Supporting Inuvialuit Food Sovereignty: Characterizing Culture-Centered Dietary Messages for Healthy, Safe and Culturally Appropriate Diets in the Inuvialuit Settlement Region, Northwest Territories

by

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Author's Declaration

This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Statement of Contributions

Julia Gyapay was the sole author for Chapters 1 (Introduction and Study Rationale), 2 (Methodology and Methods), 5 (Conclusion) and Appendix T (Mangilaluk School Traditional Food Cookbook Project) which were written under the supervision of Dr. Kelly Skinner and were not written for publication.

This thesis consists in part of two manuscripts written for publication. Exceptions to sole authorship of material are as follows:

Research presented in Chapter 3:

This research was conducted by Julia Gyapay under the supervision of Drs. Kelly Skinner and Sonja Ostertag. Dr. Ostertag designed the study as part of the larger Northern Contaminants Program-funded *"Country Foods for Good Health (CFGH): Developing a Country Food Database for the Inuvialuit Settlement Region"* project along with co-Principal Investigators Drs. Skinner and Brian Laird. Dr. Ostertag conducted one in-person interview. Julia Gyapay contributed to study design revisions, led participant recruitment, conducted telephone interviews, and completed the coding and analysis of all interviews. Julia Gyapay wrote the draft manuscripts with feedback from Drs. Skinner, Ostertag, Laird and Sonia Wesche. Feedback on the draft manuscripts was also provided by the CFGH project partners at the Government of the Northwest Territories (GNWT) Department of Health and Social Services (DHSS), Allan Torng and Mabel Wong, and Jullian MacLean at the Inuvialuit Regional Corporation (IRC). Julia Gyapay prepared the manuscript for submission to *Canadian Food Studies / La Revue canadienne des études sur l'alimentation* (Research Article).

Research presented in Chapter 4:

This research was conducted by Julia Gyapay under the supervision of Dr. Kelly Skinner, bridging the larger *"CFGH"* and Canadian Institutes of Health Research-funded *"Community Capacity for Climate Change and Food Security (C4FS) Action in the Northwest Territories"* projects. The C4FS project is led by Principal Investigator Dr. Skinner and Co-Principal Investigators Drs. Sonia Wesche and Andrew Spring. Julia Gyapay designed the study with consultations from Drs. Skinner, Sonja Ostertag, Sonia Wesche, Brian Laird and a Tuktoyaktuk community researcher, Kanelsa Noksana. Julia Gyapay led participant recruitment and conducted key informant telephone and videoconference interviews while Kanelsa Noksana led participant recruitment and conducted in-person storytelling and talking circle interviews in Tuktoyaktuk. Julia Gyapay completed the coding and analysis of all interviews and wrote the draft manuscripts with feedback from Kanelsa Noksana and Drs. Skinner, Ostertag, Wesche, and Laird and the larger project partners at the GNWT DHSS (Allan Torng and Mabel Wong), GNWT

Department of Environment and Natural Resources (ENR) (Jennifer Fresque-Baxter) and IRC (Jullian MacLean). Julia Gyapay prepared the manuscript for submission to the special issue "Traditional Diets: Sustainability, Sovereignty, Safety, Food Security, and Health Dimensions" in *Nutrients* (Research Article).

Abstract

Background: Contemporary Inuit diets are comprised of both country and store-bought foods, which each confer benefits and risks to Inuit physical, mental, cultural, spiritual and socio-economic health. Inuit residing in Inuit Nunangat (the Canadian traditional homelands of the Inuit) disproportionately experience food insecurity and impacts of climate change, threatening the quality and safety of foods consumed. Elevated concentrations of certain environmental contaminants in Inuit Nunangat represent a concerning source of Inuit dietary exposure to contaminants through country food consumption. Further, Inuit are experiencing disconcertingly high rates of chronic diseases, are consuming less nutritious and culturally significant country foods, and are consuming more unhealthy, non-nutrient dense store-bought foods. It is therefore imperative that Inuit communities have access to evidence-informed and culturally relevant information promoting healthy and safe diets to support their nutritional and cultural well-being. Dietary messages addressing the health risks and benefits of country and store-bought food choices and activities in the Inuvialuit Settlement Region (ISR) of the Northwest Territories (NWT) aim to reduce harm and improve health among Inuvialuit (Inuit from the Western Arctic). However, an understanding of how dietary messages are developed and disseminated in the ISR remains unknown and best practices for collaborative approaches to nutrition communication grounded in Inuvialuit culture and knowledge is understudied. This project aims to fill these gaps in knowledge, extending our understanding of dietary message communication strategies in Inuit communities.

Objectives: The purpose of this thesis is to (1) Characterize current public health dietary messages in the ISR (Study 1); (2) Identify how territorial, regional and local dietary message disseminators, local country food knowledge holders, and the public in Tuktoyaktuk can co-develop culture-centered dietary messages to more effectively promote healthy, safe and culturally appropriate diets in the community (Study 2); and (3) Provide recommendations to territorial, regional and local dietary message stakeholders to further improve dietary messaging in the ISR and NWT (Studies 1 and 2).

Methods: This study utilized an Indigenous research paradigm and community-based participatory and decolonizing research approaches. An in-person interview (n=1) (February 2020) and telephone interviews (n=13) (May-June 2020) were conducted with key informants (health professionals, government employees and community nutrition program coordinators) in Inuvik, Tuktoyaktuk, Paulatuk and Yellowknife (Study 1). An Inuvialuk community researcher conducted storytelling interviews with country food knowledge holders (n=7) and community members (n=3), and a talking circle with local public health dietary message disseminators (n=2) between June-July 2021 in Tuktoyaktuk (Study 2). Follow-up key informant telephone and videoconference interviews with territorial and regional dietary

message disseminators (n=5) were completed in June 2021 (Study 2). Interviews were analyzed using thematic analysis.

Findings: The findings indicated that dietary messages disseminated to the public in the ISR are developed at all scales and communicated by territorial and regional (allied) health professionals, territorial and regional health department representatives, regional and local food program coordinators, academic researchers, country food knowledge holders and local leadership through a variety of in-person, written, audio and online methods. Country food knowledge holders communicate their own messaging through the sharing of Inuvialuit knowledge while harvesting and preparing country food in their communities. Public health dietary messages focus predominantly on a) healthy store-bought food choices, b) nutritional advice about store-bought and country foods and c) safety risks of consuming country foods. Federal and territorial messaging is seldom tailored to the ISR, lacking representation of the Inuvialuit food system and consideration of local food realities. Key barriers to regionally tailored, culture-centered dietary message development and dissemination in the ISR included a lack of collaboration between stakeholders involved in communications and limited resources required to develop trusting, respectful and collaborative relationships between dietary message stakeholders. Participants at all levels support increased inclusion of cultural and community perspectives about food to develop regionally and locally tailored dietary messaging, especially about country food harvesting and preparation knowledge and skills. Although most dietary message stakeholders wish to be involved in co-development processes, some country food knowledge holders desire leading traditional communications about country foods in Tuktoyaktuk.

Conclusion: This project has made an important contribution to the literature on health and risk communication about country and store-bought foods in northern Indigenous communities by characterizing dietary messages disseminated in, for and within the ISR, examining residents' awareness of messages, and identifying best practices for co-developing regionally and locally-tailored, culture-centered dietary messages in the ISR. Findings from this project have informed the creation of the Inuvialuit Food Messages Survey to evaluate the effectiveness of dietary messages as part of the ongoing *Country Foods for Good Health* project. Findings have also informed recommendations to NWT and ISR dietary message stakeholders to more effectively promote healthy, safe and culturally appropriate diets in Tuktoyaktuk and the ISR through the (co-) development and dissemination of culture-centered dietary messaging that supports Inuvialuit food sovereignty. Additionally, the process of conducting this thesis during the COVID-19 pandemic has led to methodological innovations for working remotely with community researchers and is able to provide key recommendations for researchers that can be used post-pandemic. These findings and recommendations have practical applications for other Inuit Nunangat

regions and Canadian northern Indigenous communities interested in understanding and improving dietary messaging communication strategies.

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reminding me to take breaks, and sharing laughter and tears. Thank you to my sister, Ilona, for your love and inspiration to strive for more ambitious challenges.

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Land Acknowledgement and Positionality

As a non-Indigenous researcher studying Indigenous health, it is imperative that I practice and articulate reflexivity and self-location throughout all stages of my research. It is through these actions that I am able to reflect upon my positionality, privileges, worldview, and personal purpose and motivations as a graduate student to be accountable to myself, the environment, and the communities for whom I do research.

I identify as a second-generation settler Canadian of Hungarian, German and Austrian ancestry. I was born, raised and currently reside on Treaty 8 territory in Hay River, Northwest Territories (NWT), home of the Dehcho Dene, Denendeh and Métis. During my first year of graduate studies I lived on the traditional lands of the Neutral, Anishinaabeg, and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, land that was promised to the Haudensaunee of the Six Nations of the Grand River, within the territory of the Neutral, Anishinaabe, and Haudenosaunee peoples. My research takes place in the Inuvialuit Nunangit Sannaiqtuaq (Inuvialuit Settlement Region) of the NWT, the land of the Inuvialuit. I acknowledge that I have directly benefited from historical and ongoing colonial policies, practices and laws aimed at eradicating or assimilating Indigenous peoples on Turtle Island (present-day Canada). I acknowledge that I have a responsibility to educate myself and other settler Canadians about the injustices and systemic racism faced by Indigenous peoples in Canada, and to use this knowledge to inform my research and worldview in the goal of conducting equitable, respectful and community-driven research in partnership with Indigenous communities.

While growing up in Hay River, NWT, I had the privilege to learn about the local ecology and Dene culture, values and ways of knowing through family outdoor adventures, school classes and annual on-the-land camps, which greatly impacted my present worldview and research interests. It was through these educational experiences that I learned to see from both Western scientific and Indigenous knowledge systems from a young age. Moreover, while residing and working in the NWT I experienced the impacts of a changing climate on the Territory's ecology and communities and witnessed the effects of the food insecurity crisis on residents' health, fostering my passion to engage in climate change and food sovereignty research in the NWT. Furthermore, while participating in on-the-land science camps in the Canadian Territories during high school and university, mentored by scientists and Indigenous knowledge holders, I became passionate about learning how NWT communities can adapt to the impacts of climate change, promoting the interdependency between ecosystems and human health. Once I began taking Indigenous health courses throughout my undergraduate degree and working in communities across the NWT during my summers, I wished to apply my knowledge and lived experiences by returning home to conduct health research in the NWT, with NWT communities. I believe that it is by doing

research, incorporating the strengths of both Western and Indigenous knowledge systems and methodologies, that I can honour the knowledge I have been gifted to take care of the land and the people in the NWT. Consequently, my present research is motivated by my commitment to serving Indigenous peoples in a respectful and informed way, using my privilege to amplify the perspectives of Indigenous peoples, and strengthening the health of the land and people here in the NWT.

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List of Abbreviations

CBPR: Community Based Participatory Research

CFG: Canada's Food Guide

CFGH: "Country Foods for Good Health: Developing a Country Food Database for the Inuvialuit Settlement Region" research project

COVID-19: Coronavirus disease 2019

C4FS: "Community Capacity for Climate Change and Food Security Action in the Northwest Territories" research project

DHSS: Department of Health and Social Services (GNWT)

ENR: Environment and Natural Resources (GNWT)

GNWT: Government of the Northwest Territories

IFA: Inuvialuit Final Agreement

IFG: Indigenous Food Guide

IGC: Inuvialuit Game Council

IRC: Inuvialuit Regional Corporation

ISR: Inuvialuit Settlement Region

NWT: Northwest Territories

OCAP®: First Nations Principles of Ownership, Control, Access and Possession

PCC: Paulatuk Community Corporation

PHTC: Paulatuk Hunters and Trappers Committee

TCC: Tuktoyaktuk Community Corporation

TCPS2: Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans

THTC: Tuktoyaktuk Hunters and Trappers Committee

Chapter 1: Introduction and Study Rationale

1.1 Study Overview

Country and store-bought foods each present benefits and risks to Inuit food security and holistic health (Beaumier et al., 2015; Blanchet & Rochette, 2008; Council of Canadian Academies [CCA], 2014; Damman et al., 2008; Egeland et al., 2010; Fillion et al., 2014; Ford, 2009; Sheehy et al., 2015). Food insecurity rates are disconcertingly high and rapid environmental changes experienced in the Canadian Arctic are threatening the quality and safety of foods consumed by Inuit and consequently Inuit socio-cultural health (Chan et al., 2006; Egeland et al., 2011; Ford, 2009; Ford & Beaumier, 2011; Ford & Berrang-Ford, 2009; Furgal & Seguin, 2006; Healey et al., 2011; Inuit Tapiriit Kanatami [ITK], 2021; Kuhnlein & Chan, 2000; Wesche & Chan, 2010). Therefore, it is critical that Inuit communities have access to evidence-informed and culturally relevant information about healthy and safe diets to support their nutritional and cultural well-being (Arctic Monitoring and Assessment Programme [AMAP], 2015; Dutta-Bergman, 2016; Furgal et al., 2005; Krummel & Gilman, 2016). Territorial and regional health departments in the Northwest Territories (NWT) currently communicate information and advice about food-related choices and activities (e.g., growing, harvesting, buying, bartering, preserving, storing, preparing, cooking, consuming, and sharing food) to NWT communities via dietary messages to reduce harm and promote good health. However, a detailed understanding of how dietary messages are developed and disseminated in the Inuit Nunangat (the Canadian traditional homelands of the Inuit comprised of the Inuvialuit Settlement Region (ISR), Nunavut, Nunavik, and Nunatsiavut) remains unknown (ITK, 2021). Further, no studies have addressed best methods to collaboratively develop and communicate regionally tailored, culturally relevant dietary messages between territorial, regional and local dietary message disseminators in the ISR.

