Addressing Food Insecurity and Health Promotion in Remote, Northern Indigenous Communities in Canada

Nutrition transition and increased prevalence of food insecurity, both stemming from the lasting impacts of colonization, are directly related to the increased risk to chronic diseases in remote, northern communities. In response, many programs and initiatives have been implemented to mitigate these risks and promote chronic disease prevention and health improvement efforts in these regions (Patchell & Edwards, 2014; Yeates & Tonelli, 2006; Huet et al., 2012; Willows et al., 2009).

2.3.1 Food subsidy programs

To address these factors contributing to food insecurity in northern Canada, the federal government introduced the Food Mail Program, which was replaced by Nutrition North Canada (NNC) in 2011. NNC is a retail subsidy initiative designed to reduce the cost of nutritious food for community members across 125 remote northern communities. The program subsidizes transportation costs for shipping perishable, healthy foods to eligible communities, most of which rely heavily on-air transport for their food supply (Nutrition North Canada, 2020). Retailers in these communities receive subsidies to

offset costs, provided the food is shipped by air from registered country food distributors or processed in government-regulated, export-approved commercial plants (INAC, 2016). However, despite this subsidy program, food prices in northern communities remain high, and there are significant price inequities across regions and communities (Galloway, 2017). It is essential to recognize that these subsidies go to the retail companies that supply Northern communities rather than directly to the consumers or communities that purchase the foods (Spiegelaar & Tsuji, 2013). The current subsidy rates have not been sufficient to ensure fair and equitable access to nutritious, healthy food across all northern communities, leaving many households struggling to afford the food they need (Naylor et al., 2020). Canada's approach to food security fails to adequately consider the distinctive geographical challenges, social circumstances, and cultural practices of Indigenous communities across the nation, particularly regarding their traditional methods of obtaining, preparing, and sharing food resources (Power, 2008). These policies often apply standardized solutions that overlook the complex relationship Indigenous peoples maintain with their traditional food systems. More recently, NNC provided funding for traditional harvesting and growing food through the Harvesters Support Grant and Community Food Programs Fund, supporting and strengthening the efforts communities make to support local food security. However, eligibility requirements, such as reliance on air transportation for more than 8 months and NNC subsidy qualification, exclude many communities, highlighting potential program gaps (Government of Canada, 2025).

2.3.2 Local Food Production and Food Programs

On the other hand, many Indigenous communities have implemented community-based food security programming (Skinner et al., 2012), many of which also support food sovereignty through community-led initiatives and land-based food strategies (Leibovitch Randazzo & Robidoux, 2019). Fieldhouse and Thompson (2012) described the Northern Healthy Foods Initiatives (NHFI) in Manitoba, focusing on their strategies to address food insecurity through gardening, the establishment of

greenhouses, and the creation of economic development opportunities. The program has increased access to nutritious foods, including poultry, honey, vegetables, fruits, and traditional delicacies such as fish and goose meat (Manitoba Indigenous and Northern Relations, 2017). These gardens are considered a crucial step toward achieving food security (Skinner et al., 2014) and empower communities toward food sovereignty as they can increase greater control over their food systems (Desmarais et al., 2013; McLennan, 2016). Greenhouses and gardening projects in northern communities are recognized as important strategies for increasing local produce and building agricultural skills at both household and community levels (Skinner et al., 2014). In Moose Factory, where the present study is conducted, similar initiatives are also developed and led by the community, fostering local food development and increasing food access for individuals and families (Ferreira et al., 2022; Robidoux et al., 2023). Other initiatives include research collaborations with schools and Indigenous organizations in the Canadian Arctic to promote food security, such as traditional food programs that allow students to participate in preparing, cooking, and eating traditional foods within the school environment (Kenny et al., 2018).

2.3.3 Health Promotion and Nutrition Education Initiatives

2.3.3.1 Federal and Provincial

NNC provides an educational component supporting increased knowledge on healthy eating and food preparation skills through cooking classes, nutrition workshops, educational materials, and trained community workers. However, this is only available for fully eligible isolated northern communities (Aboriginal Affairs and Northern Development, 2013; Indigenous Services Canada, n.d.). Other federally funded nutrition education programs supporting families with young children are the Canada Prenatal Nutrition Program (CPNP) and the Aboriginal Head Start On-Reserve (AHSOR) program. The CPNP provides nutritional support for all at-risk women and also provides support for Indigenous women through nutrition counselling, provision of food and food coupons, food preparation training, and breastfeeding education and support (Indigenous Services Canada, 2024a). Meanwhile, the AHSOR

supports First Nations families and children in early childhood learning and development from birth to age six living on reserves across Canada (Government of Canada, 2024a). The program includes six key components: culture and language, education, health promotion, nutrition, social support, and parental and family involvement (First Nations Health Authority, 2025; Public Policy Forum, 2015). The recent evaluation (2013-2019) of these programs has demonstrated positive outcomes for First Nations children and families, including improved cultural connection, parenting skills, and access to essential needs. However, it also identified significant challenges, including insufficient funding that has not kept pace with population growth and needs, limited access to social determinants of health, such as housing and community infrastructure, employment, food, and nutrition. Additional barriers included funding that does not reflect rising costs and increased service needs following the COVID-19 pandemic, workforce recruitment difficulties, inadequate capacity to respond to specialized needs of families, and the absence of infrastructure in delivering programming (Indigenous Services Canada, 2024).

Moreover, the Ontario Healthy Babies Healthy Children (HBHC) program is a provincial initiative designed to support the health and well-being of families with children from the prenatal stage to age six. It aims to promote optimal prenatal health and birth outcomes, enhance child health and development, and strengthen the parent-child relationship. The program also works to build parenting capacity and encourage positive parenting practices through home visits, early interventions, and connections to community resources, particularly for families facing risks or challenges (Ottawa Public Health, 2025). While programs with the same name are offered in Indigenous communities, they often differ in structure and governance. For instance, unlike the mainstream Ontario HBHC program which is delivered by Public Health Ontario with professional nurses (PHNs) and typically enrolls families for one year or less, the Indigenous HBHC program in Hamilton, ON is self-governed and staffed by lay-person Indigenous family home visitors without PHNs, with families remaining enrolled as long as they have a child under six years of age. Additionally, the Indigenous HBHC program is distinctly funded through the Aboriginal Healing and Wellness Strategy and integrates traditional Indigenous teachings, ceremonies,

and cultural resources throughout service delivery to provide culturally safe and trauma-informed care (Ontario Ministry of Children, 2016; Wright et al., 2019).

Furthermore, the Aboriginal Diabetes Initiative (ADI), funded by Indigenous Services Canada (ISC) through the Health Transfer Policy (HTP), delivers primary prevention and health promotion programs to reduce type 2 diabetes in more than 600 First Nations and Inuit communities in Canada. Aside from diabetes prevention, it also supports initiatives addressing food security and improving access to healthy foods through supporting community activities like healthy food box programs, community kitchens and gardens, store-based nutrition education, school-based programs for children, and skill development activities. These programs are implemented by trained community-based diabetes workers and healthcare professionals in Indigenous communities (Indigenous Services Canada, 2021). First Nations and Inuit communities looking to carry out ADI activities must provide a specific plan for a funding agreement. This plan varies based on factors such as control, flexibility, authority, and the requirements for reporting and accountability, depending on the community's capacity (Health Canada, 2010). ADI had initial funding of $58 million over five years starting in 1999, and increased its budget to $190 million over the following five years in 2005. Currently, ISC allocates more than $50 million annually to support communities under the transfer agreement (Indigenous Services Canada, 2021).

2.3.3.2 Community-based programs

There have also been programs in Indigenous communities mitigating the prevalence of type 2 diabetes. This includes the Sandy Lake Health and Diabetes Project (SLHDP), initiated in 1991, as a collaborative response to the rising prevalence of type 2 diabetes in Sandy Lake First Nation, a remote Oji-Cree community in the subarctic boreal forest region in central Canada. Formed through a partnership between community leaders and academic researchers, the project aimed to develop culturally appropriate, community-driven strategies to improve health outcomes (Kakekagumick et al., 2013). Using a CBPR approach, the project implemented a comprehensive, decades-long multi-level intervention. Notably, it introduced a school-based diabetes prevention curriculum tailored to Grade 3 and Grade 4

students, emphasizing nutrition, physical activity, and diabetes awareness using culturally relevant content and local language (Saksvig et al., 2005) Other strategies included a radio show (Kakekagumick et al., 2013), grocery store labeling programs to promote healthier food choices at the Northern Store (Gittelsohn et al., 1995), individualized teaching on nutrition, health, and physical activity for interested families through home visits, gardening initiatives, and cooking classes (Kakekagumick et al., 2013). While the SLHDP has not been linked to improving diabetes outcomes, the project showed improvements in diabetes knowledge among students, enhanced awareness of healthy eating, and stronger community engagement in wellness activities (Rice et al., 2016). The promising outcomes from this project have led to dependence, research grants, and permanent funding of a prevention program by the Aboriginal Diabetes Initiative of Health Canada (Health Canada, 2012). While the project achieved notable success in education and community involvement, it also faced challenges, including sustainability of funding, staffing shortages, and the difficulty of shifting entrenched dietary behaviors amid high food costs and limited access to healthy foods. Nevertheless, SLHDP is considered a landmark model in Indigenous health promotion, demonstrating the effectiveness of long-term, culturally grounded, and locally led prevention strategies (Kakekagumick et al., 2013).

Moreover, one of the well-documented research-related health intervention programs was the Healthy Foods North (HFN), a community-based chronic disease prevention program developed through a participatory process in collaboration with Indigenous communities in the Northwest Territories and Nunavut. The intervention aimed to promote physical activity, improve diet quality, and food-related behaviors. It included a range of culturally tailored components such as visual materials (e.g., posters, recipes, shelf labels), interactive nutrition education sessions in food stores and workplaces (e.g., meal planning, cooking classes), media campaigns through radio and television, and giveaways (Sharma et al., 2010). Evaluations of HFN showed positive outcomes, including a reduction in the consumption of energy-dense, nutrient-poor foods and a decline in unhealthy cooking practices, indicating overall

improvements in dietary behavior (Kolahdooz et al., 2014). However, despite these successes, the program was discontinued due to the loss of sustained government funding.

Furthermore, in other northern communities, health promotion programs are unavailable due to the overwhelming workload associated with providing acute care services. Health service providers do not have sufficient time and resources to deliver preventive services, resulting in minimal opportunities to educate community members about healthy lifestyle practices (Oosterveer & Young, 2015). These challenges in preventive care are largely shaped by broader Indigenous health policies, which influence outcomes of health service and delivery as well as the distribution of resources in remote communities (Mashford-Pringle, 2013; Walker et al., 2018).

Table 1. Overview of Programs and Services offered by the Federal and Provincial Governments and the Available Programs and Services in MCFN

Federal and Provincial Programs and Services	Available Programs and Services in MCFN
Food Subsidy Programs	
Nutrition North Canada	Nutrition North Canada (seasonal)
Local Food Production and Food Programs	
Harvesters Support Grants Community Food Programs Fund	Community gardens (local food development)
Health Promotion and Nutrition Education Initiatives	
NNC nutrition education component Canada Prenatal Nutrition Program Aboriginal Head Start Program on Reserve Healthy Babies, Health Children Program Aboriginal Diabetes Initiative	Aboriginal Head Start Program on Reserve Healthy Babies, Healthy Children Program Diabetes Prevention Program

2.4 Indigenous Health Policies in Federal, Provincial, and Territorial Systems

Colonial policies not only disrupted traditional food systems but also shaped Indigenous health services by imposing models rooted in mainstream frameworks (Monavvari et al., 2020). Indigenous health care in Canada is governed through a fragmented and jurisdictionally complex system shaped by the colonial legislation *British North America Act (1867)*, now referred to as the *Constitution Act (1867)*,

which delegates the responsibility of healthcare services between federal, provincial, and territorial governments. This decentralized model has resulted in persistent gaps in service delivery, unclear accountability, and inequitable access to timely, quality, and culturally appropriate care for Indigenous communities (Lavoie, 2018; Lavoie et al., 2015; Mashford-Pringle, 2013; Walker et al., 2018).