Addressing these gaps in knowledge, this thesis seeks to answer the following research questions: (1) What are the characteristics of current public health dietary messages that guide food choice in the Inuvialuit Settlement Region (ISR); and (2) How can the perspectives and Inuvialuit knowledge of territorial, regional, and local public health dietary message disseminators, local country food knowledge holders, and the public inform the co-development of culture-centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT?

This introductory chapter provides background information on health communication in Canadian northern Indigenous communities; dietary messaging in Canada, the NWT and ISR; and food security, insecurity and sovereignty in Inuit and ISR communities. Through this description of the current state of knowledge about dietary messaging in Canadian northern Indigenous communities and associated

knowledge gaps, this chapter concludes by presenting the project's context, study rationale and research questions and objectives.

1.2 Health Communication in Canadian Northern Indigenous Communities

As this thesis addresses health messages about food with Inuvialuit (Inuit from the Western Arctic) communities, this section begins by describing the related concept of health communication. It then situates health communication within Canadian northern Indigenous communities, presenting current communication approaches.

1.2.1 Health Communication

At its core, *health communication* is "the study and use of communication strategies to inform and influence individual and community decisions that enhance health" (Center for Disease Control and Prevention, 2011, para. 3). Schiavo (2014, p. 9) expands upon this definition by framing health communication as "a multifaceted and multidisciplinary field of research, theory and practice. It is concerned with reaching different populations and groups to exchange health-related information, ideas, and methods in order to influence, engage, empower, and support individuals, communities, health care professionals, patients, policymakers, organizations, special groups and the public, so that they will champion, introduce, adopt, or sustain a health or social behavior, practice or policy that will ultimately improve individual, community, and public health outcomes". As elucidated in this definition, health communication aims to improve health by informing, influencing, and motivating individual and community knowledge, awareness, attitudes, and behaviours; therefore it is recognized as an integral tool for health promotion and disease prevention (Thomas, 2006; Schiavo, 2014).

Canadians are often exposed to health messages through public education campaigns designed to encourage healthy behaviours, increase awareness, and motivate individuals to adopt recommended behaviours, such as increasing one's consumption of fruits and vegetables (Health Canada, 2019; Thomas, 2006). Health messages are often communicated to the public through public education campaigns conveyed through public service announcements, radio, television, and social media; via educational messages on brochures and posters; and community-based programs (Thomas, 2006). Notably, although health communication is a cornerstone of health promotion, "health communication alone, however, cannot change systemic problems related to health", including a lack of access to health services, poverty, discrimination, and environmental degradation (Thomas, 2006, p. 184). Nonetheless, health communication "can help advocate for change and create a receptive environment to support the development of new health services or the allocation of additional funds for… access to community

services. In doing so, it helps secure political commitment, stakeholder endorsement, and community involvement to encourage change, devise community-specific solutions, and improve health outcomes" (Schiavo, 2014, p. 29). As depicted in Figure 1, the health communication environment is comprised of numerous interconnected factors, including the audience (communities and other key groups), recommended health or social behaviours, and the political and social environment (Schiavo, 2014).

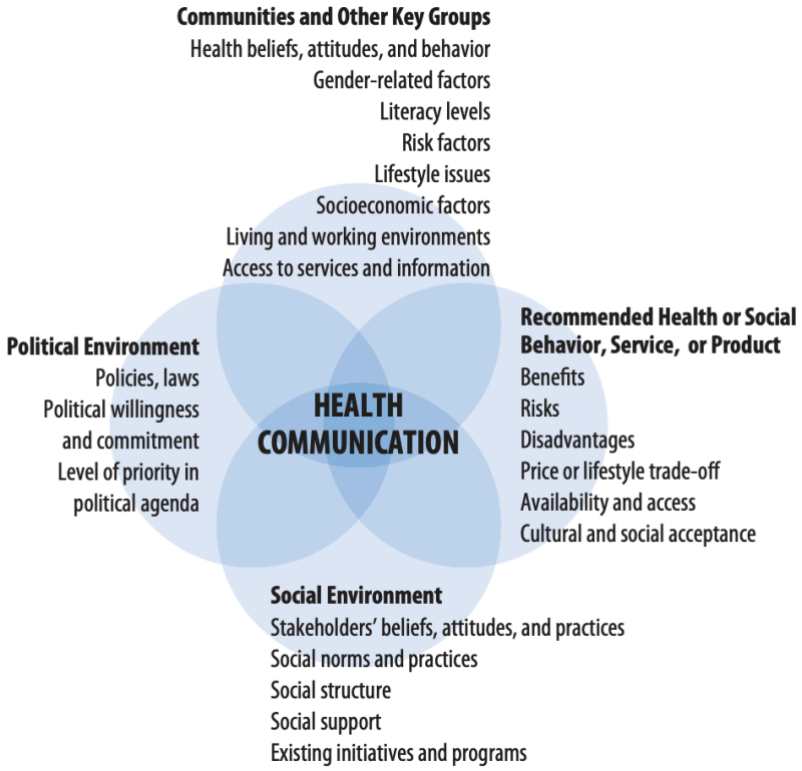

Figure 1: The health communication environment (Schiavo, 2014)

Therefore, effective health communication must acknowledge and account for socio-demographic, individual, societal, and environmental determinants when aiming to advance health outcomes of communities and individuals (Willows, 2005). The following section will explore health communication strategies employed in Canadian northern Indigenous communities, directing our attention to the cultural and social acceptance of health messages tailored to specific populations.

1.2.2 Health Communication Strategies in Canadian Northern Indigenous Communities

It is well recognized that effective health messages communicated in Indigenous communities must be developed in partnership with communities and grounded in cultural and community knowledge, skills, values, and worldviews to ensure they are relevant, trusted, accessible, culturally appropriate, and

respectful (AMAP, 2015, 2021; Boyd & Furgal, 2019; Colles & Maypilama, 2014; Judd et al., 2005; Krummel & Gilman, 2016; National Collaborating Centre for Indigenous Health [NCCIH], 2020). Although these principles are useful for the development and communication of health messages for non-Indigenous populations, they are fundamental to effectively developing and communicating health messages for and with Indigenous populations given their disproportionate experience of racism, systemic discrimination and resulting socioeconomic disadvantage and health care inequities perpetuated by historic and present-day discriminatory and colonial legislations and practices, particularly in the Canadian healthcare system (Phillips-Beck et al., 2020; CCA, 2014; Reading & Wien, 2009). Importantly, many Indigenous populations view health as holistic, extending beyond the biomedical model to incorporate the physical, mental, spiritual, emotional, and environmental dimensions of health (CCA, 2014). Consequently, since Indigenous and Western worldviews of health differ significantly and health messages have historically excluded Indigenous worldviews and knowledges, it is critical that health messages reflect local and Indigenous knowledges and worldviews to ensure messages are trusted and relevant to the target population.

The COVID-19 pandemic provided an important opportunity to examine effective health communication strategies in Canadian northern Indigenous communities. For example, federal, territorial and Indigenous partners on Indigenous Services Canada's "Task Group on Healthy Living" developed core principles for the development and communication of culturally relevant health messages to support the health of Canadian northern Indigenous communities during COVID-19 (NCCIH, 2020). The seven core principles identified as essential for effective health communication in northern Indigenous communities include (1) *Accessibility*: communicating messages in an accessible way and in multiple languages and formats; (2) *Context-matters:* creating population-specific or demographic-specific messaging; (3) *Distinctions-based:* acknowledging the different contexts and diversity of First Nations, Inuit and Métis peoples; (4) *Clear and concise messaging:* using simple language; (5) *Strength-based approach*: understanding that Indigenous peoples have the knowledge and expertise to address their own concerns and addressing these strengths rather than deficits; (6) *Cultural identity and cultural knowledge:* grounding messaging in cultural identity and Indigenous knowledges; and (7) *Wise practices*: applying Indigenous ways of knowing and solutions to inform message development (NCCIH, 2020). Examples of COVID-19 health messages reflecting the NCCIH (2020) core principles to effective health communication in northern Indigenous communities include posters developed by Hotıì ts'eeda (2020) in the NWT translated in each regional dialect (Figure 2) and infographics and videos developed by ITK (2020) tailored to Inuit communities (Figure 3).

Figure 2: Hotì ts'eeda (2020) COVID-19 poster developed for the Tłı̨chǫ region of the Northwest Territories

Figure 3: Inuit Tapiriit Kanatami (2020) COVID-19 infographic for Inuit Nunangat (Inuit traditional homelands in Canada)

1.3 Dietary messaging in Canada, the NWT and ISR

This section defines and distinguishes nutrition communication from dietary messaging. It then situates dietary messaging within the current state of knowledge in Canada, Canadian Inuit communities, the Northwest Territories, and the ISR, reviewing and presenting gaps in the literature. Drawing on these gaps, the concept of culture-centered dietary messaging will be explored.

1.3.1 Nutrition Communication and Dietary Messaging

Nutrition communication is defined as "communication about food and nutrition for the purpose of developing a platform for inquiry and exchange of ideas or to influence knowledge, understanding, attitudes, decision-making processes, or behaviors" (Mayfield, 2020, p. 8). The goals of nutrition communication are to "influence individuals or collective decision-making processes… [and] improve knowledge, attitudes, and behaviors related to food, nutrition and health" (Mayfield, 2020, p. 10). Nutrition communication is evidence-based, drawing on research and practice to inform nutrition communication theory, and is both an art and a science, merging creative, artistic, and scientific skills in communication design and delivery (Mayfield, 2020). Fundamentally, nutrition communication involves

a *sender* (the person or group of people conveying information) communicating a *message* (ideas or information) to a *receiver* (a person or group of people to whom the information is directed) via a *channel* (the method by which the message is conveyed) (Mayfield, 2020). Importantly, the *environment* includes the physical, social and emotional context in which a message is communicated (e.g., physical setting, social group, cultural background and emotional state) (Mayfield, 2020).

Drawing on the concept of nutrition communication, this project defines *dietary messaging* as information and advice addressing the health benefits and/or risks associated with diet-related choices and activities (including growing, harvesting, buying, bartering, preserving, storing, preparing, cooking, consuming, and sharing food), communicated by dietary message disseminators (e.g., public health professionals, allied health professionals, government health representatives, academic researchers, nutrition and food program coordinators, and Indigenous knowledge holders) to the public with the goal of reducing harm and maintaining and improving health. Figure 4 depicts the relationship between health communication, nutrition communication and dietary messaging in the ISR.

Figure 4: Interconnections between the concepts of health communication, nutrition communication and dietary messaging in the Inuvialuit Settlement Region (ISR) (Gyapay, 2022)

It is important to note that knowledge and awareness about healthy and safe food choices and behaviours conveyed via dietary messaging is only one factor influencing peoples' ability to make positive dietary change (Willows, 2005). An interplay of environmental, social, socio-economic, and individual factors and inequities influence one's dietary decisions (Dutta-Bergman, 2005; Marcone et al., 2020). Therefore, continued efforts and policies to improve the social determinants of health (e.g., food security, climate change and environmental contaminants, culture, housing, employment, education and

mental wellness) are greatly needed in addition to promoting healthy food choices and behaviours (ITK, 2014).

1.3.2 Dietary Messaging in Canada

Dietary messages in Canada have been developed and communicated federally by Health Canada since the 1930s via *dietary guidance*, "evidence-based information and advice about making food choices that promote health and reduce the risk of obesity and nutrition-related chronic diseases" (Health Canada, 2016, p. 1). Federal dietary guidance defines healthy eating and informs nutrition and health education, policies, programs, and the communication of healthy eating information to Canadians (Health Canada, 2016). Dietary guidance is developed and communicated federally and implemented by provincial/territorial/regional governments, health professionals, academics and non-governmental organizations to support healthy living among Canadians (Health Canada, 2016; Government of Nunavut, 2012). A familiar example of Canadian dietary guidance is Canada's Food Guide (CFG), a policy and educational tool designed to "hel[p] people make food choices to meet nutrient needs, improve their health, and reduce their risk of nutrition-related chronic diseases and conditions" (Health Canada, 2016, p. 2). CFG was originally released in 1942 and was most recently updated in 2019, built on Canada's Dietary Guidelines (Health Canada, 2019; Wilson & Shukla, 2020). Wilson and Shukla (2020) have critiqued the 2019 CFG, highlighting its failure to incorporate Indigenous food systems, consider socioeconomic barriers to accessing affordable and culturally relevant healthy foods, and incorporate Indigenous food sovereignty into the guide. The authors recommend decolonizing CFG through the creation of Indigenous food guides specific to Indigenous groups that celebrate local and Indigenous food systems, associated knowledges and perspectives (Wilson & Shukla, 2020).

Although Health Canada adapted CFG in 2007 to reflect the food systems of Indigenous peoples in Canada, resulting in an Indigenous Food Guide (IFG) entitled *"Eating Well with Canada's Food Guide- First Nations, Inuit and Métis"*, it was criticized for prescriptively focusing on food groups and portion sizes and has not been updated since this approach was discontinued in the general 2019 CFG (Health Canada, 2010; Wilson & Shukla, 2020). Further, *"Eating Well with Canada's Food Guide- First Nations, Inuit and Métis"* adopts a pan-Indigenous approach, overlooking the diversity of Indigenous peoples and food systems in Canada (Wilson & Shukla, 2020). In response to this problematic gap, several region-specific IFGs and healthy food guidelines have been created by Indigenous communities and health organizations (Wilson & Shukla, 2020). For example, the First Nation Health Authority (FNHA, 2021) published the *"Healthy Food Guidelines for First Nations Communities"* in 2009 to educate Indigenous communities in British Columbia about healthy food and beverage choices. The

FNHA (2021) also created a *"First Nations Traditional Foods Fact Sheets"* series, featuring information and Indigenous knowledge about traditional foods (marine and terrestrial species, game birds and plants) available in the region, their traditional uses, and nutrition messages detailing the nutrient values (Guyot et al., 2006). Similarly, the Government of Nunavut (2012) created the *"Nunavut Food Guide"*, an IFG tailored to Nunavut, promoting the consumption of country foods and healthy store-bought foods, balanced diets (reflecting CFG food groups), and traditional values and food practices. Overall, Health Canada continues to be the predominant source of dietary messages in Canada, focusing primarily on healthy store-bought food choices.

1.4 Dietary messaging in Canadian Inuit communities

To understand dietary messaging in Canadian Inuit communities, this section will first describe the Inuit food system, contextualizing the importance of country foods for Inuit health. The impacts of climate change on the Inuit food system and the current state of understanding of dietary messaging in Canadian Inuit communities is then explored.

1.4.1 Country Foods, Store-Bought Foods, and Inuit Health

Both country and store-bought foods are important components of contemporary Inuit diets, Inuit food security, and Inuit health (CCA, 2014). *Country food*, *Indigenous food*, *traditional food* and *wild food* are synonymously used to refer to marine and terrestrial species, game birds and plants, locally or regionally harvested from the environment for human consumption (Guyot et al., 2006; ITK, 2019). Since *country food* is the preferred term for Inuit, it will be used throughout this thesis (CCA, 2014). Examples of country foods *harvested* (obtained through hunting, trapping, fishing or any other means) in the ISR include beluga, fish, caribou and berries (ITK, 2019). In contrast, *store-bought food* and *market food* refer to food that is sold in grocery stores, most often shipped from southern centers to Inuit communities (ITK, 2019). The term 'store-bought food' is used rather than 'market food' to avoid confusion with food sold at farmer's markets.

The importance of country food for the physical, mental, cultural, spiritual, and socio-economic health of Inuit communities is well established as country food is central to Inuit food security, personal and cultural identity, economies, and holistic health (Beaumier et al., 2015; CCA, 2014; Damman et al., 2008; Ford, 2009). Country food system practices—such as harvesting, preparing, preserving, consuming, and sharing country food—promotes health and physical activity, improves food security, fosters the sharing of Inuit knowledge, skills and values to younger generations, unifies Inuit communities, and strengthens Inuit culture since the environment and country food comprise Inuit identity (Damman et al.,

2008; Lemire et al., 2015). Inuit residing in Inuit Nunangat are presently experiencing a *nutrition transition*, meaning a shift in diet away from country foods towards commercially imported, non-nutrient dense, high-calorie, processed store-bought foods (Damman et al., 2008; Fillion et al., 2014; ITK, 2021; Little et al., 2020; Sheehy et al., 2015). It is well acknowledged by scholars that the nutrition transition away from country foods is associated with food insecurity, nutrient deficiencies, increased consumption of saturated fat, sugar and salt, higher caloric intake, greater risk of chronic health diseases (particularly diabetes and obesity) and reduced cultural cohesion among Inuit residents (Blanchet & Rochette, 2008; Egeland et al., 2010; Fillion et al., 2014; Sheehy et al., 2015). This rapid and problematic dietary transition away from country foods towards low-cost, high energy, non-nutrient dense store-bought foods among Inuit in Inuit Nunangat has been linked to historical and ongoing colonial processes, poverty and socio-economic factors preventing access to country foods and healthy store-bought foods, changing food preferences and knowledge, and impacts of climate change on the country food system (Kenny et al., 2018; Little et al., 2020; Rosol et al., 2016). Inuit tend to consume more store-bought foods, especially non-nutrient dense store-bought foods, than country foods (Egeland et al., 2011; Kuhnlein et al., 2004; Sharma et al., 2010; Zotor et al., 2012) and store-bought foods comprise over 80% of the total Inuit diet based on energy according to the 2007-2008 IPY Inuit Health Survey findings (Kenny et al., 2018). Further, younger Inuit between the ages of 20-40 residing in Inuit Nunangat consume significantly less country food in comparison to Inuit aged 40 and older, and younger Inuit tend to prefer store-bought foods over country foods (Kuhnlein et al., 2004; Newell & Doubleday, 2020). Importantly, significant barriers to the consumption of nutrient-dense store-bought foods in Inuvialuit communities include accessibility, availability, and quality, particularly due to the high cost of shipping and the low quality and variety of nutritional store-bought foods (CCA, 2014; Egeland, 2010; Little et al., 2020). Thus, although both country and store-bought foods play important roles in contemporary Inuit and Inuvialuit diets, a nutrition transition away from country foods towards non-nutrient dense, low cost, high-energy store-bought foods in recent decades emphasizes the importance of promoting the consumption of country foods and nutrient-dense store-bought foods through dietary messaging and cooking, nutrition and harvesting programs. Further, policies aimed at improving the social determinants of Inuvialuit health—especially food security, housing, employment, mental wellness, and climate change adaptation—are also needed to support Inuvialuit health and well-being (ITK, 2014).

1.4.2 Climate Change and the Inuit Food System

Undeniably, the environment is an important determinant of health for Inuit (ITK, 2014). In particular, the health of Inuit communities depends on the health of the land since the country food system is tightly linked to the environment (ITK, 2014). There is a strong consensus in the scientific community

that anthropogenic climate change is disproportionately affecting the Arctic as it is warming at over twice the rate as the rest of the Earth (Bush & Lemmen, 2019). Consequently, Inuit communities directly experience the impacts of climate change due to their close connection with the environment (United Nations, 2017). Disconcertingly, it is widely recognized that climate change increasingly threatens Inuit country food systems by compromising the availability, accessibility, and quality of country foods for Inuit harvesters (Furgal & Seguin, 2006; Ford, 2009; Guyot et al., 2006; Kuhnlein & Chan, 2000; Wesche & Chan, 2010). As a result, climate change reduces Inuit food security and nutritional status and accelerates the nutrition transition to non-nutrient dense store-bought foods, further exacerbating existing chronic health conditions, reducing the intergenerational transmission of traditional knowledge, and accelerating the loss of spiritual and cultural connection with the land, particularly amongst younger generations (Ford, 2009; Healey et al., 2011). Since climate change is compounding existing health issues in Inuit communities, numerous studies have documented the observed environmental changes across Inuit regions, determined how climate change is impacting the country food system and Inuit food security, and assessed the adaptive capacities of Inuit communities to respond to these changes (Ford, 2009; Ford et al., 2010; Furgal & Seguin, 2006; Pearce et al., 2010).

Recent research addressing climate change and food security in Inuit communities has typically focused on supporting Inuit community adaptation and resilience to climate change by listening to local needs, building on local strengths, and utilizing traditional knowledge (Rosol et al., 2016; McClymont Peace & Myers, 2012; Wesche & Chan, 2010). This approach is grounded in the belief that Inuit must take a leadership role in directing local climate change adaptation and food security planning to promote Inuit food sovereignty and self-determination, creating sustainable and culturally appropriate solutions to address the double burden of climate change and food insecurity in Inuit communities.

1.4.3 Country Food Dietary Messaging and Risk Communication in Canadian Inuit Communities

Research addressing dietary messaging in Canadian Inuit communities has predominantly adopted an environmental contaminants lens, focusing on measuring and communicating the risks of dietary exposure to contaminants through the consumption of country foods by Inuit rather than describing communication approaches and messages (AMAP, 2015; Krummel & Gilman, 2016). *Health risk communication* is a prominent type of risk communication comprising "messages and advice designed to reduce harm and to maintain and improve health, delivered in a culturally and socially respectful manner" (AMAP, 2015, p. 111; Krummel & Gilman, 2016). Relatedly, *food safety risk communication* is "the exchange of information and opinions among people about the risks and risk-

related factors associated with food safety hazards and risks" to protect the health of people, animals, plants and the environment as well as people's quality of life, including socio-economic and psychological factors (Food and Agriculture Organization of the United Nations [FAO], 2016, p. 7). The primary goal of food safety risk communication is to protect people's health from food safety risks by providing information about both the benefits and risks of foods to promote informed decision making (FAO, 2016). The predominant health risk communication focus within the realm of country food dietary messaging in Inuit communities has been prompted by elevated concentrations of certain environmental contaminants (e.g., Persistent Organic Pollutants and mercury) in Arctic environments resulting from global contaminant emissions and impacts of climate change on contaminant pathways, which subsequently bioaccumulate in plants and animals that comprise the traditional diet of Inuit residing in these regions (AMAP, 2016; 2021; Furgal et al., 2005). In particular, the long-range transport of contaminants (including pesticides, heavy metals, and radionuclides) into Arctic environments has garnered increasing attention in recent decades due to the potential risks that such environmental contaminants may pose to Inuit peoples' health and well-being (Furgal et al., 2005; Lemire et al., 2015). For example, since contaminant levels of polychlorinated biphenyls and mercury are typically elevated in marine mammal fat and Inuit traditionally rely on this fat for physical, mental, spiritual, economic and social health, contaminants threaten Inuit food security and Inuit holistic health (Furgal et al., 2005; Lemire et al., 2015).

This balance between the health risks and benefits associated with the consumption of country foods—termed the *Arctic Dilemma*—is the central focus of country food health risk communication research today (Furgal et al., 2005; Krummel & Gilman, 2016; Lemire et al., 2015). It is currently acknowledged that risk communication activities addressing human exposure to environmental contaminants from country foods in the Arctic need to balance informing the public about risk while minimizing the adverse impacts that such dietary messages can have on Inuit people's physical, cultural, and socio-economic well-being (Donaldson et al., 2010). This perspective stems from the lessons learned during past research communications about contaminants to Inuit communities.

Since the 1970s, researchers have sought to understand and quantify Inuit peoples' exposure to contaminants through their consumption of country foods to advise which foods are the safest to consume (Furgal et al., 2005; Krummel & Gilman, 2016). Unfortunately, the legacy of research addressing contaminants, country foods, and health in Inuit communities over the past 50 years has been occasionally tainted by poor risk communication of academic study findings (Donaldson et al., 2010; Furgal et al., 2005). Messages lacking local and cultural input unnecessarily provoked fear, anxiety, and eroded confidence in the safety of country foods among Inuit, resulting in adverse and lasting impacts on

residents' perceptions of the quality and safety of country foods, their dietary choices, and their physical, mental, cultural, and socio-economic health (Donaldson et al., 2010; Furgal et al., 2005). The health-damaging impacts resulting from the dissemination of these study findings highlighted the importance of considering how dietary messaging addressing the risks of country food consumption are developed and disseminated to the public (AMAP, 2015). To date most research addressing human exposure to contaminants in country foods in Inuit Nunangat continues to focus on identifying, monitoring, and assessing the effects of exposure to contaminants via the consumption of country foods to answer the public's question "is my food safe to eat?", whereas much less research has examined how to effectively develop, disseminate, and evaluate risk messages about country food consumption (AMAP, 2015; Boyd & Furgal, 2019; Donaldson et al., 2010; Furgal & Rochette, 2007; Krummel & Gilman, 2016). Further, recommendations for risk communication have typically resulted from discussions or recommendations arising from contaminant studies, not risk communication studies per se (AMAP, 2015).

Of the studies directly addressing effective environmental health risk communication strategies in the Arctic, Boyd and Furgal (2019) conducted a scoping review to describe factors affecting effective communication of environmental health risks to Indigenous populations. The authors describe the importance of attending to language-based, geographic, socio-demographic, and cultural factors when developing messages as well as factors influencing communication design and delivery, such as engaging with and including communities throughout the communication process; using trusted spokespeople (e.g., Elders and community leaders) in message dissemination; using effective communication materials; and tailoring messages to regions and communities (Boyd & Furgal, 2019). Reflecting these recommendations, previous Arctic environmental health risk communication studies have demonstrated that effective messaging must be tailored to and developed in partnership with communities, grounded in cultural and community knowledge, skills, values and worldviews; and involve positive messages (AMAP 2015, 2021; Judd et al., 2005; Krummel & Gilman, 2016). Guided by these study findings, our project characterizes dietary message communication strategies in Inuit communities and determines if and how communities desire to be engaged throughout the communication process. Importantly, none of the previous studies have described processes of developing messages about the health risks and benefits of both country *and* store-bought foods, examined residents' awareness of messages and the process of developing and disseminating messages concurrently, or addressed best practices for developing regionally and locally-tailored messaging. In addition to country food risk communications, Inuit-specific country food nutrition resources have been developed by health departments in Canada such as the Government of Nunavut's 2005 *"Nutrition Fact Sheet Series - Inuit Traditional Foods"*, promoting the consumption and use of country foods, educating the public about the nutritional benefits of country foods, and encouraging safe and traditional preparation methods (Government of Nunavut, 2012).