At the federal level, Indigenous Services Canada (ISC) leads the efforts on Indigenous health, education, and infrastructure. Since 2017, the federal government has transferred responsibility for Indigenous health care from Health Canada to ISC. ISC's mandate is to *"work collaboratively with partners to improve access to high-quality services for First Nations, Inuit and Métis… [and] support and empower Indigenous peoples to independently deliver services and address the socioeconomic conditions in their communities"* (Indigenous Services Canada, 2021). A key federal initiative under ISC is the Health Transfer Policy (HTP) (1989) that builds on the Indian Health Policy (1989) and seeks to increase community-based participation by enabling First Nations and Inuit communities to take control over the administration and delivery of health services and programs managed by the First Nations and Inuit Health Branch (FNIHB) (Lavoie et al., 2011). Although the transfer of control is initiated, communities still need to apply to the FNIHB to take on varying levels of control through transfer agreements, each tied to specific funding models that determine the degrees of flexibility for community control in managing funds and delivering programs (Indigenous Services Canada (ISC), 2021; Kyoon-Achan et al., 2021). However, programs funded under this policy operate independently from other federally funded services, such as those provided at health centers and nursing stations. This lack of coordination and data sharing between programs often leads to service duplication, inconsistencies, and inefficiencies in the delivery of health services(Kyoon-Achan et al., 2021). Despite modest reforms to expand local control, the HTP continues to be developed without sufficient Indigenous participation and consultation, presenting challenges as it fails to address evolving community needs and priorities, requiring other initiatives like Jordan's Principle to fill program gaps (Sinha et al., 2022). Meanwhile, other priority needs, such as traditional healing services, remain ineligible for HTP funding (Smith & Lavoie, 2008).

The poor coordination and inadequate legislative clarity between federal, provincial, territorial, and regional governments on healthcare funding allocation continues to impede health improvements and burden Indigenous Peoples across Canada with persistent inequities (Gabel et al., 2017; National Collaborating Centre for Indigenous Health, 2019; Palmer et al., 2017). Overall, while the HTP represents a key development in Indigenous health governance, enabling First Nations and Inuit communities to administer their own health services through varying agreements (Lavoie et al., 2015) and increases local control over program design and delivery, the policy maintains significant federal control through mandatory program requirements and funding restrictions as determined by ISC (ISC, 2021b).

Building on these policies and in pursuit of greater autonomy and self-determination over health, several Indigenous-led models have emerged. In 2011, First Nations in British Columbia signed the Tripartite Framework Agreement on First Nation Health Governance with the federal and provincial governments. This agreement marked a significant shift in Canada's approach to Indigenous healthcare governance, working towards establishing a new system that prioritizes the needs of First Nations communities. This allows First Nations direct leadership in designing, delivering, and managing health programs and services. With federal funding and guidance, comprehensive efforts now focus on building organizational capacity, engaging community members to identify health priorities, fostering provincial and federal partnerships, developing innovative governance and service models, and enhancing service delivery—all advancing toward complete transfer of control to First Nations authorities (Government of Canada, 2024a).

In 2021, Nishnawbe Aski Nation (NAN) signed the same trilateral partnership with the Canadian federal government and Ontario provincial authorities, formalizing their commitment to transform Indigenous-led health systems within NAN territory, laying the groundwork for self-determined health governance (Government of Canada, 2024a). NAN is a political territorial organization that represents 49 First Nation communities on and off reserve within northern Ontario, including the Moose Cree First Nation (Nishnawbe Aski Nation, 2020). It advocates for the legitimate socioeconomic and political

interests of its member communities at all government levels, working to foster local self-determination while supporting and establishing spiritual, cultural, social, and economic independence (Nishnawbe Aski Nation, 2020).

2.5 Healthcare Services and the Impacts of COVID-19 in Indigenous Communities

The federal and provincial governments of Canada have committed to providing universal access to quality healthcare under the *Canada Health Act*, however, inequities in access continue to be a significant issue affecting Indigenous communities (Browne et al., 2011; Government of Canada, 1985). Scholars have regarded access to healthcare and services as an important social determinant of First Nations, Inuit, and Métis health (McGibbon et al., 2008; NCCAH, 2012). Access to healthcare goes beyond just the capacity of individuals or groups to access and use health services (J. Lavoie et al., 2011). It also includes the opportunity for individuals and communities to identify their healthcare needs, seek appropriate care, reach healthcare facilities, obtain services, and have those needs effectively met (Levesque et al., 2013). Indigenous peoples face unique challenges in accessing health services (National Collaborating Centre for Indigenous Health, 2019). In a scoping review conducted to identify challenges in healthcare services in rural, remote, and northern communities, it was identified that they face difficulties with recruiting and retaining healthcare professionals, leaving communities with shortages of medical staff. These communities often rely on volunteers and non-resident professionals who fly in for short durations, especially in First Nations communities on reserves. This situation results in unattended patients and lengthy waiting lists, posing significant barriers to accessing services (Huot et al., 2019; Mew et al., 2017; Oosterveer & Young, 2015). In a study conducted in Canada's Northwest Territories (NWT), access to emergency care is poor and challenging, particularly in small and remote communities. These challenges are attributed to a critical shortage of qualified medical professionals and staff, resulting in many communities having only part-time nurses and community health workers (CHWs). While continuous care can only be provided by CHWs, they are not necessarily equipped with adequate clinical

skills or specialized training required for emergency medical situations (Oosterveer & Young, 2015). In many cases, Indigenous patients must be referred to larger hospitals outside their communities, forcing them to travel long distances or temporarily relocate, often at great financial, emotional, and cultural cost (Jacklin et al., 2017). On the other hand, Indigenous peoples living in urban areas and off-reserve experience challenges such as racism, stigmatisation, and discrimination. Mainstream services available off-reserves also do not offer traditional and culturally safe services (Adelson, 2005; Cameron et al., 2014; Fiske & Browne, 2006; Smylie & Anderson, 2006; Tang & Browne, 2008). Furthermore, Indigenous peoples have limited autonomy to meet their healthcare needs. Qualitative studies have demonstrated that Indigenous people are sensitive to power imbalances in their interactions with healthcare services, often recounting experiences of dismissal, racism, and marginalization (Browne et al., 2011; Cameron et al, 2014; Valeggia & Snodgrass, 2015).

Furthermore, the onset of COVID-19 not only disrupted food supply chains and heightened challenges on food access and food availability but also exacerbated long-standing issues within the already fragmented healthcare system serving these populations. With health services being interrupted and transitioned to virtual delivery, many Indigenous peoples encountered additional barriers, including limited internet access, lack of digital devices, and difficulties navigating virtual care platforms, resulting in delays in service provision and unmet needs (Fitzpatrick et al., 2023).

2.6 Health Promotion and Social Determinants of Health

The social determinants of health (SDOH), health promotion, and disease prevention are interconnected factors that play a key role in improving health and addressing health disparities (Caron et al., 2024). Health promotion is a fundamental component of public health that goes beyond healthcare (WHO, 2024). According to the Ottawa Charter, health promotion is defined as the process of empowering individuals to take greater control over their health and improve it (WHO, 1986). Achieving optimal physical, mental, and social well-being involves individuals and groups identifying their

aspirations, meeting their needs, and adapting to or managing their environment (Kumar et al., 2012). While healthcare services focus on treatment and direct care, health promotion programs aim to prevent illness and encourage healthy behaviors by addressing risk factors such as poor diet, physical inactivity, excessive smoking, etc. (Kumar et al., 2012). There are different approaches to promoting health, and the Ottawa Charter outlines five key areas for action: reorienting health services, enhancing personal skills, strengthening community action, creating supportive environments, and building healthy public policy (WHO, 1986). Strategies within these areas may include education, communication, legislative actions, financial programs, community organization and development, and local community action (Shah, 2003). On the other hand, SDOH refer to the non-medical factors that influence health behaviors and health outcomes, including the economic, social, cultural, environmental, and political conditions in which people are born, grow, work, live, and age (Braveman & Gottlieb, 2014; Jiao, 2024). Canada recognizes 12 determinants of health, which include income and social status, education and literacy, childhood experiences, employment and working conditions, social supports and coping skills, physical environments, healthy behaviours, access to health services, biology and genetic endowment, gender, culture, race/racism (Government of Canada, 2004). SDOH, such as food insecurity, are shaped by factors such as income and food affordability, geographic access to healthy foods, cultural food practices, education and food literacy, and policy environments that shape food systems (Bailey et al., 2017; Odoms-Young et al., 2023). Understanding SDOH is particularly crucial in Indigenous health contexts because it explains how historical and ongoing colonial processes have created systemic barriers that shape the health and well-being of families, communities, and nations that extend far beyond individual choices or behaviors (Raphael, 2006; Reading & Wien, 2009; Syme, 2003). Indigenous health researchers contextualize SDOH in categories as proximal, which includes health behaviors, physical and social environment, intermediate, which includes community-level factors like community infrastructure, resources, capacities and healthcare systems, and distal, which is the broad socio-political context including colonialism, racism, and self-determination (Raphael, 2006; Reading & Wien, 2009; Syme,

2003). Several authors emphasize that distal determinants have the most profound influence on Indigenous health outcomes because they represent the broader systems that construct both intermediate and proximal determinants (Krieger, 2008; Raphael, 2006; Reading & Wien, 2009).

Integrating the concept of social health determinants, health promotion, and prevention into healthcare policies may support a proactive approach by taking into consideration the root causes of poor health (AbdulRaheem, 2023; Colizzi et al., 2020). This involves collaborating with vulnerable and underserved communities and fostering transparent relationships within these communities (Braveman & Gottlieb, 2014b; Hojat, 2022). Empowering individuals to make informed health choices, ensuring communities have access to necessary resources, and enabling healthcare systems to prioritize preventive care and foster a stronger community (Egede et al., 2024).

2.7 Factors Contributing to the Sustainability of Community-based Programs

Communities deliver health programs in various settings, including schools, health units, community centers, and clinics. A key aspect of tailoring programs to meet the specific needs of a community is making use of local resources. For example, a program may not focus solely on food and nutrition but include these as part of broader initiatives promoting healthy lifestyles or disease prevention. This integration sometimes makes it difficult for researchers to identify which programs target specific services to particular audiences. Health programs typically cover nutrition, food preparation, gardening, and cultural practices; however, communities may not consistently offer these services year-round or across all locations. While health centers provide program guidelines, each community's specific needs and available resources determine which programs they prioritize and how they implement them (Collins, 2009).

The success of healthcare programming in Indigenous communities depends on multiple interconnected factors. This includes strong partnerships between federal, provincial, and territorial governments and Indigenous organizations (Stefanon et al., 2023). Communities often measure success

through tangible health improvements, including reduced hospital utilization and improved oral health conditions. Research indicates that successful health outcomes stem from strong governance structures, community-driven initiatives, community readiness to engage with programs, accessible services, and recognition of Indigenous capacity and strengths. However, sustainable healthcare funding remains a critical determinant, as adequate financial support enables the implementation and long-term continuation of comprehensive health services essential for maintaining positive health and wellness outcomes in Indigenous communities (Freeman et al., 2016).

2.8 Indigenous Health and Wellness

The conceptualization of 'health' drives how people understand and approach access to health care and health disparities. Policymakers and health care professionals vary on how they define health and the health outcomes that they seek to address through changes in policies or clinical interventions. Yet, individuals and communities may still hold different interpretations of health (Krahn et al., 2021a). According to the definition provided by WHO, which was adopted by Health Canada in 1948,

> *"Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."*

However, this definition also faced criticism as the word "complete" puts unrealistic expectations in attaining health and concerns about how one could objectively measure "completeness" in well-being (Hubet et al., 2011). In 1986, the Ottawa Charter for Health Promotion by WHO stated that,

> "*Health is a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities."*

Among First Nations, health is understood in a holistic concept of well-being as interdependent on community, cultural identity, and the state of balance among their physical, mental, emotional, and spiritual health – leading to overall well-being (Lavallee & Poole, 2010; National Aboriginal Health Organization, 2005). The Indigenous perspective on health differs significantly from the clinical

definition of health based on the Western paradigm of health commonly used in health delivery in Canada and the United States (Stewart, 2008; Gone, 2004). Moreover, the Indigenous concept of wellness refers to promoting and improving the health and well-being of individuals, families, communities, and nations (Sullivan & McHardy, 2007). Achieving wellness requires a healthy balance among the mind, body, and spirit. It is important to understand health and wellness through the Indigenous perspective of health to truly align health care policies on health services and health programming to the practices, knowledge, and culture of Indigenous communities (Allen et al., 2020; Barnabe, 2021)

CHAPTER THREE

Chapter 3: Rationale and Objectives

3.1 Rationale

The previous chapter highlighted the lasting impacts of colonization on shaping policies that influence the living conditions of Indigenous people. This includes the increased prevalence of chronic diseases and increasing rates of food insecurity, especially in northern remote Indigenous communities. Several health programs and initiatives addressing these challenges in the North have been implemented, contributing to positive outcomes within these communities; however, the following gaps were identified during this review.