However, no studies have examined how these Inuit-tailored dietary messages were developed and by whom, nor have they evaluated the public's reception of these messages. Our work aims to fill these gaps in knowledge, extending our knowledge of dietary messaging communication strategies in Inuit communities (Boyd & Furgal, 2019; Furgal et al., 2005).

1.4.4 Store-Bought Food Dietary Messaging in Canadian Inuit Communities

Insufficient research addressing store-bought food messaging in Canadian Inuit communities has been conducted given the predominant focus of environmental health risk communication and country foods. Although it is known that country foods are the primary exposure route of contaminants for Inuit, it is apparent that risk communication (and more broadly, dietary messaging) research has typically excluded store-bought foods from this discussion (Kinloch et al., 1992). This historically narrow focus on dietary messaging research addressing environmental health risk communication as a final step of the study rather than a study in and of itself, or focusing solely on country foods, presents a major oversight as it does not accurately reflect contemporary Inuit diets. Specifically, the predominant exclusion of store-bought foods from environmental health risk communication research sends the message that country foods are unhealthy and dangerous to eat, and conversely, that store-bought foods are healthy or of low risk to Inuit health. On the contrary, it is well established that store-bought foods are typically the primary source of dietary calories consumed in Inuit communities and highly processed, shelf-stable, non-nutrient dense store-bought foods—the most affordable foods in remote, northern Indigenous communities—pose significant risks to human health, including higher risk of chronic disease (Blanchet & Rochette, 2008; Egeland et al., 2010; Fillion et al., 2014; Kuhnlein et al., 2004). Furthermore, although it is known that store-bought foods can also be a source of dietary exposure to contaminants, this research focuses rarely on northern Indigenous communities (Darnerud et al., 2005; Fillion et al., 2014).

Thus, research acknowledging and characterizing store-bought food dietary messaging in Inuit communities is needed given that store-bought foods are an increasingly important part of contemporary Inuit diets, providing both risks and benefits to human health. Reflecting the main purpose of this thesis, it is clear that little is known about store-bought food dietary messaging in the Arctic, and even less is known in Inuit Nunangat. In fact, a literature review conducted broadly on the topic of dietary messaging (including dietary guidelines, nutrition guidelines, nutrition communication, dietary recommendations, nutrition recommendations or food-based dietary guidelines) and store-bought foods in Inuit communities, both within and beyond Canada, reveals a significant knowledge gap in this field of study. Of the few studies indirectly addressing dietary messaging in Inuit communities, Jeppesen et al. (2011) described past and present *food-based dietary guidelines*, nutrition recommendations for a healthy diet, in

the circumpolar countries. Specific to Canadian Inuit, Jeppesen et al. (2011) cited the "*Canada's Food Guide*, *Eating Well with Canada's Food Guide: First Nations, Inuit and Métis",* as previously described. Although Jeppesen et al. (2011) referred to sources of food-based dietary guidelines for store-bought foods, they did not present broader store-bought food dietary messages, nor did they discuss how the food-based dietary guidelines were developed or disseminated.

Further, of the studies addressing dietary messaging and store-bought foods in Canadian Inuit communities, the authors addressed the topic indirectly by describing and evaluating dietary intervention programs promoting healthy eating. Although such programs provided dietary messaging to the public, these studies did not describe or evaluate the messages. For example, Kolahdooz et al. (2014) evaluated an Inuit dietary intervention program called "*Healthy Foods North"*. This program aimed to reduce Inuit peoples' consumption of non-nutrient dense foods and beverages, discourage their use of unhealthy food preparation methods, and encourage increased consumption of country foods and nutrient-dense store-bought foods (Kolahdooz et al., 2014; Sharma et al., 2010). This study confirmed that store-bought food dietary messages were communicated in Canadian Inuit communities through dietary programs, yet it remains unknown how these messages were developed, what they addressed, and whether they were effective, providing impetus for the present study (Kolahdooz et al., 2014; Sharma et al., 2010).

Since a paucity of literature characterizing dietary messaging about country and store-bought foods in Inuit communities exist, research is greatly needed on this topic to shift the focus away from communications solely addressing country food health risks towards a broader perspective of dietary messaging, acknowledging and investigating dietary messaging about country *and* store-bought food choices and activities in Inuit communities.

1.5 Dietary Messaging in the NWT

This section will provide an account of the clear and significant gap in the literature regarding the characterization of country and store-bought food dietary messaging in the NWT and highlight gaps in previous studies which the present study seeks to build upon.

1.5.1 Country Food Messaging in the NWT

In the NWT very little research examining risk communication and risk perception of contaminants in country foods has been conducted, and no studies have characterized dietary messages about country and store-bought foods. Ratelle et al. (2018) conducted a human biomonitoring study in the Dehcho and Sahtú regions, including a health communication and risk perception survey (called the Health Messages Survey) to evaluate the public's awareness of health messages on contaminants in their

country foods, their perception of risk related to contaminant exposure through the consumption of country foods, and their preferences for receiving this information. This study demonstrated that 98% of respondents reported consuming country foods, 89% had heard messages promoting the nutritional benefits of country foods, and 59% were concerned about the quality and safety of country foods (Ratelle et al., 2018). Further, as described by Brandow (2018), results from the Health Messages Survey established that respondents preferred receiving country food risk communication messages via the radio, TV, social media and trusted friends, relatives, and Elders. Brandow (2018) recommended several best practices for communicating risk messages to the public in the Sahtú, including involving communities during message development, incorporating Indigenous and local community knowledge into messages, and using trusted sources when disseminating messages. Findings from these studies support the need for balanced messaging about country foods and engagement of communities during message development and dissemination, which the present study builds upon (Brandow, 2018; Ratelle et al., 2018). However, preferences for collaborations and methods of incorporating and communicating Indigenous and local knowledge in messaging remains unknown. Further, given the exclusive focus on country food risk messaging, studies addressing dietary messaging broadly (including both country and store-bought foods) are greatly needed, especially across all regions of the NWT.

The GNWT DHSS *"NWT Traditional Food Fact Sheet Series"* is a prominent example of dietary messaging in the NWT, promoting increased knowledge about the nutritional benefits of consuming traditional foods, safe preparation practices, and traditional uses (GNWT, n.d.-a). Although it was mentioned by Jeppesen et al. (2011) as an example of food-based dietary guidelines in the NWT, it remains unexplored how these fact sheets were developed, by whom, and how Indigenous knowledge was collected to inform the messages. Similarly, the GNWT DHSS released two resources addressing the health benefits and risks of consuming fish ("*The Health Effects of Mercury in Fish"* and "*General NWT Fish Consumption Guidelines"*) and several resources addressing contaminant risks in country foods (*"Contaminants Fact Sheets"* for country foods and *"Site Specific Fish Consumption Notices"*) (GNWT, 2021b). Brandow (2018) characterized the development and communication of country food consumption notices by the GNWT for the Sahtú Region of the NWT. The study provided important insights regarding residents' awareness of country food contaminant messaging, preferred methods of disseminating messages (local radio, social media), and trusted communicators of messages (friends and relatives, researchers, and health workers) in the Sahtú Region (Brandow, 2018). Notably, Brandow (2018) encouraged researchers and the GNWT to develop more culturally appropriate and regionally tailored contaminant messages in partnership with communities to ensure they are more relevant and better received by the public. Further, Brandow (2018) called for the creation of country food contaminant messaging informed by Indigenous and local community knowledge, promoting increased trust in

messaging. Building on these findings from the Sahtú Region, this study examines both country and store-bought food dietary messaging in the ISR and explores best methods for the development and communication of culturally relevant, regionally tailored dietary messaging in the region.

1.5.2 Store-Bought Food Messaging in the NWT

No previous study has sought to characterize store-bought food dietary messaging in the NWT. Addressing dietary messaging broadly through the examination of food-based dietary guidelines, Jeppesen et al. (2011) refer to the 1988 *"Northwest Territories Food Guide"* developed by the Government of the Northwest Territories (GNWT) Department of Health and Social Services (DHSS). The *NWT Food Guide* includes both country and store-bought foods and was revised in 2005 to incorporate recommended serving sizes, however it is no longer in use (Jeppesen et al., 2011). The GNWT DHSS developed several online resources to educate the public about the nutritional health benefits and risks of store-bought foods, including "*How Much Sugar is in Your Drink?"*, *"Vegetable Food Fact Sheets"*, and *"Healthy Eating and Weight Management Guide"* (GNWT, 2021a). Although it is known that these dietary messages are communicated to the public in the NWT by the GNWT DHSS, no studies have characterized their development and dissemination, determined the public's awareness of these messages, or evaluated their effectiveness in initiating dietary change.

1.6 Dietary Messaging in the ISR

Given this study's focus on the ISR, *dietary messaging* is defined as information and advice addressing the health benefits and/or risks associated with diet-related choices, behaviours and activities involving Inuvialuit country and/or store-bought foods (including growing, harvesting, buying, bartering, preserving, storing, preparing, cooking, consuming, and sharing food), communicated by territorial, regional and/or local dietary message disseminators (e.g., public health professionals, allied health professionals, government health representatives, academic researchers, nutrition and food program coordinators, and country food knowledge holders) to residents of the ISR in the goal of reducing harm and maintaining and improving health. This section will review the current state of understanding and gaps in knowledge about dietary messaging in the ISR and culture-centered dietary messaging, leading to the thesis research objectives and questions.

1.6.1 Country Food Messaging in the ISR

Regarding country food dietary messaging in the ISR, a risk communication study was led by Reinfort (2015) in Sachs Harbour describing residents' risk perception of country foods and best methods

of communicating contaminant findings. The study found that respect, time and relationships impacted residents' perceptions of communication processes and researchers, thereby influencing perceptions of contaminants (Reinfort, 2015). Further, the study noted that using desired communication methods was important, especially the use of social media, radio, TV, magazines and informal communications (e.g., visiting) (Reinfort, 2015). In addition, it is known that dietary messages about country foods are disseminated via food programs in the ISR, such as the *"Country Food Processing Methods Training Course"* offered by Aurora College and the IRC, teaching knowledge and skills for processing country foods (Kenny et al., 2018). Building on these study findings, it is apparent that studies aiming to characterize and evaluate the effectiveness of dietary messages are especially needed in the ISR. Since no previous study has characterized country food dietary messaging in the Arctic, NWT, or ISR beyond the topic of contaminants communication, research investigating what dietary messages are being communicated about the health benefits and risks associated with all diet-related choices and activities involving country *and* store-bought foods, how these messages are being developed and disseminated, and by whom, is greatly needed to promote Inuvialuit food security and socio-cultural health.

1.6.2 Store-Bought Food Messaging in the ISR

Similar to the state of knowledge at the territorial level, no studies have addressed dietary messaging in the ISR. In fact, very little is known about nutrition communication generally in the ISR. Kenny et al. (2018) summarized food security initiatives in the ISR, including nutritional education programs (e.g., cooking circles and workshops) led by hired community members through Nutrition North Canada, the Canada Prenatal Nutrition Program, and the Healthy Family Program; school nutrition education programs; and the GNWT DHSS *"Drop the Pop NWT"* campaign promoting healthy food and beverage choices (Kenny et al., 2018). Further, the *"Beaufort Delta Small Scale Foods Program"* offers information and skills seminars, such as food preservation (Kenny et al., 2018). Therefore, while it is clear that dietary messages about store-bought foods are being communicated to the public in the ISR via federal, territorial and regional food programs and initiatives, there is a need to characterize the messages themselves. This will help to understand what the messages are about, how they are developed and communicated, and by whom, which the present study seeks to address. Finally, the lack of an ISR-specific food guide or food fact sheet highlights the need for research addressing regionally tailored dietary messaging.

1.6.3 Culture-Centered Dietary Messaging

It is well recognized that health communication is most effective when tailored to the characteristics, values, beliefs, and experiences of a culture (Boyd & Furgal, 2019; Dutta-Bergman, 2007, 2016; Krummel & Gilman, 2016; Mayfield, 2020). Further, there are increasing calls for health communication efforts to shift away from a top-down model of information delivery towards a more participatory communication approach, grounded in local culture (AMAP, 2015; Dutta-Bergman, 2016). This *'culture-centered approach'* helps empower communities and improve the effectiveness of the communication effort to initiate behaviour change (Dutta-Bergman, 2016). Specifically, a 'culture-centered approach' to health communication places "culture at the core of health communication practices" and engages with cultural members to "create spaces for marginalized cultural voices", employing participatory communication methodologies (Dutta-Bergman, 2005, pp. 304-305). In contrast, a 'culturally sensitive approach' aims to tailor existing health messages to the culture of the target audience (Dutta-Bergman, 2005).

Mayfield (2020) explains that effective nutrition communication results from collaboration with the target culture and describes strategies for culture centered nutrition communication. For example, Mayfield (2020) recommends establishing a network of cultural informants with members of the target population (e.g., trusted community health representatives and Indigenous community leaders); collaborating to identify food and nutrition issues and health risks and developing communication strategies to address them; using communication strategies and messages that are culturally appropriate and relevant to the local culture; testing messages and gathering feedback; and evaluating messages. Most importantly, Mayfield (2020, p. 207) underlines that effective culture-centered nutrition communication results from building trusted relationships and cultural competence ("readiness to communicate and function effectively with a target culture that may have different values, attitudes, and norms from one's own"). Simply put, "communication is more than a message; it is a relational activity" (Mayfield, 2020, p. 13).

Arctic risk communication studies have shown that Indigenous peoples need to be involved in research and risk communication efforts addressing the benefits and risks of both country and store-bought foods (AMAP, 2015). Furthermore, risk communication needs to be developed in collaboration with affected communities to ensure culturally appropriate and locally tailored methods are employed (AMAP, 2015). Krummel & Gilman (2016) explain the importance of Inuit participation in developing risk communication messages, and communication and trust between all involved entities to optimize risk communication in the Arctic. Although it is well recognized that risk communication messages are most

effective when they are "tailored to specific cultural or demographic groups" (i.e., a culturally sensitive approach), providing culturally appropriate information and advice that accounts for social, economic, cultural and health factors, more studies are needed which address community collaborations to co-develop culturally relevant messages (i.e., a culture-centered approach) (AMAP, 2015; Dutta-Bergman, 2005; Krummel & Gilman, 2016, p. 10).

Despite the call for increased inclusion of Inuit perspectives during the development of risk communication initiatives, it remains unknown whether involvement in the co-development of culture-centered dietary messages is desired by territorial, regional and local dietary message disseminators in the NWT and if so, what this process should look like in the ISR. Furthermore, there is a notable lack of attention directed towards how Inuit knowledge should be utilized during the development of risk communication initiatives, and more particularly, the development of dietary messaging. Furgal et al. (2005) explain that Inuit knowledge systems differ from Western knowledge systems and thus must be understood when developing risk communication messages in Arctic communities. Given that Furgal et al. (2005) recommend incorporating local understandings and knowledge of food in risk communication messages to improve the reception of messages in Inuit communities, there is a need to examine how local perspectives and Inuit knowledge be incorporated into future public health dietary messaging for the ISR in a collaborative manner. Thus, an understanding of how dietary messages can be co-developed with territorial, regional and local dietary message disseminators, incorporating Inuvialuit knowledge in dietary messaging for the ISR in a respectful and culturally appropriate manner, is needed to promote participatory and culture-centered messaging in the ISR.

1.7 Food Security, Insecurity and Sovereignty in Inuit and ISR Communities

1.7.1 Food Security

Food security "exists when all people, at all times, have physical, social, and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2009a, p. 8). This Western conceptualization of food security has been criticized for failing to acknowledge Indigenous food systems and food practices (Elliott et al., 2012; Power, 2008). As a result, definitions of food security grounded in Indigenous cultures and food systems have been created by Indigenous peoples, including Inuit across the Arctic. *Inuit food security* acknowledges the importance of Inuit-specific cultures, values, and worldviews, and the inextricable connections between Inuit food systems and Inuit cultural vitality, identity, and health (Inuit Circumpolar Council Alaska [ICC], 2020). The ICC (2020, p.17) defines Inuit food security as:

The natural right of all Inuit to be part of the ecosystem, to access food and to care-take, protect and respect all of life, land, water, and air. It allows for all Inuit to obtain, process, store, and consume sufficient amounts of healthy, nutritious, and preferred food – foods Inuit physically and spiritually crave and need from the land, air, and water. These foods provide for families and future generations through the practice of Inuit customs and spirituality, languages, knowledge, policies, management practices, and self-governance. It includes the responsibility and ability to pass on knowledge to younger generations, the taste of traditional foods rooted in place and season, knowledge of how to safely obtain and prepare traditional foods for medicinal use, clothing, housing, nutrients and, overall, how to be within one's environment. It means understanding that food is a lifeline and a connection between the past and today's self and cultural identity.

1.7.2 Food Insecurity

In contrast to food security, *food insecurity* "is an outcome of inadequate or uncertain access to an acceptable amount and quality of healthy food. It refers to the immediate inability to secure an adequate diet, as well as the risk of being unable to do so in the future" (CCA, 2014, p. xxv). Extensive research has been conducted on the topic of food insecurity in Indigenous communities in Canada (Reading & Wien, 2009; Skinner et al., 2013), particularly in Inuit Nunangat due to the disproportionately high rates of food insecurity experienced in these regions (Blanchet & Rochette, 2008; Chan et al., 2006; Egeland et al., 2011; Ford & Beaumier, 2011; Ford & Berrang-Ford, 2009; Huet et al., 2012; ITK, 2021). Inuit communities in Canada are facing a food insecurity crisis: according to the Canadian International Polar Year (IPY) Inuit Health Survey, between 2007-2008 62.2% of the 1,901 surveyed Inuit households were food insecure, with 27.2% being severely food insecure in comparison to the national household average of 7.7% (CCA, 2014). In the Inuvialuit Settlement Region (ISR) of the NWT, 43% of households were food insecure (ITK, 2014; Rosol et al., 2011). Food insecurity is most pronounced in northern Indigenous communities due to the considerably higher rates of socioeconomic disadvantage and resulting health disparities, largely caused by the historical and ongoing impacts of colonial laws and structures intending to sever Indigenous peoples' connections to their lands, cultures, and knowledge systems (CCA, 2014; Greenwood et al., 2015; Reading & Wien, 2009). Food insecurity, namely the inability to access and/or afford adequate nutritious food, is often a critical barrier faced by Inuit when making food choices. Therefore, it is imperative that dietary messages acknowledge local socio-economic and environmental barriers to making healthy, safe and culturally appropriate food choices (Willows, 2005).

1.7.3 Food Sovereignty

Extending from the concept of food security, *food sovereignty* is "the right of people to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture system" (Nyéléni, 2007, p. 9). The premise of food sovereignty is to promote people's access to sustainable, culturally suitable food systems, and the right for

people to freely define their own food policies (FAO, 2009b). This concept aligns well with Indigenous values and food systems and has gained particular support from many Indigenous populations around the globe through the related concepts of *Indigenous food sovereignty* (IFS). Numerous IFS definitions exist and Settee and Shukla (2020) recommend Indigenous communities define this concept themselves. The authors describe IFS as "inherently assert[ing] Indigenous Peoples' self-determination of their own culturally suitable food systems and promot[ing] revitalization of Indigenous food systems of diverse Indigenous groups… it is based on the Indigenous worldview that perceives the land and food as alive and sacred" (Settee & Shukla, 2020, p. 4).

1.7.4 Inuit Food Sovereignty and Dietary Messaging

Specific to the present study population, *Inuit food sovereignty* is defined as "the right of all Inuit to define their own hunting, gathering, fishing, land, and water policies; the right to define what is sustainably, socially, economically, and culturally appropriate for the distribution of food and to maintain ecological health; and the right to obtain and maintain practices that ensure access to tools needed to obtain, process, store, and consume traditional foods" (ICC, 2020, p. 17). There is increasing recognition of the importance of food security programs and strategies grounded in the principles of food sovereignty to improve Indigenous and Inuit food security in the long-term (Morrison, 2011; Settee & Shukla, 2020; Skinner et al., 2018). Notably, it is only through the assertion of Inuit self-determination and revitalization of Inuit food systems that the food insecurity crisis in Canadian Inuit communities can be effectively addressed (Settee & Shukla, 2020).

It is well documented that Inuit communities across Inuit Nunangat disproportionately experience food insecurity, which increasingly challenges Inuit physical, mental, spiritual, cultural and socio-economic health (Blanchet & Rochette, 2008; Egeland et al., 2010; Fillion et al., 2014; Sheehy et al., 2015). A large and growing body of literature has established that Inuit are undergoing rapid lifestyle and dietary changes; many Inuit are experiencing disconcertingly high rates of chronic diseases, are consuming less nutritious and culturally significant country foods, and are consuming more unhealthy, non-nutrient dense store-bought foods (CCA, 2014; Egeland et al., 2011; Kuhnlein et al., 2004; Little et al., 2020). It is for this reason that locally tailored, culture centered dietary messages developed in collaboration with communities can play an important role in supporting Inuit food security and sovereignty by promoting increased awareness and consumption of healthy, safe and culturally relevant foods while addressing socio-economic, behavioural and environmental barriers (Willows, 2005).

1.8 Project Context

This project is situated within two larger community-based research projects presently underway in the ISR: (1) *"Country Foods for Good Health (CFGH): Developing a Country Food Database for the Inuvialuit Settlement Region"* (2020-2022), funded by the Northern Contaminants Program and (2) *"Community Capacity for Climate Change and Food Security (C4FS) Action in the Northwest Territories"* (2019-2024), funded by the Canadian Institutes of Health Research. The CFGH project was developed through consultation with northern community partners in 2018 and seeks to address the health risks and benefits for country food consumption in Tuktoyaktuk and Paulatuk, NWT. The C4FS project was informed by community food security needs and engages six communities across the NWT (including Tuktoyaktuk and Paulatuk in the ISR), regional and territorial partners, and a multidisciplinary team of academic researchers to strengthen community capacity to plan for and deal with food security issues in the face of climate change.

The COVID-19 public health and university restrictions greatly influenced this project given my inability to conduct in-person research activities in Tuktoyaktuk following March 2020. I significantly adapted and modified my research methods in accordance with evolving public health guidelines, resulting in the hiring and training of a Tuktoyaktuk community researcher in the spring of 2021 to lead in-person interviews, described further in section 2.6.2.

1.8.1 Study Setting

This project focuses on the Inuvialuit Settlement Region (ISR) in the Beaufort-Delta region of the NWT (see Figure 5), the land of the Inuvialuit (the Inuit of Canada's western Arctic) (IRC, 2021; ITK, 2021). The ISR is one of the four Inuit regions in Canada, which collectively comprise the 'Inuit Nunangat' (IRC, 2021; ITK, 2021).

Figure 5: Map of Inuit Nunangat, the Canadian traditional homelands of the Inuit. Inuit Nunangat is comprised of the Inuvialuit Settlement Region (Northwest Territories), Nunavut, Nunavik (northern Québec), and Nunatsiavut (northern Labrador) (ITK, 2021)

Present-day governance and policy-making in the ISR is largely influenced by the terms stipulated in the 1984 Inuvialuit Final Agreement (IFA), the first comprehensive land claim agreement signed north of the 60th parallel, recognizing Inuvialuit ownership over 91,000 km^2 of land and wildlife harvesting rights across the IFA settlement area (IRC, 2018; Wilson et al., 2020). The IFA did not include self-government, and thus no formal Inuvialuit government exists today; political authority in the ISR is administered by the Government of Canada and the GNWT (Wilson et al., 2020). Thus, the Crown oversees roads and transportation, lawmaking and enforcement, healthcare, and education in the ISR (Wilson et al., 2020). However, after the signing of the IFA, the Inuvialuit Regional Corporation (IRC) and the Inuvialuit Game Council (IGC) were created, acting as the two main land claim bodies (Wilson et al., 2020). Local leadership is provided by the six Community Corporations (one for each of the ISR communities), which administer local issues and concerns, receive and spend money for community purposes, and establish membership of the Hunters and Trappers Committees in each of the six ISR communities (Wilson et al., 2020). This project directs its attention to the Inuvialuit hamlet of Tuktoyaktuk (the anglicized form of Tuktuuyaqtuuq in Inuvialuktun, meaning “place resembling a caribou”), located in the northwestern region of the NWT on the coast of the Beaufort Sea (See Figure 6) (Hamlet of Tuktoyaktuk, 2020; IRC, 2020) given its involvement with the CFGH and C4FS projects and timing of project activities underway.

In 2018, the population of Tuktoyaktuk was 982, with 898 Aboriginal residents (91%) and 84 non-Aboriginal residents (9%) (GNWT, 2020).

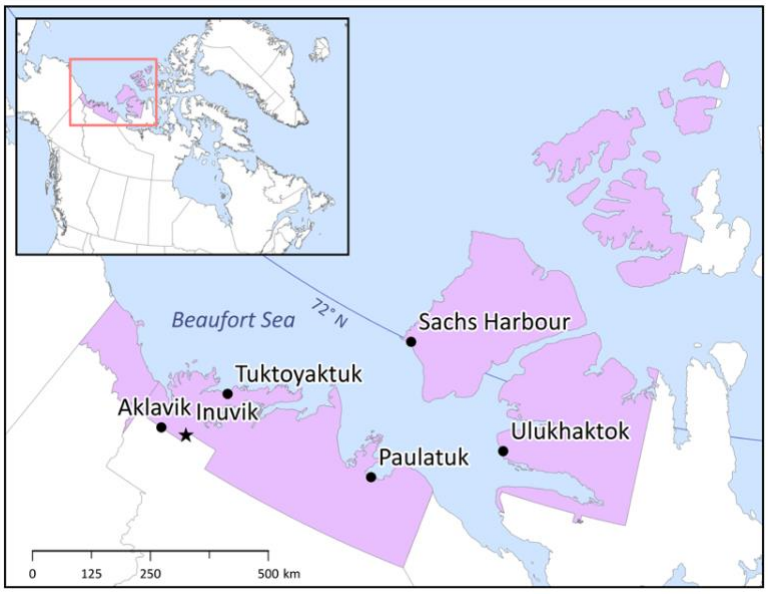

Figure 6: Map of the six Inuvialuit Settlement Region communities in the Northwest Territories (NWT), including Tuktoyaktuk and Paulatuk. (Map created by Sarah Simpkin; Map data from Natural Resources Canada (2016), licensed under the Open Government Licence – Canada as cited in Kenny et al. 2018)

Study 1

Study 1 emerged from my work on the CFGH project during Spring 2020, conducting key informant interviews for Dr. Sonja Ostertag with NWT and ISR health professionals, government employees, and community nutrition and food program coordinators to characterize dietary messages in the ISR. The goal of these interviews was to inform Dr. Ostertag's development of the Inuvialuit Food Messages Survey to identify community members' awareness and understanding of current health messages on country foods and store-bought foods. The CFGH term 'health messaging' was broadened to 'dietary messaging' given the interest in understanding all messages relating to food and dietary choices and activities, extending beyond food safety risk communication.