First, there are many structured government-led health promotion initiatives, nutrition education programs implemented to promote health and prevent chronic diseases and community-based research on local food development addressing food insecurity; however, there remains limited documentation on the community efforts responding to immediate needs related to food insecurity through their own health programs, specifically on a remote, northern setting. Providing rich descriptions of locally-driven activities in a remote, northern Indigenous community will help demonstrate how health programs are tailored to specific community needs, how they adapt to systemic and real-time barriers to program delivery, and how they are experienced in the community.

Second, studies and evaluations of these initiatives and programs only highlight the intended outcomes of the programs (e.g., improved food-related behavior, increased food access); however, very few studies understand the broader significance of health programs within communities beyond health promotion and improving health outcomes.

Lastly, many studies have been conducted identifying local needs and challenges faced by health systems and services in the North; however, these have often been documented through interviews, evaluation, sharing circles, literature reviews, and scoping reviews (Oosterveer et al., 2015; Wali et al., 2023; Stefanon et al., 2023). Documenting the on-the-ground realities of program delivery through firsthand involvement and participation offers a deeper understanding of how systemic barriers are

experienced and navigated in a remote, northern Indigenous community, considering the impacts and changes brought by COVID-19.

To address these gaps, this community-based participatory research study collaborates with Moose Factory Health Center (MFHC) to provide a comprehensive understanding and demonstrate program realities of health program delivery in Moose Factory, such as the HBHCP and DPP, which aim to support family and community health in the MCFN.

3.2 Objectives

Specifically, this study sought to:

1) Describe Indigenous-led efforts in responding to the identified drivers of food insecurity in a northern, remote Indigenous community
2) Understand the broader role of health programs within the community
3) Identify community-informed priorities for improved programming and document the on-the-ground realities of program delivery through first-hand participation and involvement in program delivery.

CHAPTER FOUR

On-the-Ground Realities of Health Program Delivery in Addressing Community Needs: A Community-Based Participatory Research Approach in the Moose Cree First Nation

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4.1 Abstract

It has been well documented that Indigenous people in northern remote communities in Canada continue to experience a disproportionate burden of health disparities due to complex interactions of multiple determinants of health, including food insecurity, colonialism, barriers in accessing primary healthcare, and disrupted socioeconomic and political structures. Health promotion programs are essential in building preventive measures and empowering communities to take control over their health by helping them make informed health choices. This study identifies food-related challenges and describes Indigenous-led nutrition-related health programs in Moose Cree First Nation (MCFN), exploring how these programs respond to these challenges and identifying systemic barriers to effective program delivery. Grounded in community-based participatory research (CBPR) principles, our approach emphasizes the critical importance of community engagement in supporting the healing process within this cultural context. Data collection included first-hand participation in program delivery, evaluations, feedback, and semi-structured interviews from community members (n=6) and Health Center staff (n=3). Thematic analysis was used to identify themes across interview data, field notes, and community feedback. Three primary food-related challenges were identified: high food costs, limited access and availability, and poor food quality. Health programs respond to these challenges through culturally grounded and family-oriented nutrition education activities. Community members valued the programs' knowledge-sharing approaches, tangible support, and social connections. However, systemic barriers significantly constrain program delivery, including inadequate funding, limited resources, staffing shortages, and the impact of COVID-19. While these barriers hinder the programs' ability to reach their full potential, the community's commitment to improving health outcomes highlights the need for sustainable funding and stronger policy support that reflects the true cost of service delivery in remote Indigenous communities. The findings emphasize the need for policy changes that move beyond top-down approaches toward community-informed policies and Indigenous-led health programming.

Keywords: Community-based participatory research, health promotion, Indigenous health

4.2 Introduction

Indigenous people in northern remote communities in Canada continue to experience a disproportionate burden of health disparities due to complex interactions of multiple determinants of health, including food insecurity, colonialism, barriers in accessing primary healthcare, and disrupted socioeconomic and political structures (Halseth, 2019). The onset of the COVID-19 pandemic has further exacerbated these systemic health challenges, severely restricting access to safe and nutritious food for these communities (Alabi & Robin, 2022; Levkoe et al., 2021). Prior to colonialism, Indigenous people relied on traditional lands for nourishment and cultural sustenance; however, colonial disruption led to the loss of traditional food sources and local food systems (Krieger, 2001; Berkes & Farkas, 1978; Krech III, 1984; Liebow & Trudeau, 1962; Skinner et al., 2013; Taylor, 1972; Robidoux et al., 2017). The transition to store-bought food presented additional challenges, including high costs, poor quality, and limited availability of healthful options, contributing to food insecurity in the north (Kenny et al., 2020; Leblanc-Laurendeau, 2020). The increased prevalence of food insecurity and gradual reliance on processed market-based food has resulted in inadequate intake of several nutrients, resulting in an increase in diet-related chronic health conditions such as obesity, type 2 diabetes, and chronic kidney disease (Huet et al., 2012; Willows et al., 2009).

Recognizing challenges of food insecurity, northern Indigenous communities across Canada have developed community-led, local food initiatives that address the drivers of food security and support food sovereignty, such as community gardens and greenhouses (Ferreira et al., 2022; Herrmann et al., 2020; Robidoux & Mason, 2017; Skinner et al., 2013, 2014), research collaborations with schools and Indigenous organizations food programs (Kenny et al., 2018), and research-related health intervention programs like Healthy Foods North (HFN). HFN provided training to community members to implement community-based activities such as cooking classes and nutrition education, resulting in reduced

consumption of unhealthy foods and improved food-related behaviors (Kolahdooz et al., 2014; Pakseresht et al., 2015). Furthermore, Aboriginal Diabetes Initiative (ADI) also delivers prevention and health promotion programs to reduce type 2 diabetes and support food security initiatives in more than 600 First Nation and Inuit communities. These programs are often delivered through community health centers and health services, recognizing food security as a fundamental health determinant that requires integration into comprehensive healthcare alongside clinical care (Downer et al., 2020; Tohit et al., 2025). However, many Indigenous communities navigate their way in the fragmented health governance structures where responsibility for Indigenous healthcare and the delivery of health services is divided among federal, provincial, and territorial levels, resulting in jurisdictional gaps and a lack of coordination (Lavoie, 2018; Lavoie et al., 2010; Mashford-Pringle, 2013; Stefanon et al., 2023). For instance, the ADI is federally funded under the Health Transfer Policy (HTP) that aims to facilitate the transfer of control over the administration of programs to local communities through flexible funding agreements (Kyoon-Achan et al., 2021; A. Mashford-Pringle et al., 2021). However, programs funded by this policy operate separately from other federally funded services in the same community without data sharing or coordination (Kyoon-Achan et al., 2021). With the onset of COVID-19, these issues were intensified as availability and access to a variety of health services were greatly reduced and replaced with virtual care (A. Mashford-Pringle et al., 2021)

While many studies have documented community-led programs and health promotion initiatives in addressing causes of food insecurity and prevention of chronic diseases, there remains limited information on how communities independently respond to immediate needs related to food insecurity through their own health programs. Furthermore, previous studies identifying local needs and systemic challenges faced by remote health services in the north have largely relied on interviews, evaluation, sharing circles, literature reviews, and scoping reviews (Oosterveer & Young, 2015; Skinner et al., 2013b; Stefanon et al., 2023; Wali et al., 2023). This study builds on these gaps and methods, taking an additional approach through firsthand involvement and participation. It provides rich description of

locally-driven activities and a lived understanding of how health programs experience and navigate systemic barriers in a remote, northern Indigenous community. Initially, the objectives of this paper centered on supporting and delivering program activities in Moose Factory; however, our objectives shifted after learning that, following the COVID-19 pandemic, these programs are in the process of restarting and rebuilding efforts, affected by multiple factors, including facility relocations and personnel changes. The objectives of this paper are to describe Indigenous-led efforts in responding to the identified drivers of food insecurity in the community through firsthand participation in health programs in Moose Factory in the context of post-COVID. Additionally, it also understands the broader role of programs within the community context, documents on-the-ground realities of program delivery, and highlights community-informed priorities for improved programming.

Community context

This project took place in the Moose Cree First Nation (MCFN) of Moose Factory, an island located in a remote northern part of Ontario and situated at the base of James Bay, at coordinates 51.264 latitudes and −80.597 longitude (Louttit, 2006) (see Figure 1). The community has 5,160 registered band members, with 1,823 residing on the reserve (Government of Canada, 2024). It is only accessible by boat taxi during the warmer months and by winter road during the colder months. Additionally, helicopter services provide year-round access, which is crucial during the transitional freeze-up and breakup periods. Food is available and accessible for purchase at the Northern Store, private grocery stores, and the Farmers' Market that visits the community every two weeks (Ferreira et al., 2022). However, the primary food source for most Indigenous peoples in the JHB region is the Northern Store, the successor of the Hudson's Bay Company, a monopoly that has been harshly criticized for its predatory practices across northern Canada (Burnett et al., 2023).

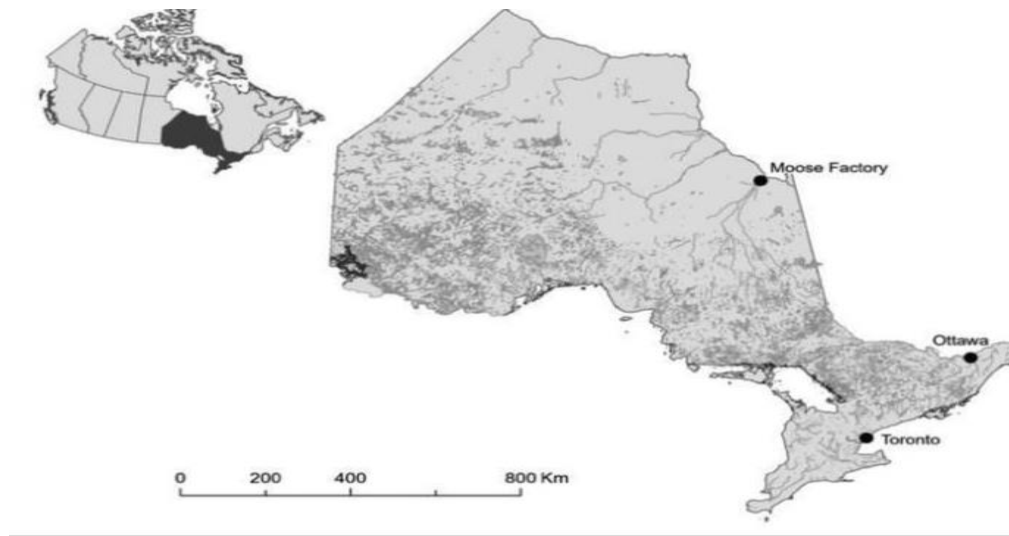

Figure 1: Map identifying the location of the Moose Cree First Nation, Moose Factory, Ontario, Canada. Map created by the University of Ottawa on April 15, 2020.

Health Services and Nutrition-related health programs in Moose Factory

In most northern remote communities, health services are primarily delivered through nursing clinics or health units, which serve as the first point of contact for individuals, families, and the community within the healthcare system (Yangzom et al., 2023). Moose Cree First Nation (MCFN), as a larger community, has access to a provincial hospital for primary healthcare. The provincial hospital originated as the Moose Factory Indian and Inuit Hospital in 1950, initially constructed as a tuberculosis facility. It was later renamed the Moose Factory General Hospital (MFGH) in 1966 and became the regional healthcare facility for western James Bay communities. In 1996, governance transitioned from federal control under Health Canada to local management under the Weeneebayko Health Ahtuskaywin, while maintaining federal funding supplemented by provincial support for specific programs. Moreover, MCFN has its own Health Center focused on delivering health promotion programs that empower individuals and families to take control of their health through education, prevention, and addressing broader social determinants (Government of Canada, 1986; Kickbusch, 2003).