Study 2

Study 2 was informed by the findings of the CFGH key informant interviews (Study 1) and bridges the CFGH and C4FS projects. A Tuktoyaktuk community researcher conducted storytelling and talking circle interviews with local country food knowledge holders, public health dietary message disseminators, and community members between June-July 2021. Follow-up key informant interviews were conducted with

territorial and reginoal dietary message disseminators in June 2021. This study incorporated the C4FS themes of traditional knowledge and food system adaptation and resiliency to climate change while addressing gaps noted in Study 1, particularly the need to address climate change as an important determinant of food security in the ISR, acknowledging local country food knowledge holders as dietary message disseminators, framing Inuvialuit knowledge as dietary messages, and examining culturally meaningful and locally tailored dietary messaging.

1.9 Rationale

It is well documented that Inuit residing in Inuit Nunangat disproportionately experience food insecurity and impacts of climate change, which increasingly challenge Inuit food security, physical, mental, spiritual, cultural and socio-economic health. A large and growing body of literature has established that Inuit are undergoing rapid lifestyle and dietary changes; many Inuit are experiencing disconcertingly high rates of chronic diseases, are consuming less nutritious and culturally significant country foods, and are consuming more unhealthy, non-nutrient dense store-bought foods. Furthermore, elevated concentrations of certain environmental contaminants in Inuit Nunangat represent a concerning source of dietary exposure to contaminants through country food consumption. Since country and store-bought foods confer both health benefits and risks to Inuit, it is imperative that dietary messages encouraging healthy and safe food choices and activities are evidence-informed and culturally appropriate so not to cause unnecessary fear and worsen diet-related health issues. There is a paucity of qualitative research describing how dietary messaging about the benefits and risks of country and store-bought foods is currently developed and disseminated in the Arctic, particularly in the NWT and ISR. Furthermore, there is a need to address collaborative and culturally relevant approaches to dietary messaging between territorial, regional and local dietary message disseminators, researchers and country food knowledge holders in the ISR. Building on these current knowledge gaps and long-term research relationships with the Inuvialuit communities of Tuktoyaktuk and Paulatuk, this research contributes valuable knowledge to developing and communicating regionally and locally tailored, culturally meaningful messaging in the ISR and NWT.

1.10 Research Questions and Objectives

Research Questions:

This research aims to answer the following questions:

1. What are the characteristics of current public health dietary messages that guide food choice in the Inuvialuit Settlement Region (ISR)? (Study 1)

2. How can the perspectives and Inuvialuit knowledge of territorial, regional, and local public health dietary message disseminators, local country food knowledge holders, and the public inform the co-development of culture-centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT? (Study 2)

The specific objectives of this thesis are:

1. To understand who currently develops and disseminates dietary messages, what the messages address, how these messages are developed and disseminated to ISR communities, and gaps in current messaging, from the perspectives of territorial, regional and local key informants, to inform the development of the Inuvialuit Food Messages Survey for the ISR.

2. To identify how territorial, regional and local public health dietary message disseminators, local country food knowledge holders, and the public in Tuktoyaktuk can co-develop culture-centered dietary messaging to more effectively promote healthy, safe and culturally appropriate diets in the community.

3. To provide recommendations to territorial, regional and local dietary message developers and disseminators to further improve dietary messaging in the ISR.

1.11 Summary of Manuscripts and Contributions

The research described in this thesis is presented as two co-authored manuscripts (see Statement of Contributions). Chapter 3 presents a manuscript addressing the following research question: *What are the characteristics of current public health dietary messages that guide food choice in the Inuvialuit Settlement Region (ISR)?* This study is based on in-person and telephone key informant interview data from health professionals, government employees, and community nutrition/food program coordinators located in Inuvik, Tuktoyaktuk, Paulatuk, and Yellowknife, NWT. Findings describe who currently develops and disseminates dietary messages, what the messages address, how these messages are developed and disseminated to ISR communities, and gaps in current messaging, informing the development of the Inuvialuit Food Messages Survey. This work highlights the need to improve collaborations between Inuvialuit country food knowledge holders, researchers, and public health dietary message disseminators at all scales to develop more locally tailored and culturally relevant messaging in the ISR.

Chapter 4 presents a manuscript addressing the following research question: *How can the perspectives and Inuvialuit knowledge of territorial, regional, and local public health dietary message disseminators, local country food knowledge holders, and the public inform the co-development of culture-centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT?* This study draws on 1) in-person storytelling interviews with Tuktoyaktuk country food knowledge holders, community members, and a talking circle with local public health dietary message disseminators, led by Kanelsa Noksana, an Inuvialuk community researcher; and 2) follow-up key informant telephone interviews with territorial and regional dietary message disseminators, led by myself, building on my findings from Study 1 (see Figure 7 for a summary of Study 1 and Study 2 research methods).

Figure 7: Summary of Study 1 and Study 2 research methods employed, guided by an Indigenous research paradigm

This work provides novel insights as to how territorial, regional and local public health dietary message disseminators, local country food knowledge holders, and the public in Tuktoyaktuk can co-develop culture-centered dietary messaging to more effectively promote healthy, safe and culturally appropriate diets in the community.

Both manuscripts explore the current state of dietary messaging in the ISR and present recommendations for collaborative, decolonizing, and community-led approaches to health communication about food grounded in Inuvialuit knowledge and culture, supporting Inuvialuit food sovereignty.

Chapter 2: Methodology and Methods

2.1 Overall Research Design

This study employed a qualitative research design to understand and describe participants' perspectives on the topic of culture-centered dietary messaging in the ISR (Merriam & Tisdell, 2015). It is through a qualitative research design, generating a rich description of the current dietary messaging, collected via key informant interviews, storytelling interviews and a talking circle that we aim to better support Inuvialuit food sovereignty in the ISR. This chapter will describe the research methodology and methods employed throughout Study 1 (Chapter 3) and Study 2 (Chapter 4).

2.2 Theoretical Orientation

2.2.1 Philosophical Assumptions

Philosophical assumptions are stances that a researcher takes, which direct their research studies (Creswell & Poth, 2018). These philosophical assumptions are comprised of four key assumptions: ontological, epistemological, axiological, and methodological (Creswell & Poth, 2018). Thus, a researcher's ontology, epistemology, axiology, and methodology reflect their philosophical assumptions and beliefs which they bring to their research, shaped in part by their lived experiences, education, and worldview (Creswell & Poth, 2018; Wilson, 2008). In turn, these philosophical assumptions inform a researcher's choice of interpretive frameworks, research approaches, and methods utilized in a qualitative study (Creswell & Poth, 2018). I am actively acknowledging my philosophical assumptions that guide this research study in recognition that such assumptions are often deeply ingrained and appear implicitly in writing despite their foundational role in shaping research inquiry (Creswell & Poth, 2018). Philosophical assumptions for this research project are presented in the following section through the introduction of the project's interpretive framework given that philosophical assumptions are applied within interpretive frameworks.

2.2.2 Interpretive Framework: Indigenous Research Paradigm

Interpretive frameworks can be either paradigms—"underlying beliefs and assumptions"—that the researcher brings to a study, or theories or theoretical orientations that guide the research process (Creswell & Poth, 2018; Wilson, 2008, p. 13). An Indigenous research paradigm was utilized as an interpretive framework throughout this project. A research paradigm (also known as a philosophical stance, a conceptual framework, a philosophy, or a worldview) is "a set of metaphysical beliefs, assumptions, concepts, and values that informs the researcher's view of reality, what counts as knowledge, and ways of knowing that guides research priorities, choices, and actions" (Held, 2019, p. 1).

Paradigms are human constructions (they are believed, not proven) and are distinguished by their ontological, epistemological, axiological, and methodological assumptions (Held, 2019).

An Indigenous research paradigm is comprised of Indigenous ontology, epistemology, axiology, and methodology (Wilson, 2008, p.13). This choice is of significance to Indigenous peoples as it promotes the creation of Indigenous theory and methods that align with Indigenous worldviews (Wilson, 2008). Reflecting Wilson's (2008) call for researchers to follow an Indigenous research paradigm throughout all stages of research, this paradigm was utilized as a tool to apply Inuvialuit ethics, values and epistemology in my methodology. Thus, a dominant Western qualitative paradigm taught in graduate research methods courses, such as a constructivist or transformative paradigm, was not chosen since these are rooted in Eurocentric, colonial worldviews and often exclude Indigenous ways of knowing, which do not align with our philosophical assumptions nor with this project's aims (Held, 2019). Rather, this project utilized an Indigenous research paradigm to support the decolonization of Western research and Inuvialuit self-determination of dietary messaging by viewing Indigenous worldviews as equal to Western worldviews (Held, 2019). For example, this project defined dietary messages broadly, including both public health dietary messages and traditional Inuvialuit communications about country foods, supporting both Western scientific and Inuvialuit worldviews and knowledge systems.

Despite the predominant exclusion of an Indigenous research paradigm from descriptions of qualitative research paradigms, increasing efforts have been made by Indigenous and non-Indigenous scholars alike to describe the core philosophical assumptions of an Indigenous research paradigm, legitimizing it as one of the 'major' paradigms (Held, 2019; Kovach, 2009; Smith, 2012; Wilson, 2008). First, Indigenous ontology and epistemology are based upon relationality, meaning that relationships form reality and knowledge is relational, not an individual entity (Wilson, 2008). Relationality is one of the most important features that distinguishes this paradigm from dominant Western paradigms; it includes relations between people, relations between people and their environment/land, relations between people and the cosmos, and relations with ideas (Held 2019; Wilson, 2008). Thus, "reality is not an object but a process of relationships, and an Indigenous ontology is actually the equivalent of an Indigenous epistemology" (Wilson, 2008, p. 73). Thus, by holding the fundamental belief that knowledge is relational, I understand that I am "answerable to *all* [my] relations when [I] do research", meaning all living things must be respected as being related and interconnected (Wilson, 2008, pp. 56-57). This belief epitomized a key tenant of this research: Inuvialuit communities, environments, and food systems are closely entwined and dependent upon each other for good health. In addition to relationality, Indigenous ontology is relativist, meaning there are multiple, socially and historically constructed realities (Held, 2019).

Second, Indigenous axiology and methodology are based upon maintaining relational accountability, meaning that as a researcher I am accountable to the relations I form (Wilson, 2008). To apply relational accountability, and thus relationality, in my research I ensured that my methodology was based in a community context (i.e., it was relational) and demonstrated respect, reciprocity, and responsibility (Wilson, 2008). Indigenous axiology and methodology values being accountable to your relations as a researcher, not the judgement of validity, statistical significance, or worthiness of research as dominant research methodologies do (Wilson, 2008). Indigenous methodology typically uses participatory methodology, located within Indigenous knowledge systems (Held, 2019). The participatory approaches used in this project aligned well with an Indigenous research paradigm as it upheld relationality and relational accountability. This said, a challenge that myself and other Indigenous allies faced was the "lack of guidance and understanding, be it from advisory committees, ethics boards… or granting agencies which are still often biased toward Western research approaches" regarding how to navigate bridging Indigenous and Western research paradigms (Held, 2019, p. 9). Consequently, I utilized an Indigenous research paradigm and a combination of both Western and Indigenous research approaches that best aligned with this paradigm, supporting the decolonization of Western research and Inuvialuit self-determination of local food systems. Throughout my thesis I was grateful to begin learning how to bridge Indigenous and Western research paradigms through conversations with Kanelsa Noksana, the Tuktoyaktuk community researcher with whom I collaborated on Study 2 of this project.

2.3 Qualitative Research Approaches

Qualitative research approaches ('approaches to inquiry', or 'strategies of inquiry') are types of qualitative research studies, informed by the researcher's interpretive frameworks and philosophical assumptions (Creswell & Poth, 2018; Merriam & Tisdell, 2015). Two qualitative research approaches were chosen that best align with an Indigenous research paradigm: Community Based Participatory Research and Decolonizing Research (Creswell & Poth, 2018).

2.3.1 Community Based Participatory Research

Community Based Participatory Research (CBPR) is a collaborative research approach that "equitably involves… community members, organizational representatives, and researchers in all aspects of the research process and in which all partners contribute expertise and share decision making and ownership" (Israel et al., 2012, p. 6). CBPR aims to "increase knowledge and understanding of a given phenomenon and integrate the knowledge gained with interventions and policy and social change to improve the health and quality of life of community members" (Israel et al., 2012, p. 6). Thus, CBPR encourages collaboration with marginalized populations with the goal of reducing or eliminating social

injustices and inequities, identified by the community members themselves (Jull et al., 2017). CBPR views community as a unit of identity, meaning "entities in which people have membership", in this case both the geographical communities in the ISR as well as Inuvialuit in the ISR (Merriam & Tisdell, 2015, pp. 8-9).