The Moose Factory Health Center (MFHC) offers two nutrition-related health programs: the Healthy Babies, Healthy Children Program (HBHCP) and the Diabetes Prevention Program (DPP). The HBHCP supports families with children aged 0-6 by promoting healthy child development. It focuses on the five areas of child development - cognitive, language, physical, social, and emotional development. It provides neonatal care and prenatal support, while also offering programming for parental support and parenting skills development. This flexibility allows for adjustments to priorities and approaches to accommodate emerging community concerns. The funding structure also differs; the program receives funding through the Nishnawbe Aski Nation (NAN), a provincial territorial organization (PTO) representing approximately 49,000 people of 49 First Nations on and off reserves, rather than Ontario provincial funding.

Moreover, the DPP has been operating in the community for more than 22 years, providing services accessible to the entire community, from youth to elders. The program primarily focuses on prevention and awareness, not only of diabetes but also encompasses a broad spectrum of other health concerns, including heart disease, epilepsy, sexually transmitted infections, eye and foot care, and renal diseases. The program is partially funded by Indigenous Services Canada (ISC), which allocates resources sufficient only for the program coordinator's salary. Consequently, the coordinator secures additional external grants to maintain program operations and provide the necessary resources for effective delivery. Despite the extensive range of services and programming offered, both programs are managed by a single coordinator responsible for all aspects, from program design and planning to implementation and delivery. It is important to note that these Indigenous-led programs differ from mainstream programs (like the Ontario HBHC program) as greater flexibility is allowed within the community-based program, enabling adaptations when community needs are identified (Table 1).

Table 2. Health promotion programs in Ontario vs in Moose Factory

	Mainstream Program		Indigenous led-Programs	
	Ontario HBHC Program	Ontario Diabetes Education Program	HBHC Program	Diabetes Prevention Program
Funding	Ministry of Children, Community, and Social Services Delivered by Public Health Ontario	Ministry of Health Delivered by Public Health Ontario	Nishnawbe Aski Nation	Indigenous Services Canada + External grants
Service objectives	Health screening and risk assessments Developmental assessments Healthy mother-infant attachment Link to community resources and support Home visiting	Diabetes education and support for adults and families Diabetes counseling for patients and family members Life plans to minimize symptoms	Healthy mother-infant attachment Healthy infant growth and development Resources and supports Family Advocacy Indigenous teachings, ceremonies and resources **All activities are tailored to community needs*	Provides education and services for the prevention, management, and treatment of diabetes Provides case management and screening services Advises on developing and implementing an approach to the care and management of diabetes Provides referrals to other health care professionals **All activities are tailored to community needs*
Eligibility	Parents and their children under six years of age	All adults 18 years or older	Families with children younger than 6 years of age Indigenous children at-risk	Members of Moose Cree First Nation living with diabetes or at-risk Open to all community members
Application Process	a. Screening by a health provider after the birth of an infant b. Self-referral during prenatal or postnatal period	a. Referral from health provider b. Self-referral	a. Referral from health provider b. Self-referral	a. Referral from health provider b. Self-referral

4.3 Methodology

Community-based participatory research (CBPR)

This project revolves around the principles of community-based participatory research (CBPR), which is an approach for decolonizing research and prioritize understanding and active collaboration between researchers and the community. It strives to develop innovative solutions to community challenges, with research being conducted for and with the community (Chataway, 1997; Greenwood & de Leeuw, 2012; Rains & Ray, 1995; Whyte et al., 1989). It emphasizes the importance of equitable partnerships and promotes the collaborative sharing of power, knowledge, and resources between

academic researchers and community members at every stage of the research process and implementation (Hall, 1992; Minkler et al., 2008). This approach generates evaluative knowledge, similar to conventional qualitative and quantitative methods, while integrating research with action. This yields knowledge that can inform healthcare practices, services, and organizations (Waterman et al., 2001). CBPR engages academic researchers and non-academic partners to effect sustainable change in an iterative framework of planning, action, implementation, and education thereby leading to reflective practice or a *"kind of action research that builds on and feeds back to modify what we already know-in-practice"* (Lewin, 1946; Brydon-Miller et al., 2003). The principles of CPBR will be applied throughout all study procedures, with four of them being relevant to the study. *"CBPR builds on strengths and resources within the community;" "CBPR facilitates collaborative, equitable partnership in all phases of the research;" CPPR promotes co-learning and capacity building among all partners;"* and *"CBPR integrates and achieves a balance between research and action for the mutual benefit of all partners"* (Israel et al., 2003). This is to better understand the significance of local context and empower the voice of the local First Nations community (Wallerstein & Duran, 2010).

Given that this is a CBPR project, it is important to highlight the steps that were undertaken to ensure community participation in all stages of the research, including project objectives, design, data collection, data analysis, and dissemination of results. The following outlines our partnership with the community and how CPBR is applied in the project.

1. <u>Building partnership and relationship:</u> This project builds on the ongoing partnership our research group has with the MCFN, focusing on supporting local food development, food sustainability, and strengthening long-standing community initiatives since 2018 (Ferreira et al., 2022; Loukes et al., 2021; Robidoux et al., 2023). The project initiated the partnership with MCFN after a Band Council Resolution was signed by community leadership supporting the project. The specific research presented in this article is also part of another initiative

called Rivers of Plenty (RoP), which underwent a formal approval process following a joint proposal with all Health Directors in northern communities along the James and Hudson Bay Coasts.

2. Co-defining and development of research questions: Initial discussions took place during a sharing circle held in Moose Factory in May 2022, where community members identified nutrition and diet as key priorities to community health and well-being. These priorities were further refined in collaboration with program coordinators during fieldwork, as they were in the process of rebuilding their programs and re-engaging participants following the lasting impacts of COVID-19. Given that food insecurity remains a fundamental concern in the community, our early hands-on involvement in program delivery—from planning to implementation—provided valuable insight into how the health programs operate and respond to community needs in diverse ways. Furthermore, program coordinators and community health coordinator asked to strengthen existing nutrition-related programs that they currently have. These collaborative and experiential processes collectively shaped the direction of the study and guided the finalization of the research objectives.
3. Data collection and analysis: All project activities were co-planned and implemented in close collaboration with the program coordinators. These activities were rooted in existing program structures and priorities, ensuring that the research process aligned with ongoing community initiatives rather than introducing external interventions. The questions used to gather feedback from activity participants and community members were informed by the coordinators. During the data analysis, findings and preliminary interpretations were shared with the coordinators to validate and refine emerging themes. Through this iterative process of exchanging feedback, suggestions, and reflections, the analysis was strengthened by community insights and ensured to accurately represent local perspectives and experiences. This collaborative approach upheld the CBPR principle of shared ownership throughout the

research process. The program coordinators were invited to be listed as co-authors of the article; however, they opted not to be included as they did not partake in the writing of the manuscript. Instead, they preferred to be mentioned for their significant contributions in the acknowledgements.

Indigenous methodologies

As non-Indigenous researchers, we acknowledge our social location and the potential biases we may carry. We recognize our relational obligation and responsibility to be critical of our privilege and the systemic inequalities we benefit from and to actively work to disrupt Western hierarchies actively. This study is guided by Indigenous research methodologies that are grounded in Indigenous worldviews, perspectives, and ways of knowing (Geniusz, 2009; Kovach, 2009; Lambert, 2014). Indigenous methodologies (IM) are informed by Indigenous knowledge-gathering methods that include ceremonies, stories, talking circles, traditional teachings, reflexivity, oral history, and place-based ways of doing and being (Kovach, 2005, 2009). Kovach points out that these methods may differ from Western-based ones, such as focus groups, interviews, and surveys, and argues that *"Indigenous researchers count inward knowing ways as part of knowledge construction and referencing methods, subsequently legitimizing them in academic research"* (Kovach, 2009). IM calls for research that is done with relevance, reciprocity, respect, and responsibility (Restoule, 2008). While a CBPR approach involves researchers and participants in all aspects of the research process, IM goes further (Absolon, 2011; Gaudet, 2017; Kovach, 2009; Smith, 1999). By advocating for community-centered priorities and valuing Indigenous knowledge systems, this study seeks to foster research practices that are equitable and just (Willows, 2013, 2019).

A Strength-Based Approach

This study adopts a strengths-based approach rather than a deficit-oriented lens. Instead of focusing on gaps or shortcomings, this approach highlights the broader value of health programs in

addressing immediate needs in the community and examines how existing resources can be improved and leveraged to improve program delivery (Foley & Schubert, 2013). The goal is to build on the knowledge and assets already embedded in the MFHC programs that best address the community's unique needs and challenges, taking into consideration geographical isolation, population size, and current approach to health program delivery. Through this lens, the project highlights the community's existing strengths, such as the commitment of program coordinators and the foundational role of health programs that serve as anchors of community health. While the study also discusses systemic and structural challenges faced by these programs, such challenges are examined not to frame deficits, but to underscore the need for stronger and sustained institutional support. The intention is to demonstrate that minimizing these barriers would further enable programs to expand engagement, enhance service provision, and continue fostering community health and resilience.

Project Design and Development: Fieldwork Phase I

In this project, researchers worked in partnership with the MFHC to gain a comprehensive understanding of the on-the-ground realities of program delivery for the HBHCP and DPP, including operational challenges faced by these initiatives. Community engagement occurred at two distinct levels in a flexible manner based on the objectives of the study and the interests of program coordinators and community members. First, the program coordinators were fully integrated in all phases of the research - needs assessment, definition of research questions, implementation, data collection, and analysis - and played multiple roles as practitioners, researchers, and knowledge users. They are part of both the process and the outcomes. Second, academic researchers and program coordinators worked with community members by delivering the activities and seeking feedback on their experiences with the programs. This offers valuable insights and experience into how well the current activities were working while also allowing for deeper engagement with the community to identify additional needs and support. This study

consisted of multiple stages of fieldwork conducted in Moose Factory at different times, as outlined in Figure 2.

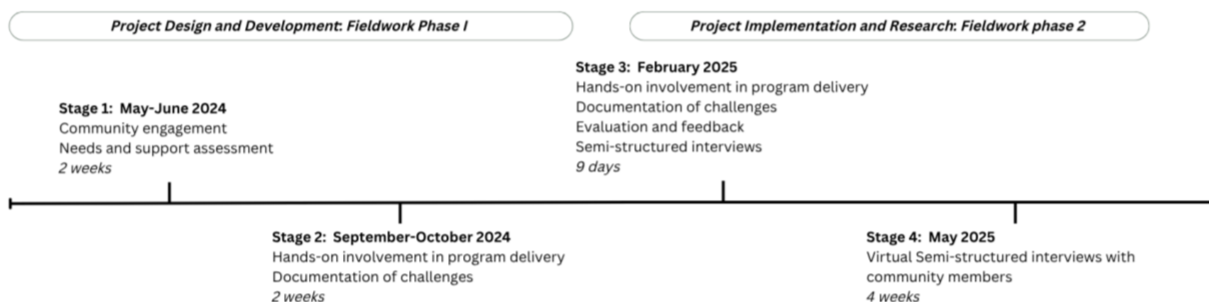

Figure 2. Timeline of fieldwork throughout the research

Stage 1

During the first in-person visit and interaction with the community for two weeks in the spring of 2024, stage one involved engaging with local residents while supporting the ongoing local food development initiatives and helping them set up their community gardens for their families. This facilitated informal conversations with community members, providing valuable insights into their food access challenges and how gardens help conserve financial resources otherwise spent at the Northern Store. We also focused on understanding MFHC operations, particularly program implementation and management. Discussions with program coordinators helped identify areas where we could best support these programs, assess their needs, and determine the future direction of the study. During these discussions, it was brought up that the COVID-19 pandemic halted many key activities of the programs, such as cooking workshops, food demonstrations, and nutrition education sessions, all of which are essential for promoting nutrition, health, and overall wellness. Additionally, they expressed the need for support in translating nutrition education into practical, culturally relevant materials. While there are existing resources such as “First Nations Recipes by Gregory Lepine”, a recipe book featuring traditional Indigenous ingredients like salmon, venison, bison, fiddleheads, wild rice, and berries, the program

coordinator of DPP from Moose Factory explained that many of these ingredients are unavailable at the Northern Store, the primary food source in the community (Personal correspondence, June 26, 2024). These preliminary discussions on the need for additional nutrition educational materials led to the draft production of learning resources. These included flyers featuring quick, easy, and healthful recipes, as well as posters and placemats highlighting traditional foods such as moose, goose, and fish, with nutritional information about these foods. All of these materials were collaboratively developed to ensure they were community-centered, with consistent exchange of ideas and suggestions between the program coordinators and our team.