CBPR is "grounded in methodologies that challenge privileged access to truth, impartiality, and scientific objectivity" to challenge the historically prominent positivistic qualitative research (Given, 2008). Drawing on the paradigms of critical theory and constructivism, CBPR thus questions what knowledge is and how certain kinds of knowledge represent and reinforce the positions of those who hold power (Baum et al., 2006). It is because of this explicit focus on power relationships, and the advocacy for the 'researched' to be actively involved in the research process, that the CBPR approach has increasingly been utilized in Indigenous health research to decolonize ways of knowing (Baum et al., 2006; Finley, 2008). Indeed, reflecting Indigenous epistemologies, CBPR "create[s] opportunities to challenge assumptions about for whom, how, and what is defined as knowledge" (Jull et al., 2017, p. 1). Using a CBPR approach, community members are equitably involved throughout the research process as desired and their knowledge is legitimized (Jull et al., 2017). This is especially important when conducting research with Indigenous communities, who have historically been exploited and marginalized from the Western research realm, as CBPR promotes research with and by, not on or for, marginalized communities (Jull et al., 2017).

Since the larger CFGH and C4FS projects utilized CBPR approaches, and my research aims and topic aligned with its core principles, I utilized a CBPR approach to enable equitable and socially just development of culture-centered dietary messaging in the ISR. It is through the application of the CBPR approach that I could better reflect on my position and power as a graduate researcher and utilize this power to champion decolonizing research. To do so, I co-led research activities with a community researcher and partnered with territorial and regional dietary message disseminators, ensuring the research was driven by Inuvialuit, for Inuvialuit in a respectful and reciprocal manner. By utilizing a CBPR approach, I used my knowledge and privilege to support Inuvialuit communities to drive research practices, promoting collaborative, decolonizing research grounded in Indigenous epistemologies that built on community strengths to improve dietary messaging in the ISR (Israel et al., 2012). Although it was challenging to conduct CBPR research virtually, the COVID-19 pandemic helped me to better enact CBPR by hiring a community researcher in Tuktoyaktuk, as described later.

2.3.2 Decolonizing Approach

Decolonizing research "is a process of conducting research with Indigenous communities that places Indigenous voices and epistemologies in the center of the research process" (Datta, 2018a, p. 11).

To work towards decolonizing Western research, I utilized a decolonizing approach (Kovach, 2009). A *decolonizing approach* is built upon critical theory, and "is particularly effective in analysing power differences between groups", in this case between myself, other non-Indigenous research partners of settler ancestry and the project's Indigenous research partners (Kovach, 2009, p. 80). This approach questions whether Western scientific research contributes to the oppression and colonization of Indigenous peoples (Martin, 2012). Such an approach "requires that all stages of research critically reflect on *how* questions are asked, *why* they are being asked and by *whom*", thus "the purpose of research becomes more than just the production of new knowledge; it upholds the pedagogical, political, moral and ethical principles that resist oppression and contribute to strategies that reposition research to reflect the unique knowledge, beliefs, and values of Indigenous communities" (Martin, 2012, p. 30). Therefore, through the use of a decolonizing approach, I included Indigenous perspectives and knowledge systems in this project to effectively and meaningfully create change that supported their health (Martin, 2012). Thus, my choice to apply a decolonizing approach throughout my research aligned with my intention to dismantle unequal power relations and support Inuvialuit self-determination, a prerequisite for Inuvialuit food sovereignty and consequently Inuvialuit food security (Held, 2019). Reflecting several Indigenous authors' call to reject a postcolonial approach, I utilized a decolonizing approach since colonialism is still present today: "there is nothing post about it" (Kovach, 2009, p. 76; Smith, 2012; Wilson, 2008). Collaborating with the Tuktoyaktuk community researcher throughout Study 2 enabled me to better enact a decolonizing approach by critically reflecting about my research methods and questions with an Inuvialuk who understood the local culture, values and realities. This collaboration, prompted by the COVID-19 travel restrictions, greatly promoted a decolonizing approach by ensuring I conducted research in partnership with an Inuvialuk community member, thereby placing Inuvialuit worldviews and knowledge systems at the center of the project and guiding the research methods.

2.4 Ethics

Research involving Indigenous peoples in Canada has historically been exploitative: such research was, and continues to be, conducted predominantly by non-Indigenous researchers, rejects Indigenous peoples' knowledge systems or worldviews, and often does not align with community needs and priorities due to a lack of respectful, ethical, and reciprocal partnerships (Government of Canada, 2019). In response, the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2) aims to promote the ethical conduct of research involving humans in Canada and is applied by the Research Ethics Boards in Canada (Government of Canada, 2017). Chapter 9 (Research Involving the First Nations, Inuit and Métis Peoples of Canada) of the TCPS 2 provides a framework for the ethical conduct of research involving Indigenous peoples in Canada (Government of Canada, 2019).

Nonetheless, despite ensuring that researchers comply with the highest ethical standards of research and uphold the core tenants of ethical, respectful, and collaborative research with Indigenous peoples in Canada via the TCPS 2, this policy has been criticized by Inuit as "a relatively inefficient mechanism for facilitating Inuit self-determination in research" (ITK, 2019). For example, TCPS 2 guidelines only apply to institutions and entities receiving federal funding from the Tri-Council Agencies, none of which are located in Inuit Nunangat (ITK, 2019). Thus, since Research Ethics Boards in Canada are dominated by non-Inuit members, "non-Inuit tend to retain exclusive decision-making authority about whether or not ethical guidelines are being met for research conducted in our [Inuit] communities", and broader consideration of Inuit wellbeing and worldviews go unacknowledged (ITK, 2019, p. 24). It is for this reason that Indigenous peoples in Canada have created their own research ethics guidelines to advance research conducted by and for Indigenous peoples that meets their priorities (ITK, 2019).

The First Nations Principles of Ownership, Control, Access and Possession (OCAP®) are a set of standards created by the present-day First Nations Information Governance Centre (2020) to direct how First Nations data should be protected, used, and shared. The four OCAP® principles include: (1) ownership over cultural knowledge, data, and information (2) the control over all aspects of research, (3) access to information and data about themselves and their communities, and (4) the possession and ownership of data by First Nations peoples (FNIGC, 2014; FNIGC, 2020). Although these principles were developed by and for First Nations peoples of Canada, these principles align with ITK's 2018 National Inuit Strategy on Research (NISR). These principles were applied in this research. First, I enabled the community of Tuktoyaktuk to determine the research questions and methods by first presenting my research ideas to local leadership in Tuktoyaktuk, modifying my methods according to their feedback, conducting respondent validation with participants, and developing a Memorandum of Understanding with the Tuktoyaktuk Community Corporation to hire a community researcher. Importantly, letters of support were received from both the Tuktoyaktuk and Paulatuk Hunters and Trappers Committees (THTC, PHTC) and Community Corporations (TCC, PCC) for the CFGH and C4FS projects. I am presently enabling participants to access data about themselves and their communities by sharing the study findings through infographics and increasing Inuvialuit ownership over data by returning the storytelling interview audio recordings to the IRC and TCC to house, ensuring that residents have access to these stories about their relatives and community. Reflecting the principles of TCPS 2, this project received ethics approval from the University of Waterloo Research Ethics Board (ORE#41577 for Study 1 and ORE#42948 for Study 2) and scientific research licenses from the Aurora Research Institute (No. 16690 and No. 16832) via the CFGH and C4FS projects (see Appendices A and B).

2.5 Chapter 3 Design

2.5.1 Introduction

I conducted key informant interviews as a research assistant for the CFGH project in the spring of 2020, which also comprised the first component of my thesis. Key informant interviews are in-depth interviews of a non-random group of experts selected for their knowledge of the research topic (Parsons, 2011). Key informant interviews typically employ closed- and open-ended questions to obtain a detailed understanding about an organization, program, problem or topic (Parsons, 2011). The goal of these interviews was to inform the development of an Inuvialuit Food Messages Survey to learn about community members' awareness and understanding of current health messages on country foods and store-bought foods. Ultimately, these key informant interviews addressed my first thesis research question: what are the characteristics of current public health dietary messages that guide food choice in the ISR?

In February 2020 I joined Dr. Ostertag on a trip to the ISR to assist with the launch of CFGH research activities, receive feedback on my thesis research plans from community leadership in Tuktoyaktuk, and develop relationships with local research partners and community members, reflecting my CBPR approach. This trip provided an opportunity for me to build on existing relationships that Dr. Ostertag had developed with community members and the TCC, THTC and IRC over the past decade. Furthermore, by visiting Tuktoyaktuk in person pre-pandemic, I was able to develop my own relationships with community members and project partners whom I collaborated with virtually for my second study component and recipe project, as discussed in the following sections. I am very grateful to have had the opportunity to meet with project partners in Tuktoyaktuk and listen to their stories and research needs to begin my journey of relational research, enacting CBPR and the principles of an Indigenous research paradigm. This was especially helpful to continue relationship building virtually during the pandemic.

2.5.2 Participant Sample and Recruitment Strategy

Dr. Ostertag and I selected participant inclusion criteria based on outcomes from focus groups, community meetings and consultation with the TCC, PCC, THTC and PHTC during the CFGH project tour in February 2020. We conducted an internet search to develop a list of health professionals, government employees and community nutrition or cooking program coordinators who appeared to develop and/or disseminate dietary messaging in or for the ISR. We included three levels of dietary message disseminators: (1) Territorial – GNWT Department of Health and Social Services (DHSS) in Yellowknife; (2) Regional – Inuvialuit Regional Corporation (IRC) and NTHSSA Beaufort-Delta Region

in Inuvik; and (3) Local – communities of Tuktoyaktuk and Paulatuk. We excluded federal and national dietary message disseminators from this study given the scope of the CFGH project. I utilized a snowball sampling approach (Morgan, 2008), where three representatives from the GNWT DHSS and IRC reviewed my list of potential participants and identified additional contacts. I recruited potential participants by telephone and email utilizing a script (see Appendix C). I followed up by telephone and email with those who did not respond to my initial call. Several weeks were available to participants to ensure everyone had the opportunity to participate should they wish given their engagement in COVID-19 relief measures.

2.5.3 Data Sources and Procedures

Dr. Ostertag and I developed a semi-structured interview guide (see Appendix D), which addressed the types of messages currently communicated by key informants to the public in the ISR, who develops and communicates dietary messages, how these messages are developed and communicated, and barriers and facilitators to disseminating messaging. Interview questions were provided in advance when requested by the participant during recruitment. Following the first interview, we amended the original interview guide to create three tailored guides for different participant categories, including additional questions. A feedback letter was sent to all participants following the interview (see Appendix E).

I conducted a pilot interview with Dr. Ostertag to ensure reliability between us when interviewing. Dr. Ostertag conducted one in-person interview in February 2020 and I conducted 13 telephone interviews between May-June 2020 with key informants to characterize how dietary messages are developed and disseminated in the ISR (see Table 1).

Table 1: Summary of methods and participants for Study 1

Research Question	**Method**	**Type of dietary message stakeholder interviewed**	**Number of participants (*n*)**	**Date of interviews**	**Interviewer**
1	In-person key informant interview	Territorial (GNWT DHSS), regional (IRC & NWT NTHSSA Beaufort-Delta) and local (Tuktoyaktuk and Paulatuk) dietary message disseminators	1	February 2020	Sonja Ostertag
1	Telephone key informant interviews		13	May-June 2020	Julia Gyapay

Interviews were completed individually aside from two key informants (Participants 8 and 9) who chose to be interviewed together. Participant information letters and consent forms were provided by email at the time of interview booking (see Appendix F), and participants provided either verbal or

written consent. Predetermined, open-ended questions were asked throughout the semi-structured interviews and probes were utilized to elicit further information and clarify participant responses. Semi-structured interviews are typically weighted more heavily to less structured questions where questions or issues can be explored during the interview (Merriam & Tisdell, 2015).

2.5.4 Analysis Strategy

Interviews were transcribed by myself and an external transcription service, Transcript Heroes, given time constraints. I reviewed and analyzed the transcripts utilizing Braun and Clarke's (2006) guide to thematic analysis and Saldaña's (2016) first and second cycle coding methods, combining deductive and inductive coding approaches while employing NVivo® version 12 qualitative analysis software. Braun and Clarke's (2006) six phases of thematic analysis include the recursive process of familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

Braun and Clarke's (2006) first phase of thematic analysis involves immersing oneself in the data by actively reading the data multiple times and jotting down initial ideas. Since I conducted the majority (n=13) of the interviews, I was very familiar with the data once I began thematic analysis. As recommended by Braun and Clarke (2006), Nowell et al. (2017), and Miles et al. (2020), I wrote down my initial thoughts, ideas, and questions after conducting each interview as part of my analytic memoing. I also edited each transcript while listening back to the corresponding audio files, which helped re-familiarize myself further with the data after having completed the interviews. Braun and Clarke's (2006) second phase, generating initial codes, can be considered the first of two main coding stages described by Saldaña (2016): First Cycle and Second Cycle coding. During First Cycle coding, codes are assigned to the data to begin summarizing them (Saldaña, 2016).