Stage 2

The second stage of the fieldwork was conducted from September to October 2024 over two weeks. During this phase, we engaged in further discussions and hands-on involvement with the program activities to gain a clearer understanding of how they work in the community setting. Throughout this period, we engaged directly in all aspects of program delivery—planning, preparation, and implementation of activities, alongside the program coordinators. This phase also allowed us to better understand the program's objectives and its flexibility in addressing the needs of community members, while identifying both program challenges and strengths. We gathered feedback from community members through informal conversations after each activity, which created a relaxed atmosphere and encouraged open discussions about their experiences and insights. The collaborative discussions with the program coordinators of the MFHC allowed us to co-define our research objectives, which are to describe how nutrition-related health programs - HBHCP, and the DPP respond to unique community needs and challenges surrounding food and nutrition, and to document the on-the-ground realities of program delivery, including operational challenges faced by these initiatives.

Project Implementation and Research: Fieldwork Phase 2

Stage 3

The third stage of fieldwork was conducted over a nine-day period in February 2025. This phase added another layer of understanding of the programs by continuing our involvement in program operations, gathering feedback from activity participants, and conducting in-depth interviews with the program coordinators and the community health coordinator. Working alongside coordinators revealed nuanced challenges in program implementation that might not be evident through observation alone. Following these activities, we facilitated informal conversations with community participants, which provided rich contextual insights that went beyond what formal evaluation tools could capture. These discussions described how community members perceive the value of the programs, the aspects that resonate most strongly with their lived experiences, and the barriers that affect their participation. A significant component of this stage involved conducting semi-structured interviews with both program coordinators and the community health coordinator. These interviews specifically explored the operational challenges faced within the programs, including funding constraints, resource limitations, and program delivery.

Stage 4

The fourth and final stage was conducted in May 2025. This phase integrated all our understanding of the programs and community member perspectives through comprehensive data collection. We conducted semi-structured interviews with community members to gather their perspectives and experiences with health programs offered in the community as well as identify what additional support they need to better improve program objectives and delivery. The participants had the option to participate online via phone calls and Zoom or in person during fieldwork in June. Five individuals opted for online interviews, while one participant chose to be interviewed in person. These interviews, combined with our direct participation in program delivery, observations, and community feedback, completed our methodological approach by triangulating perspectives from community members, Health Center staff, the Community Health Coordinator, and activity participants.

4.4 Methods

Recruitment of Participants

Activity participant recruitment followed the research protocols previously established by our research team and the Moose Cree First Nation in 2018 (Ferreira et al., 2022). The program coordinators of the HBHC and DPP assisted in recruiting participants who are community members and are currently involved in or utilizing these programs. Recruitment was done informally through the MFHC Facebook page, where infographic posters were posted to inform the community about the upcoming activities at the Health Center. Interested individuals were invited to freely join and participate in these activities. Furthermore, the recruitment of the participants for the interviews was primarily through a call for participants publication on the MFHC Facebook page, and referrals from other participants. The implementation of the study was conducted in accordance with the University of Ottawa Research Ethics Board and received full approval from the REB (H-08-24-10625).

Data Collection

Learning by doing (also referred to as participant observation [see Ferreira et al., 2022]), semi-structured interviews, and evaluation forms were useful data collection methods throughout the study to gain a comprehensive understanding of the food-related challenges faced by community members and the current status of the health promotion programs. The details of these data collection tools are outlined below.

Learning by Doing

Learning by doing is a primary and central method for knowledge-gathering in this study. This method is focused on gaining knowledge from one another through observation, listening, and sharing knowledge (Absolon King, 2011; Flaminio, 2019). It involved us working in collaboration with the program coordinators on planning, implementation, and program delivery. Our hands-on and firsthand involvement allowed us to truly understand the primary challenges and difficulties that the program

coordinators face when conducting these activities. It also enabled us to immerse and engage directly with community members, fostering conversations on food and nutrition challenges and community needs. After learning by doing, we documented extensive and descriptive fieldnotes of what had occurred and discussed in the informal conversations, which supported a deeper interpretation of how community members understood and navigated specific experiences (Iacono et al., 2009). These observations and reflections also informed our interview questions and facilitated conversations with community members, which enhanced our understanding of local knowledge and practices.

Semi-structured Interviews

The use of semi-structured interviews was to accompany participation and observation methods. Interview participants included two program coordinators and the community health coordinator (n=3) (as service providers) to better understand and document their lived experiences on program delivery in the community. The interview guide included open-ended questions related to 1) the structural challenges affecting the programs and how these challenges are typically addressed, and 2) the strengths that contribute to their effectiveness in delivering nutrition knowledge. Separate interviews were conducted with community members (as service users) to 1) explore food-related challenges in the community, 2) their perspectives and experiences with existing support and programs offered by the Health Center, and 3) their identified needs and priorities for improving program delivery. The interview guide was developed through collaboration and consultation with community members to ensure that the questions were culturally relevant and respectful. Participants were recruited using a combination of convenience and snowball sampling. Community members were offered a $50 incentive. A total of six community members were interviewed, comprising both males (n=1) and females (n=5), aged 24-54. All interviews were conducted in conversational mode, acknowledging that a two-way conversation is a way of exchanging knowledge, and as many traditional teachings suggest, that meaningful learning occurs through shared conversations rather than a one-sided transmission of information from a single “expert, " which is contrary to Western research methods of conducting qualitative interviews (McGregor et al.,

2018). The interviews were audio-recorded whenever possible; however, in cases where participants were not comfortable, we took extensive notes with the assistance of a co-researcher.

Participant Feedback

An evaluation form was given to participants following each activity (e.g., baby-food preparation and gardening workshop) to collect immediate feedback. The evaluation forms were co-developed with the program coordinators, not only as part of the project, but also used and applied to the program activities. However, in some circumstances which community members expressed discomfort with evaluation forms and being mindful of not wanting to appear as we are "evaluating" them, we opted for informal verbal discussions about their experiences with the activity, emphasizing its value for them and their families, as well as exploring how the programs could further support their needs. This approach fostered a relaxed atmosphere that encouraged participants to share their insights. After each conversation, we promptly documented our reflections and key takeaways in fieldnotes. All project partners and community members were given the option to be identified or to remain anonymous in the paper. Those who wished to be identified provided written permission to have their name or photographic image used.

Data Analysis

Learning by doing, semi-structured interviews, and participant feedback from the activity were useful methods throughout the fieldwork for collecting data. The field notes, meeting minutes, transcripts, and feedback forms were read and reviewed while abstracting meaningful data. A more nuanced thematic analysis (TA) was conducted, whereby patterns of meaning were identified across the interview dataset. A flexible version of TA allows for identifying patterns and interpreting them both between interviews and between the interviews and field notes (Braun et al., 2016). Notes from each interview were read extensively and coded into categories. Codes that pertain to the same general concept were grouped together to create organizing themes that enhance the meaning and significance of the narratives. Further

rounds of coding was conducted to reexamine and reanalyze the previously created codes and categories to further develop into sub-themes.

4.5 Results

Three Health Center staff, including two of the program coordinators and the community health coordinator, and six community members were interviewed throughout the project. The observations and informal conversations with participants during our firsthand participation in program delivery and implementation of activities were also included in the analysis, providing contextual insights into program operations and community dynamics. The interview participants were predominantly members of the Moose Cree First Nation, with the exception of three who lived in Moose Factory but were affiliated with different First Nations. The sample represented a diverse range of socioeconomic backgrounds, from economically advantaged to economically disadvantaged groups. Participants varied in their sex, age, and marital status as shown in Table 2.

Table 3. Interview participant characteristics

Characteristics	Community member	Health Center staff
Sample size	6	3
Sex		
Female	5	3
Male	1	0
Age		
18-50	4	3
50 +	2	0
Self-identification		
Indigenous	6	3
Non-Indigenous	0	0
Marital status		
Married	4	3
Single (e.g divorced, widowed)	2	0

The integrated analysis of the interview data, combined with observational data and informal conversations, revealed key findings across three domains, which are presented in the sections that follow: (1) description of nutrition-related health program activity implementation and delivery; (2) why these health programs matter; and (3) what support these programs need. The first domain describes how nutrition-related health programs respond to the immediate needs of the community through various activities. The second domain presents insights from interviews and participant feedback, highlighting the value of health programs within the community context. Finally, the third domain outlines the systemic challenges to program delivery, underscoring community-identified needs and priorities for strengthening health programming.

Nutrition-related health programs

MFHC operates two primary health programs that aim to address health, nutrition, and wellness needs across different age groups in the community. While the DPP and HBHCP offer numerous activities (as outlined in Table 1), this paper specifically focuses on food and nutrition-related activities where we had firsthand participation in program implementation and delivery. This section provides an overview of how their nutrition-focused activities are delivered in the community, and the following section explores their broader significance in supporting community health and wellbeing in Moose Factory.

Table 4. Overview of Nutrition-related Health Program Activities

Diabetes Prevention Program	Healthy Babies Healthy Children Program
*Lunch and Learns	*Baby Food Preparation
*Food Demonstrations	Nutrition Bingo

*Gardening Workshop

Meal Bags

Nutrition Bingo

*Community Kitchen: Cooking Workshop

Harvester/Community Freezer

Health Awareness

Weight Loss Program

Preschool Clinic

Summer Soccer Program

Hobby Hub

Children/Family Home Kits

Making Flower Arrangements for Grieving Community Members

Winter Activities

Yahtzee Walks

Gym Nights

Prenatal Classes

Moss Bag and Receiving Blanket Making

Babysitting Course

Home Alone Safety for Kids

Potty Training

Easter Activities (Snow Sculpture and Decorating)

Walking Club

Mosquito Hat Making

Halloween Home Decorating

Family Literacy Week

**Activities in which we had first-hand participation throughout the fieldwork*

Diabetes Prevention Program

I. *Lunch and Learns*

Lunch and Learn sessions represent a significant community engagement strategy within the health programs at MFHC, typically conducted monthly as an interactive platform for community members to gather over a meal while exchanging knowledge on health, nutrition, and wellness. Due to pandemic constraints, this activity had not been implemented since COVID until the reintroduction of the activity during our fieldwork. This session aimed to address the community's strong interest in strengthening knowledge on reading food labels and making informed decisions on grocery shopping, which are crucial

given the challenges of food accessibility and affordability in Moose Factory. The planning process focused on selecting a recipe that was nutritious, cost-effective, and feasible for a family or group setting. During fieldwork in September in 2024, we shared in the organizing and delivery of one of the Lunch and Learns. Working with the Diabetes Prevention Coordinator, we prepared a chicken rice casserole as it met the above criteria and allowed for flexibility in sourcing ingredients. Prior to the session, we conducted a comprehensive scan at the Northern Store to assess ingredient availability and identified price disparities among similar items that could serve as substitutes for one another. These observations were shared with participants to inform them on the practical comparison of selecting ingredients based on price and nutritional value. Participants learned to identify cost-effective substitutions, such as selecting 4 pieces of sausages ($8.00) over 1 kg of ground pork ($8.50) for comparable recipes. Additionally, they learned to weigh convenience alongside cost considerations. For instance, choosing a small pre-shredded cabbage-and-carrot pack over a whole cabbage when both items were priced similarly, since the pre-shredded option reduced preparation time, provided additional vegetable variety, and maintained equivalent nutritional value. The activity was held at the MFHC office and was attended by 16 participants, primarily those with families, which the program coordinator noted was higher than typical attendance compared to other similar activities. We began with a discussion about the chicken rice casserole recipe, sharing insights gained during the ingredient selection. A key component focused on interpreting nutrition labels, with a demonstration of understanding serving sizes, nutritional content, and ingredient lists. During the session, most participants acknowledged rarely reading food labels, with shopping decisions typically influenced by price and availability of staples. Participants expressed surprise at cost discrepancies between similar products and appreciated practical tips for affordable meal preparation. Discussions expanded to broader community food challenges, including price inflation and poor produce quality at the Northern Store, providing valuable insights into barriers to healthy eating.

II. Food Demonstration

Over the course of the fieldwork, we conducted two demonstrations at the Health Center entrance using a sample station booth where community members could freely participate. Objectives included showcasing affordable, diabetes-friendly recipes; highlighting practical home preparation techniques; explaining nutritional benefits; and demonstrating versatile uses of locally available vegetables. This activity also demonstrates creative recipes utilizing ingredients that are readily available from the grocery store and grown on the island. Our first demonstration engaged 25 participants and featured different preparations of canned legumes (chickpeas, red kidney beans, and black beans), transformed into Thai Coconut Chickpea, Tex-Mex Bean Salad, and Yellow Thai Chickpea Curry. Meanwhile, the second demonstration engaged 32 participants and showcased vegetable recipes that are readily available from the grocery store and grown on the island (butternut squash, spinach, mushroom, and rutabaga). These vegetables were cooked into Roasted Butternut Squash Parmesan, Cheesy Spinach & Mushroom Casserole, and Mashed Rutabaga with Sour Cream and Dill. Our firsthand participation in implementing the activity demonstrated that enhanced educational environments led to increased community engagement. For example, during the second food demonstration, visual displays of the community garden, nutrition education posters highlighting traditional foods with nutritional content, and take-home materials (placemats, refrigerator magnets, and coasters) reinforcing nutritional messaging generated notably higher participation compared to the first demonstration, where such materials were not utilized. Moreover, participants showed particular interest in maximizing the use of locally available vegetables, with several requesting recipe cards. Community responses revealed mixed perspectives toward healthy eating, with some expressing genuine interest in nutritionally balanced recipes and requesting materials to try at home, while others shared challenges, including time and energy constraints for food preparation, difficulty breaking established eating habits, and desire to reduce fast food consumption.

III. Community Kitchen Cooking Workshop

The Community Kitchen Cooking Workshop was designed as a hands-on educational experience designed to demonstrate preparation of accessible, affordable, and nutritious meals for families.

Recognizing the importance of accessibility, the recipes were carefully selected to use budget-friendly ingredients and simple cooking techniques, ensuring they could be replicated at home by participants. The workshop was structured to accommodate four families with the goal of fostering family engagement in meal preparation to strengthen family dynamics around food. Due to the program lacking dedicated facilities, a kitchen space was rented specifically for this activity to provide an interactive environment where families could learn and practice cooking skills together. However, due to an unexpected water shortage in the community, the cooking workshop had to be canceled. In response, the program coordinator adapted the initiative to still achieve its objectives. The team prepared the planned meals ourselves, following the same recipes originally selected for participant families. The Diabetes Prevention Coordinator used Facebook to disseminate information to the community that prepared meals and printed recipe cards were available for pickup. This adaptation maintained the nutritional education component in modified form while responding to immediate community circumstances. Community members were able to receive the cooked meals and receive preparation instructions. This situation highlighted both the vulnerability of programming to infrastructure challenges in remote communities and the importance of flexibility in program implementation. The program coordinator's adaptation demonstrated how community health initiatives can maintain their core objectives even when faced with unexpected barriers, ensuring that resources allocated to community nutrition are utilized effectively regardless of circumstances.

IV. Gardening Workshop

Our group has been supporting local food development and sustainability initiatives, including community gardening, since 2019 (Ferreira et al., 2022; Loukes et al., 2021; Robidoux et al., 2023). These initiatives have emerged as a community-centered response to the food security challenges previously identified. The objectives of the workshop were to develop self-sufficiency skills in food production, to teach sustainable growing techniques adapted to the local environment, to introduce composting practices, and to build capacity for constructing garden boxes. Participants represented

diverse age demographics, predominantly including individuals with little to moderate gardening experience. The first workshop was attended by 16 participants, and due to community interest exceeding our initial capacity, we conducted an additional workshop session attended by 4 participants. The first session was led by a local community member who has a horticulture background and experience in growing food on the island, thereby leveraging contextually relevant expertise. The workshop incorporated multiple learning modalities, including tactile seedling planting demonstrations, distribution of comprehensive garden starter kits, and facilitated discussions about garden establishment and maintenance within the specific environmental constraints in the community. A beginner-friendly gardening booklet was developed featuring step-by-step visual and textual instructions for garden establishment, seed planting, and maintenance, which were distributed to the participants, who reported that these materials were particularly helpful because they were straightforward and less intimidating for beginners. Participants perceived gardening initiatives as crucial for improving fresh produce access while mitigating escalating food prices. Multiple dimensions of value were identified beyond food access, including connections to food sovereignty, intergenerational knowledge transfer, and enhanced self-efficacy. Furthermore, they described the importance of obtaining food from the land, whether through gardening and hunting, as these honor traditional practices.

"Having some control of where our family food comes from, from getting my children interested in the process of growing food and making healthier choices, and cost of food has increased so much" - Activity Participant 1

"To teach our grandkids that food comes from the land." -Activity Participant 2

The sustainability aspect of these gardens was particularly salient, with several participants noting that harvests provided food security extending through winter months. Some cite their interest in participating in the workshop as *"Work towards food security"* and *"I want to be self-sufficient."* Community members value having control over their food sources and knowledge of how their food is grown. However, it is important to note that according to studies done by Skinner et al. (2014) and Thompson, Mason, and Robidoux (2018) in other northern Indigenous community garden contexts, the

garden yields are more steps towards food sovereignty rather than a comprehensive solution to household food insecurity. Ultimately, these workshops strengthened community self-efficacy and resilience, contributing to broader efforts toward food sovereignty and sustainability.

<u>*Healthy Babies, Healthy Children Program*</u>

V. Baby food-making preparation (complementary food)

The HBHCP in Moose Factory is the only program in the community that offers prenatal classes to mothers and parents. This activity aims to address concerns about the affordability and quality of store-bought baby food while promoting healthier alternatives. The primary objective of the baby food-making activity is to demonstrate and teach parents how to prepare their baby's first complementary food, starting at six months of age. Additionally, the activity emphasizes the importance of mealtimes as an opportunity for bonding between parents and their children. During the activity, the program coordinator explained and demonstrated the use of a NutriBullet©, a compact and efficient blender designed for preparing small portions of food. Store-bought complementary food samples were also provided for comparison, allowing participants to distinguish the differences in taste, texture, and nutritional value between homemade and commercially produced baby food. The activity was attended by two couples, both first-time and early-stage parents, who expressed keen interest in learning how to prepare homemade complementary foods for their future babies. Participants, especially first-time mothers, appreciated the program's support in building their confidence and understanding of what goes into their babies' food, while also noting that it was the only program in the community offering prenatal classes, making it significantly beneficial for them.

"The support from the Health Center is comforting for new moms. The classes are super helpful. Knowing my baby will be eating healthy gives me ease" -Activity Participant 1

"This is the only program that has prenatal classes, and it is really helpful, especially for first-time moms," – Activity Participant 2

Why these health programs matter?

Insights from our conversations and interviews with community members, program coordinators, and the community health coordinator demonstrated a strong understanding of what constitutes a healthful eating, describing it as a balanced and varied intake of all food groups like vegetables, whole grains, wild meats, and other foods sourced from the land. However, community responses also reflected mixed perspectives in applying this knowledge, as they are constrained by proximal and intermediate determinants of health. This includes the rural, remote location of the community, resulting in high food prices, limited availability of fresh and nutritious food options, and the poor quality of store-bought products due to transportation and resources needed to bring supplies in the community (Leblanc-Laurendeau, 2020; Richmond et al., 2020; Reading et al., 2009; Syme, 2003). It is within this context that health programs emerge as particularly valuable community resources, serving as frontline responders to these barriers and immediate community needs. Drawing from community voices and lived experiences, the following section shows three interconnected dimensions of program value in the community.

Health programs as family and community support systems

Activities encourage family participation, embedding nutrition education within family dynamics while strengthening knowledge and relationships around food and nutrition. This approach leverages family structures as powerful vehicles for information dissemination and sustainable behavior change (Mosavel et al., 2006). Community members emphasized the importance of family-oriented programming that builds both family capacity and parental capacity through collaborative activities with their children. For example, the community kitchen cooking workshop, where families prepare meals together with children actively involved in the cooking process, integrates educational components into family interactions. Participants highlighted the importance of creative educational approaches, like food demonstrations and nutrition bingo, used to share knowledge and engage children while ensuring that each activity fosters participant learning. They emphasized the importance of involving their children in community activities as a way to cultivate a sense of belonging at a young age within the community.

Beyond family strengthening, the programs provide spaces for communities to support one another. Participants were motivated by the opportunity to find mutual support with like-minded community members through the programs. Furthermore, food sharing represents a central component of program activities, serving as both a culturally important practice and an effective engagement strategy for health programming that encourages participation and conversations. Gathering around food, like *Lunch and Learns,* provides spaces for collective learning and strengthens social bonds between families and communities, facilitates meaningful discussions around food and nutrition challenges within the community, and ultimately inter-connects the people, the land, and the culture (Ray, 2008; Gurney et al., 2015). Community members also recognized that the programs contribute to community wellbeing by providing immediate support on identified challenges, which helps reduce family stress and potential negative behaviors that might result from unmet basic needs.

"It's geared to build the family's capacity and the parents' capacity to do things for their family. Like, doing things together, having a family kitchen where, they cook meals together, getting the kids involved, and doing teachings in that way." -Interview Participant 3

"I think for some people, like if those programs didn't exist, it would be a net negative for our community. I think even apart from all of the programming they do and things like that, just bringing resources into the community Like if those resources weren't here, then the family that they go to just simply wouldn't have them… And so I think that benefits me as a community member because it allows for less hungry families, which allows for less upset families who might do things that they wouldn't normally do."- Interview Participant 2

Health programs as frontline responders to immediate community needs

1. *On High Food Cost*

A key strength of the health programs lies in how their activities are directly informed by the community's lived challenges. High food cost is a common challenge consistently cited by community members and Health Center staff, with local members describing food prices in Moose Factory as much higher than in southern urban areas like Ottawa. The high prices of food led some community members to

purchase groceries from southern locations like Cochrane, Sudbury, and Timmins, even with added shipping fees, as this ultimately provides more and varied food options at a lower total cost. Meanwhile, others utilized trips to southern cities for medical appointments or family activities as opportunities to purchase food items in bulk at reduced prices.

"I hardly buy meat here at the Northern because it's so expensive, like wings that size …. is like almost $30 and then when I go out of town, like Timmins for appointments, I'll buy groceries." - Interview Participant 4

"It's a lot easier to meal plan when ordering from Cochrane because you have many other options available as well. I would say that it saved us money for sure…The groceries would last, I would say, the week, and like we're paying probably like $300.00 for groceries from Cochrane. But if we went to the Northern grocery store every day, which is how we were doing it for a while, it would cost more." -Interview Participant 1

The Community Health Coordinator also echoed that food remains a fundamental need in the community, acknowledging the increased interest in healthy eating among community members. However, many remain constrained by high food costs that limit their ability to choose healthier options. For example, interview participants from economically disadvantaged backgrounds prioritized price over other factors, such as availability, nutritional value, preferences, and dietary needs, when purchasing food. In contrast, participants from more advantaged socioeconomic backgrounds considered factors like nutritional value and preferences before the cost of food. The HBHC program coordinator also expressed similar concerns about high food prices affecting families and highlighted worries about the unclear ingredients and manufacturing processes used in commercial baby food. Stemming from this problem, the HBHC program coordinator frequently conducts baby food preparation workshops that teach first-time and early mothers to prepare homemade alternatives, such as fruit purees, addressing concerns about the affordability and quality of store-bought baby food.

"The food, that need. I've seen changes in how people eat. A lot of people want to be healthy. So, I have seen that, and there's not enough focus on that. We're still kind of stuck in the negative." - Community Health Coordinator

"Food is pricey here, and we are not entirely sure of what goes into the processing of baby food, so I just thought of making baby food healthy meals" - Codie O' Connor, HBHC program coordinator

Recognizing these economic challenges among community members, the provision of tangible incentives and giveaways in health programs not only encourages participation and engagement but also alleviates immediate financial barriers for economically vulnerable families. For example, a significant aspect of the HBHC program is the provision of giveaways, such as NutriBullet© blenders. These giveaways not only support parents financially but also encourage involvement in the activity. Moreover, two interview participants from disadvantaged socioeconomic backgrounds specifically mentioned that complementary items such as gift cards, incentives, and grocery supplies are their primary motivation for attending activities, noting that these resources provide substantial benefits for their households. While the programs neither eliminate food insecurity nor fully resolve access issues, they play an important role in alleviating the burden these challenges place on individuals and families.

"I was more inclined to participate because of the support aspect of it; having the program offer the blenders themselves was extremely helpful and encouraged me to be more curious without worrying about the financial aspects involved on my end."- Activity Participant 3

"Well, we appreciate getting free stuff. They do have gift cards, groceries, or prizes… it helps with maybe even like two weeks' worth of groceries. It helps." -Interview Participant 4

"I think it's taking advantage of what's being offered and being able to share those things with my kids and family. And I really want my kids to be engaged in the community and be part of it and to feel that sense of belonging. If I'm doing that, I'm role modeling that for them and they'll be willing to do that as well." – Interview Participant 3

2. On Limited food access and food availability

The community relies heavily on three primary market food options: the Northern Store, a smaller locally owned store, and a farmers' market that visits the community twice a month (Ferreira et al., 2022). Fresh produce availability is severely limited, with food items frequently expiring or spoiling upon arrival. It was observed that shelves in the grocery store are mostly empty by mid-week, resulting in supply shortages of essential items throughout the week.

"I think its availability, like you can go to the store with a plan most of the times and that plan kinda falls through just based off of what's available at the store. Like, sometimes you'll be missing one or two ingredients, and then you

kinda just have to think of a recipe on the spot or whatever it may be. So, I think availability is the biggest thing." – Interview Participant 1

Community members reported prioritizing the purchase of items like bread and milk immediately when new stock arrives, as these products typically sell out first and remain unavailable among other food items until the next scheduled delivery. The unpredictable availability of preferred food items disrupts meal planning, requiring community members to work with the ingredients available at the store. Most participants expressed the need for improved access to fresh meat, fruits, and vegetables. The subarctic climate and environmental conditions further compound food availability challenges by making local produce cultivation difficult and seasonal, thereby restricting fresh produce all year round. However, participants cited how the local food sustainability initiatives, such as community gardens (Ferreira et al., 2020), provided relief by offering food access to fresh vegetables and herbs while reducing their reliance on expensive store-bought produce. People especially valued the sustainability aspect, with some participants highlighting how harvests contributed to food access and availability that extended into the winter months. One participant shared avoiding store purchases except for basic staples, instead relying on foods they grow, hunt, and fish—including moose, caribou, geese, and fish—which sustain their family year-round. They explained that growing and hunting food "*is what makes them who they are"* and gives them a deep connection to the land. They emphasized that their family actively works toward food sovereignty by defining healthy eating as the consumption of traditional foods harvested from the land.

The DPP acknowledges these challenges in the community and respond to them through activities like food demonstrations, where participants learn to maximize available ingredients from the grocery store and locally grown produce into creative, diabetes-friendly, and healthy recipes and community cooking workshops, where families gain hands-on experience preparing affordable meals using budget-friendly ingredients from the store that they can replicate at home.

Health programs as tools for fostering self-sufficiency

The programs utilize nutrition education in culturally grounded approaches, equipping community members with the knowledge and practical skills to support informed food choices and food resource management, fostering greater self-sufficiency, and promoting long-term health and well-being. Community members described the importance of educational support that programs provide through knowledge sharing and learning of skills like grocery shopping skills, growing their own food, and skills to prepare food with limited resources. Several participants noted the significance of having programs that promote healthy behaviors, including healthy eating, diabetes management, and physical activity, particularly in a community that has experienced trauma, dysfunction, and health challenges.

"I think the fact that there's a constant program that's always promoting, like, health, like being healthy. I think that's so important in a community where there's been so much trauma and dysfunction and sickness… the Health Center and the work they do in constantly promoting health whether it's eating healthy or taking care of your health or being active like I think that's so key and I think it needs to be stronger." – Interview Participant 3

What supports are needed by the health programs?

This section explores community-identified needs and priorities that highlight broader systemic barriers affecting the delivery, reach, and sustainability of health programs in Moose Factory. These challenges have been compounded by the lasting impacts of COVID-19, which disrupted operations and exposed vulnerabilities in the existing system. The pandemic not only halted services, activities, and support during heightened need but also held back the momentum and community engagement that had been built over the years. Moving forward, rebuilding these programs has required significant effort as coordinators work to re-establish trust, re-engage participants, and adapt to the evolving needs of the community. The current rebuilding efforts, including the recent appointment of the HBHC program coordinator in May 2023 to rebuild a program that had been inactive during the pandemic, create additional challenges alongside existing systemic barriers. Through direct involvement in the

implementation and observation of nutrition-related activities, we gained further understanding of the operational realities of program delivery influenced by systemic challenges. These observations were corroborated through interviews with the program coordinators and the community health coordinator. Community members also shared insights for improving health programming, particularly in supporting vulnerable populations, enhancing accessibility, and expanding the scope of the activities.

Funding

Program coordinators consistently cited that existing funding frameworks are unsustainable, insufficient, and often delayed. This creates situations where health programs struggle to maintain consistent service delivery, engage in long-term planning, or develop comprehensive responses to community health needs. For example, the MFHC Food Bank program experiences frequent service interruptions as operations of the food bank are suspended whenever funding is unavailable or delayed. With this, the DPP coordinator has resorted to applying for external grants to address funding limitations. This grant-writing process adds a significant administrative burden and becomes counterproductive, diverting time and energy away from service delivery and toward funding procurement. While external funding sources, such as Jordan's Principle, have been leveraged to address urgent community needs, particularly in food security initiatives, program coordinators express concerns about the sustainability of these funding streams, as they are not guaranteed. Moreover, the census-based funding allocation is identified as particularly problematic as the system allocates funding based solely on Indigenous people living on reserve who have completed the census, rather than accounting for status or the actual population requiring services. The disconnection between this funding system and the actual service population creates resource gaps. This results in an unsustainable pattern of "on and off-funding" for the health programs. The Community Health Coordinator noted that these budgetary constraints impede organizational capacity for growth and program expansion. Addressing these challenges requires reevaluating funding allocation to ensure it aligns with the actual needs and realities of the communities being served.

“Diabetes prevention program is ISC [Indigenous Services Canada] funding, and it's minimal. So, like, the money we get is only covering salary. We don't get much. We have to find our own money to do any programming. So far, our Diabetes Prevention Coordinator’s job is probably, like, just simply getting funding to keep trying to make things work. So there's no expansion.” - Community Health Coordinator

Staff and Resources

The issue of funding in health services creates a complex web of challenges that extends far beyond mere financial constraints. This underfunding results in limited staff and inadequate resources, with both programs managed by a single coordinator, which places a significant burden on individual coordinators. The resulting workload may become overwhelming, leading to psychological distress, fatigue, and negatively affecting the overall quality of service and their well-being (Sovold et al., 2021). Furthermore, the absence of basic infrastructure, such as a functional kitchen space or adequate cooking equipment, restricts the capacity to conduct hands-on nutrition activities. The need to rent external spaces for activities like cooking workshops also adds an additional financial burden to programs. Program coordinators shared that a dedicated, well-equipped kitchen space would enable more food and nutrition activities and skills-building activities, facilitate hands-on community kitchens, and create more opportunities for community engagement. As Trickett (2009) emphasizes, communities need adequate resources to adapt, innovate, and engage individuals in processes of change that improve community health.

"I would say that I want to do more hands-on activities, but it's hard for us. See how hard it is just to have a food demo? Looking for the proper things to use, looking for a stove, [it's just] I wish we had a stove. I wish we had many stoves.” -Cynthia Kapashesit, DPP program coordinator

Needs and Priorities of Community Members

Participants highlighted the need for additional support targeting vulnerable populations, particularly individuals with disabilities who rely on social assistance. One participant noted that while programs exist for families with young children (under six and seniors over 60), there is insufficient

support specifically for individuals who have physical and mental disabilities, which prevent them from working, maintaining self-care, and performing daily activities independently. These limitations make it difficult to access basic necessities like food after covering essential expenses, as their monthly government assistance is insufficient to meet their needs throughout the month. Participants recommended expanding workshop topics beyond current offerings to avoid repetition and increase engagement. They suggested more information on traditional foods with programming targeted toward younger generations to preserve cultural food knowledge while making it accessible to diverse audiences. Moreover, participants gave ideas on workshop topics based on their practical needs: leftover recipe transformation techniques, child-friendly healthy recipe development, meal preparation and planning strategies, and traditional food preparation methods, including food safety protocols and fish filleting techniques. One participant also suggested that programs should provide more support for land-based activities, particularly supporting community gardening initiatives. They emphasized that this would serve a crucial function for the community, not only improving food access but also promoting holistic health benefits - mental, physical, and emotional well-being. Additionally, participants emphasized the importance of utilizing social media platforms more extensively for program promotion and information dissemination, recognizing these channels as primary sources of information access for many community members.

"I'm on ODSP [Ontario Disability Support Program], my husband and I, but we don't get that much. We only get like $1,700 a month, but still we pay our bills and then we still run out of groceries

.. And then there's no program for people like me in my age category, like 50 to 60. But you'll have programs for mothers who have children six and under. And then they'll have programs for people that are 60 and over. But still, there's no programs for somebody like me that still struggles." - Interview Participant 4

4.6 Discussion

This study offers a participatory perspective on how health programs in remote northern Indigenous communities are delivered and experienced, particularly in the context of ongoing colonial legacies, food insecurity, fragmented health governance, and impacts of COVID-19. While previous studies have identified challenges in health systems and health services in remote, northern Indigenous communities, these studies have largely relied on interviews, sharing stories, and literature reviews (Oosterveer et al., 2015; Wali et al., 2023; Stefanon et al., 2023). In contrast, this research engages directly in program delivery and is implemented alongside the MFHC program coordinators, providing a detailed account of how activities are carried out to address drivers of food insecurity in the community and offering lived understanding into the extent of systemic challenges faced by health programs. This collaborative work with MFHC better understands the significance of health programs and identifies further needs that reflect the community's priorities, capabilities, and capacity.

High food costs, which limit access to healthful foods, a limited availability of desired food items in local stores, and the generally low quality of fruits and vegetables are consistently identified as drivers of food insecurity in the community. From our observations, these challenges are not unique to MCFN, as they are well documented in the literature on food insecurity in remote, northern Indigenous communities (Huet et al., 2012; Leblanc-Laurendeau, 2020; Parker et al., 2019; Skinner et al., 2013). While most of the initiatives documented to address food insecurity were focused on local food development, food banks, and food programs, which are also present in the community, these initiatives primarily aim to increase food access and reduce cost barriers (Ferreira et al., 2022; Leibovitch Randazzo & Robidoux, 2019; Robidoux et al., 2023; Robidoux & Mason, 2017; Skinner et al., 2014). This study demonstrates the crucial role of culturally relevant nutrition education and hands-on workshops in supporting families in food selection and preparation, building nutrition knowledge, and enhancing resource management skills, thereby enabling them to make informed decisions and improve health outcomes. Similar to programs conducted in other Indigenous communities, cooking workshops, in-store food demonstration, and

nutrition education activities demonstrated increased consumption of healthful foods, improved food-related behavior, and increased self-efficacy (Abbott et al., 2012; Kolahdooz et al., 2014). Although the present study does not investigate food consumption and food-related behavior, this may suggest that similar culturally appropriate nutrition education activities may be effective in promoting healthy eating behaviors. Studies support that nutrition education is a valuable component in building nutrition knowledge and skills, which is a crucial factor in addressing food insecurity among remote, Indigenous communities (Shafiee et al., 2022). However, it is important to understand that nutrition education alone cannot improve food insecurity (Lee & Ride, 2018), but it should be integrated among other initiatives targeting food availability, food cost, food safety, and food quality (J. Browne et al., 2020; Shafiee et al., 2022). This study contributes to the limited literature in remote, northern indigenous First Nation communities by offering community-based insights on how nutrition education serves as an additional support in addressing food insecurity in these contexts.

Furthermore, conversations with community members also highlight the importance of providing flexible nutrition education that meets people at different stages of readiness for change, offering regular activities and accessible information while respecting individual pace and understanding. In communities where there has been intergenerational trauma, the adoption of unhealthy coping behaviors has become entrenched due to the lasting impacts of colonialism (Aguiar et al., 2015); tailored approaches to an individual's stage of readiness and constant support are especially important in overcoming the complex barriers to behavior change (Prochaska et al., 1997). However, these outcomes require sustained community engagement, empowerment, and consistent efforts to deliver programs, which necessitate adequate and long-term funding, along with dedicated resources to ensure program continuity and effectiveness (Sacca et al., 2022; Wright et al., 2019). Like many northern remote communities, MCFN faces challenges with inadequate infrastructure, insufficient funding, and limited human resources, which were also identified as barriers that limit program sustainability (Stefanon et al., 2023; Huot et al., 2019; Davies et al., 2023). Our firsthand participation in program delivery informed the extent of these

challenges in the community, where inadequate infrastructure necessitates the rental of kitchen spaces and the constant search for appropriate spaces to conduct programs. Insufficient funding compels program coordinators to apply for external grants to maintain operations, and the limited staff not only means a shortage of health professionals in the community but also leaves a single coordinator to manage responsibilities typically handled by a larger team. In many cases, Jordan's Principle funding fills gaps to keep programs operational, mirroring experiences in other First Nation communities (Sinha et al., 2022). Importantly, health programs in MCFN serve as the first point of contact for families seeking support and frontline responders to immediate, non-clinical needs. While health services in northern communities are primarily delivered through nursing stations or health clinics (Yangzom et al., 2023), limited resources and a predominant focus on acute care have resulted in inconsistent access to health promotion and preventive programs. Some communities lack these programs entirely, while others only offer them occasionally (Keenan et al., 2023; Oosterveer et al., 2015). These findings underscore the importance of strengthening and prioritizing sustained support in community-based health programs, not only as vehicles for preventive care but also as essential, culturally grounded support systems that respond to the everyday realities and needs of Indigenous families in remote settings. Like other Indigenous health research, Indigenous-led health services and programs often extend beyond formal objectives and adapt to family needs to offer holistic care that meets not only physical needs but also emotional support, social connection, and family advocacy, positioning them as crucial anchors of community well-being (Greenwood, 2009; Sinha et al., 2022; Wright et al., 2019).

Ultimately, this study points out the broader role of governance systems in shaping program delivery and outcomes. Federal and provincial jurisdictions must improve collaboration, communication, and coordination with each other regarding First Nations health for better alignment of policies and services that would support more equitable resource distribution, reduce service duplication, and allow efficient funding allocation (Woodhead, 2014; (Kyoon-Achan et al., 2021). The HTP funding agreement is insufficient to meet actual community needs and is bound by funding mandates that restrict data sharing

and collaboration with other health services due to confidentiality requirements. This creates isolated service silos that prevent the continuity of care and holistic care delivery to people. Again, the conceptualization of health and wellness for First Nations communities is not solely the absence of disease, but a holistic concept deeply rooted in relationships with the land, family, culture, and community (Lavallee et al., 2010; Sullivan et al., 2007). As such, health policies must reflect the cultural concepts, social conditions, traditional practices, needs, and priorities of the communities they aim to serve, and health strategies must adopt frameworks that are flexible, culturally grounded, and informed by the definitions of 'health' held by each community (Cohen et al., 2014; Krahn et al., 2021). Indigenous communities must be positioned at the center of health system governance and decision-making processes. This includes developing partnerships that respect and include Indigenous communities over program design, delivery, implementation, and evaluation as well as providing sustainable funding for a wholistic Indigenous-led programs. By shifting decision-making power to Indigenous communities and resourcing them adequately, health systems are better equipped to respond to distinct determinants of health, promote culturally meaningful wellness, and address long-standing inequities in a manner that is effective, respectful, and aligned with the principles of reconciliation and self-determination.

Conclusion

This study emphasizes the importance of adopting a strength-based approach that builds on the capabilities, resilience, and strengths of the community to create an inclusive and empowering framework that resonates with the community it serves. Indigenous-led health programs are vital in equipping individuals and families with knowledge, skills, and culturally grounded opportunities for healthier living; however, they alone cannot resolve the systemic challenges driving food insecurity. Addressing issues such as high food costs, limited access, and poor food quality—both in Moose Factory and in other northern, remote Indigenous communities—requires structural change from governing bodies. This includes shifting from top-down models to community-informed policies, where governments act as

supporters rather than drivers. Sustainable solutions must center Indigenous-led governance and uphold the autonomy of communities to manage their own resources and lead their own health and food systems.

To this end, ISC should re-evaluate its funding models and requirements to better align with community needs and priorities that are informed by community realities. Future funding agreements should support integrated service delivery by encouraging collaboration on the ground and case coordination for a holistic approach to health care delivery in communities. Furthermore, this study highlights the importance for researchers to meaningfully engage with communities through community-based participatory research (CBPR) approaches, which allow for in-depth understanding of one's situation, support co-learning, and ensure that knowledge generated is relevant, respectful, and rooted in their priorities. This is essential for developing responsive, sustainable, and equitable policies and strategies.

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CHAPTER FIVE

General Discussion

The long and dark history of nutrition research involving Indigenous communities in Northern Manitoba, where Indigenous children in residential schools were subjected to nutrition experiments without knowledge and consent, reflects a broader pattern of deficit-based and exploitative research practices among Indigenous populations. These experiments were not isolated incidents but part of a larger institutionalized and dehumanizing colonial ideology that has shaped Canada's policies (Mosby, 2013; Wardle, 2013). This thesis contributes to decolonizing nutrition research among Indigenous communities by emphasizing the importance of research done with respect, with responsibility, with relevance, and reciprocity that benefits the community. Central to this work is the prioritization of equitable partnership, where knowledge is collaboratively exchanged and Indigenous communities are engaged as co-researchers. Using a CBPR approach, this study demonstrates how research can be conducted ethically, for and with communities, rather than on them (Chataway, 1997; Greenwood & de Leeuw, 2012; Rains & Ray, 1995; Whyte et al., 1989).

The lasting impact of colonialism has led to limited access to Indigenous food systems and forced dependence on market-based food systems, resulting in a nutrition transition with significant negative impacts on Indigenous health (Krieger, 2001; Berkes & Farkas, 1978; Krech III, 1984; Liebow & Trudeau, 1962; Skinner et al., 2013; Taylor, 1972; Robidoux et al., 2017). The reliance on store-bought food poses additional burdens due to exorbitantly high costs and reduced availability of quality market foods, largely due to shipping costs to remote northern regions. As a result, many Indigenous communities face increased rates of food insecurity, also contributing to the prevalence of diet-related chronic diseases(Huet et al., 2012; Willows et al., 2009). This study describes the nutrition-related activities of the health programs, DPP and HBHCP, in MCFN in addressing family needs, drivers of food insecurity, supporting families, and promoting health in remote, northern communities. Furthermore, this study understands the degree to which systemic challenges are experienced and navigated on the ground, providing insights for policymakers, researchers, and public health professionals. These insights can

inform the development of targeted policies and strategies that are grounded in the realities faced by communities.

The article in this thesis demonstrates how health programs are designed to address the immediate concerns of the community. It delineates the comprehensive thought process from planning, implementation, to delivery, which centers on what the community needs and how it is best carried out, ensuring effective communication to engage families and disseminate knowledge effectively. Through our firsthand participation in program delivery, this study shows grassroots understanding of the extent of systemic barriers faced by the community. It shows real-time adaptations to program barriers, including unforeseen community circumstances such as water shortages and the impacts of broader systemic challenges that lead to securing grants to address underfunding, and renting spaces to compensate for the lack of basic infrastructure. While these systemic barriers have been documented in other studies in remote northern communities (Stefanon et al., 2023; Huot et al., 2019; Davies et al., 2023), this study provides insight into the resilience of the community in managing these challenges on the ground. Furthermore, this study highlights shortcomings in current policy structures governing Indigenous health care, such as the Health Transfer Policy (HTP). While the HTP advances Indigenous self-governance by allowing communities to manage their health services through various funding agreements (Lavoie et al., 2015), it remains limited by federal regulation (ISC, 2021b). The funding models determined by ISC do not reflect the actual needs or priorities identified by communities on the ground, nor do they account for the true population that the community serves. As such, this study suggests that policymakers and public health professionals should reflect on community realities and engage meaningfully with them to design policies and strategies that are responsive, equitable, and grounded in the lived experiences of those communities.

Furthermore, it also shows that health programs are an integral part of the community, not only providing immediate, non-clinical needs but also serving as spaces for social connections and family support, which are central aspects of the holistic concept of health among First Nations (Lavallee &

Poole, 2010; Sullivan & McHardy, 2007). This highlights the importance of prioritizing and improving support for these programs, which is essential for ensuring sustained services and extending their reach to help more individuals.

This collaborative work with MFHC was a co-learning process with the program coordinators. Through interviews and feedback conversations with community members, we gained insights into the meaningful impacts these programs had on families and the broader community. Simultaneously, program coordinators discovered the full extent of their contributions and how their efforts were creating positive community-level changes. The community-informed needs and priorities identified through this research process may provide new directions for strengthened programming, offering evidence-based guidance for upcoming activities and workshops.

The findings of this study underscore the resilience and strengths built within Indigenous-led health programs in MCFN despite facing systemic challenges and structural barriers stemming from political conflicts and jurisdictional ambiguities in health governance systems.

5.1 Strengths

This project was carried out through close collaboration with program coordinators and the community Health coordinator. Therefore, the results outlined in this study are the direct voices and lived experiences of the participating community members and Health Center staff. The study aimed to share knowledge about how programs are delivered and perceived by community members, as well as the operational challenges experienced by the programs in the context of a northern, remote Indigenous community. A key strength of this study lies in its integrated methodology, which combined firsthand involvement in program delivery and implementation alongside program coordinators, with semi-structured interviews with community members and feedback from activity participants. This multi-faceted approach provided both direct observation and participation in ground-level realities, while

interviews and activity feedback provided deeper insights into community perspectives on the health programs.

5.2 Limitations

Despite the extensive insights gained from this study, several limitations must be acknowledged that may affect the interpretation of findings. First, the study focused only on describing and documenting food and nutrition-related activities that we directly participated in, which aimed to address food insecurity and health promotion in the community. This does not include other program components that may also contribute to the community's holistic well-being. Second, this study does not evaluate the programs; hence, broader assessments of program effectiveness, outcomes, or long-term impacts were beyond the scope of this project. Third, fieldwork is only conducted for at most two weeks for every visit, which limits our ability to capture seasonal variations and adaptations in program delivery. Lastly, interview participants in the study findings were limited, as only six adult community members participated, and despite the activities being available to everyone, there was limited participation among youth. Future studies should actively engage youth to gain insight into their perspectives on these programs and identify strategies to improve their participation.

General Conclusion

Every time I visit communities for fieldwork, I come in excited and with the intention of sharing knowledge and contributing in meaningful ways to make a positive impact on individuals, families, and the community. But it always ends up with me leaving, having learned far more from the community through their knowledge, stories, and lived experiences that deeply shape not only my work but also my understanding beyond the field. This thesis shows the community's strength and resilience in responding to immediate non-clinical needs of the community and systemic barriers brought by colonial policies that shaped Indigenous health governance and service delivery. However, resilience should be understood as a

response, not a solution. While it is important to honour and celebrate community resilience, we must also confront the systems that have failed and forced it.

Within the current Canadian healthcare system, along with the policies that underpin it, Indigenous populations continue to face significant challenges in accessing and receiving equitable services (Lavoie, 2018; Lavoie et al., 2015; Mashford-Pringle, 2013; Walker et al., 2018). Community-based health programs in MCFN not only support chronic disease prevention and food security initiatives through health and nutrition education but also provide spaces for social connection, fostering a sense of group and community belonging. These aspects are central to holistic well-being, which is why health programs should also be prioritized within Indigenous healthcare. The current funding models supporting these programs should be reviewed and reformed to truly reflect the true cost of health service and program delivery in northern remote locations. The findings of this study suggest that policymakers must meaningfully engage with and include Indigenous communities in decision-making processes, ensuring that policies are informed by community realities and grounded in the knowledge of how best to meet their needs.

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