During this second phase (or First Cycle coding), I employed an integrated approach (i.e., a combination of inductive and deductive thematic analysis) to develop codes (Bradley et al., 2007). Inductive, or 'data-driven', analysis enables data to be coded without trying to fit them into pre-determined codes (Braun & Clarke, 2006). In contrast, deductive, or 'theory-driven', analysis is driven by the researcher's theoretical or analytical interests (Braun & Clarke, 2006). I used provisional coding (Saldaña, 2016) to begin coding the data, which involved beginning with an a priori (predetermined) list of research-generated codes, generated based on the findings from Dr. Ostertag's focus groups in February 2020. Therefore, I began thematic analysis using a deductive approach, utilizing the focus group categories as my initial codes (i.e., parent and child nodes) in NVivo 12. King (2004) recommends using a few predefined codes during this phase as this helps provide direction for analysis. Provisional coding was chosen since the key informant interviews built upon the focus groups to inform the development of

the survey tool; thus, certain key topics that were intended to be further analyzed in the Inuvialuit Food Messages Survey had to be coded for in the key informant interviews. I then utilized an inductive approach to thematic analysis by assigning additional codes, and modifying the provisional codes, once I came across segments of data that I identified as meaningful to my research question. This inductive coding involved descriptive coding: summarizing the topic of a segment of data using a descriptive noun or short phrase (Saldaña, 2016). Descriptive coding is a simple method used to categorize data at a basic level to prepare for further analysis (Saldaña, 2016). At this stage, once I coded the first transcript and developed my codebook (see Table A), a research team meeting was held to review my codebook and discuss necessary changes to be made to the analytic methods. Such peer debriefings help to further support the rigor and trustworthiness of qualitative analysis (Nowell et al., 2017).

The second of the two main coding stages described by Saldaña (2016), Second Cycle coding (i.e., pattern coding), involves grouping the codes generated from First Cycle coding into a smaller number of analytic units to categorize this data further (Miles et al., 2020). The analytic units generated from pattern coding are typically (1) categories or themes, (2) causes or explanations, (3) relationships among people, or (4) concepts or theoretical constructs (Miles et al., 2020). Pattern codes are exploratory and inferential; they help to see the 'bigger picture' within the data by identifying emergent themes (Saldaña, 2016). I treated Second Cycle coding as nested within Braun and Clarke's (2006) third phase of analysis as I was beginning to generate themes. Importantly, as per the definition of 'theme' offered by Miles et al. (2020), I considered the generation of 'themes' in this third phase of analysis to also encapsulate causes or explanations, relationships among people, and concepts or theoretical constructs, as per Saldaña's (2016) pattern coding. In the third phase, I sorted and combined the codes into potential themes and combined the relevant coded data extracts for each theme (Braun & Clarke, 2006). The themes were identified using a latent thematic analysis approach, meaning that themes were identified with the explicit meanings of the data, rather than examining underlying ideas and assumptions through a semantic thematic analysis approach (Braun & Clarke, 2006).

In the fourth phase of analysis, reviewing the themes, I recursively refined the themes by determining whether they accurately reflected the meanings in the full data set, whether additional themes were needed, or whether themes needed to be collapsed into others or removed (Braun & Clarke, 2006; Nowell et al., 2017).

The fifth phase of analysis, defining and naming themes, involved determining which parts of the data each theme captured and identifying what was of interest in the data and why (Braun & Clarke, 2006; Nowell et al., 2017). At this phase a meeting with Dr. Ostertag was held to review my themes and receive feedback prior to writing the report.

The final phase of analysis, producing the report, was conducted during the writing of my first manuscript (Chapters 3), detailing analysis for each theme, including short direct quotations, and interpreting the themes and their implications (Braun & Clarke, 2006; Nowell et al., 2017). I produced a summary report of the key informant interview themes for our presentation to CFGH territorial and regional project partners in February 2021.

2.5.5 Member Checking and Returning Results to Participants

I conducted member checking following analysis to enable territorial and regional dietary message disseminators to approve publication of their quotations in the manuscript (Chapter 3) and ensure they were accurately represented, further developing trusting relationships with participants and enabling them to play an active role in the research analysis process (Carlson, 2014; Creswell, 2005; Green & Thorogood, 2018). One participant chose to adjust or remove their quotes in contexts where they may have been identifiable in their position, and all provided edits to add clarification. Since the overall meaning of quotes did not change, these modifications did not affect my analysis. This process was key to building a trusting relationship with territorial and regional dietary message disseminators, ensuring they were comfortable with the findings and interpretation of their quotes. I have developed infographic posters summarizing the study findings to share with all participants in January 2022 with the assistance of another CFGH Tuktoyaktuk community researcher. I also presented a summary of this project at the 2020 ArcticNet Scientific Conference online.

2.6 Chapter 4 Design

2.6.1 Introduction

Findings from Study 1 informed the subsequent development of research questions for Study 2, bridging the CFGH and C4FS projects. Specifically, Study 2 sought to acknowledge the impacts of climate change on Inuit dietary choices and activities as well as the importance of co-developing culture-centered dietary messaging, noted as gaps in current public health messaging disseminated in the ISR. Drawing on the Study 1 findings, it was apparent that climate change impacts the quality and safety of country foods consumed in the ISR, however, it is currently not factored into dietary messaging, which describes the types of country foods that should be consumed and how to prepare these foods. Questions about climate change were not posed in the key informant interviews since this was not a focus of the CFGH project. Furthermore, while conducting the key informant interviews and listening to participant responses, a lack of inclusion of perspectives from local country food knowledge holders (e.g., Elders and harvesters) and residents was noted given the focus on top-down public health message disseminators. Based on these findings, Study 2 sought to address the following research question: How can the

perspectives and Inuvialuit knowledge of territorial, regional, and local public health dietary message disseminators, local country food knowledge holders, and the public inform the co-development of culture-centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT?

I iteratively reviewed my research questions, received feedback from Drs. Skinner and Ostertag, and presented my research plan to the TCC during a virtual C4FS/CFGH team meeting in September 2020 to receive input, reflecting both the larger projects' and my thesis project's CBPR approach.

2.6.2 Adapting to COVID-19: Collaborating with a Tuktoyaktuk Community Researcher

Canadian lockdown measures aimed at preventing the spread of COVID-19 have shifted how participatory studies with northern Indigenous communities were conducted given the predominant pause on research travel. Like many academic researchers working with northern Indigenous communities, the COVID-19 pandemic required me to adapt and modify my research plans to align with evolving public health regulations and university restrictions, preventing me from undertaking further in-person research activities with community partners. While I had originally planned to return to Tuktoyaktuk in the spring of 2021 to conduct in-person interviews, a better outcome evolved from the pandemic: I was able to hire and train an Inuvialuk community researcher, Kanelsa Noksana, to lead interviews in her hometown of Tuktoyaktuk. This enabled me to foster greater research capacity within the community and enact participatory, decolonizing research approaches. While I had initially intended to spend more time in Tuktoyaktuk to conduct research activities and develop relationships during the spring of 2020, the pandemic helped make my project more participatory given the extent of Kanelsa's involvement in this study.

To hire a community researcher, I first developed a Memorandum of Understanding with the University of Waterloo and Tuktoyaktuk Community Corporation in January 2021. I then developed an extensive interview training toolkit between February-March and virtually hired, trained and mentored Kanelsa from April-May. In addition to interview training, we reviewed and modified my ethics forms, interview guide questions and research methods for clarity and cultural appropriateness, enacting participatory and decolonizing research approaches. Between June and November we collaborated on research activities including data collection, co-interpreting results, and co-presenting findings at the 2021 Association of Canadian Universities for Northern Studies Student Conference, where we were honoured to accept ArcticNet's Best Northern Engagement in Research award. The time I dedicated to virtual training and co-developing Study 2 with Kanelsa was vital to the success of this project and demonstrates an innovative way for academic researchers to co-lead participatory research with Indigenous communities. Due to time and funding constraints, academic researchers sometimes train community

researchers over a few days during community visits which often does not allow sufficient time for relationship building, the core of participatory research. Connecting with Kanelsa several times a week allowed us to develop a strong relationship, ensure she felt comfortable doing her work, and helped familiarize myself with the community and Inuvialuit culture. Our work together also ensured this project was grounded in community culture, values, realities and needs. Importantly, hiring Kanelsa to lead in-person research activities enabled me to support (not build) research capacity and Indigenous self-determination for research activities in Tuktoyaktuk, which I hope to see continue post-pandemic. I am deeply grateful to have had the opportunity to collaborate with and learn from Kanelsa throughout my thesis research.

2.6.3 Storytelling Interviews

Storytelling interviews uphold Indigenous worldviews, values and voices and thus are an effective and culturally appropriate Indigenous research method (Datta, 2018b; Rieger et al., 2020). Oral storytelling is central to many Indigenous cultures, including Inuvialuit culture, intricately connected with Indigenous ontologies and epistemologies (Bird et al., 2009; Datta, 2018b; Smith, 2012). Storytelling interviews are a useful method to resist dominant, Western research methods by honouring Indigenous voices and stories, decolonizing what we know to be scientific research methods through the promotion of Indigenous stories as a form of scientific knowledge (Datta, 2018b; Kovach, 2009). Storytelling interviews were employed to enact decolonizing and CBPR approaches, bridge Western and Indigenous ways of knowing, and foster relational engagement with participants (Datta, 2018b; Kovach, 2009; Wilson, 2008). We blended Indigenous and Western research methods during the storytelling interviews to best align with the two interview topics of Indigenous knowledge and public health dietary messaging. The latter half of the storytelling interviews involved semi-structured interview questions about whether Inuvialuit knowledge is desired to be included in future dietary messages and recommended approaches to message development.

2.6.4 Talking Circles

Talking circles foster respectful, reciprocal, and culturally appropriate dialogue occurring in a circle: a symbol considered to be sacred by many Indigenous peoples (First Nations Pedagogy Online [FNP], 2009; Lavallée, 2009). Talking circles with Indigenous participants are deemed more culturally appropriate than western data collection methods such as focus groups given that participants can share stories relating to the research questions (Kovach, 2009). The common principles of talking circles include introducing oneself, speaking one person at a time, listening respectfully to the person speaking (typically this person holds a sacred object which is passed along the circle), talking ‘from the heart’, and

keeping what is shared in the circle in confidence (FNP, 2009). Kanelsa preferred not to use a sacred object in the talking circle, therefore we omitted this element. A talking circle, not a focus group, led by Kanelsa was employed to resist Western epistemology and research methods and to enact participatory, decolonizing research.

2.6.5 Follow-up Key Informant Interviews

Similar to the key informant interviews conducted in Study 1, key informant interviews were conducted in Study 2 with participants knowledgeable of their organization and dietary messaging in the ISR. I chose to conduct follow-up key informant interviews with territorial and regional dietary message stakeholders whom we interviewed in Study 1 to gain a nuanced understanding of their current involvement in developing culture-centered dietary messaging in, with and for the ISR and preferences for future approaches to developing and disseminating culture-centered dietary messages. Since key informant interviews are typically employed alongside other data collection methods, I chose to combine this interview method with storytelling and talking circle interviews to obtain a variety of perspectives on the topic (Parsons, 2011).

2.6.6 Participant Sample and Recruitment Strategy

Together with Kanelsa, we developed a list of potential participants for the storytelling interviews and talking circles. We then employed a purposive, snowball sampling approach to further expand our list of participants by reviewing the list with Richard Gruben, another CFGH Tuktoyaktuk community researcher, and Darlene Gruben, a local health professional in Tuktoyaktuk, who identified country food knowledge holders and other local health professionals in their community to approach for involvement in our study. I developed a list of potential participants for the follow-up key informant interviews based on the participants interviewed in Study 1, which was then reviewed by Drs. Skinner and Ostertag. I invited an additional participant as a 'follow-up' key informant in Study 2 despite not participating in Study 1 given my efforts to obtain a diverse sample of dietary message disseminators, particularly those whose voices were not reflected in the initial key informant interviews.

Therefore, four participant categories were included in this study: (1) Follow-up key informant interviews with territorial and regional dietary message developers and disseminators (representatives at the Government of the Northwest Territories (GNWT) Department of Health and Social Services (DHSS) and Environment and Natural Resources (ENR) in Yellowknife and the Inuvialuit Regional Corporation (IRC) in Inuvik and regional allied health professionals with the Northwest Territories Health and Social Services Authority (NTHSSA) Beaufort Delta Region in Inuvik) who had been interviewed previously during the 2020 CFGH study; (2) Storytelling interviews (Group A) with Tuktoyaktuk country food

knowledge holders (Elders and harvesters knowledgeable about the local food system and country food practices); (3) Storytelling interviews (Group B) with Tuktoyaktuk adult community members aged 18+ interested in improving messages about healthy and safe food choices they see and hear in their community; and (4) a talking circle with local public health dietary message developers and disseminators in Tuktoyaktuk (health professionals, community health workers). These four participant categories were selected based on the findings and gaps in perspectives identified from Study 1 key informant interviews, promoting an increased diversity in perspectives.

Potential participants were recruited by telephone and email utilizing a script (see Appendices G, H and I) and a follow-up telephone call and email were sent to those who did not respond to the initial call. Kanelsa led the recruitment for the storytelling and talking circle interviews given her familiarity with the community and I led the recruitment for the follow-up key informant interviews given my established connection with the key informant participants.

2.6.7 Data Sources and Procedures

Kanelsa conducted 10 storytelling interviews (A and B) in June 2021 and a talking circle with two participants in July 2021 in Tuktoyaktuk. Kanelsa completed storytelling B interviews rather than a second talking circle due to scheduling difficulties encountered during the summer harvesting months and COVID-19 pandemic. I conducted 5 follow-up key informant telephone and videoconference interviews in June 2021, building on my findings from Study 1 (see Table 2).

Table 2: Summary of methods and participants for Study 2

Research Question	**Method**	**Type of dietary message stakeholder interviewed**	**Number of participants (*n*)**	**Date of interviews**	**Interviewer**
2	In-person storytelling interviews A	Tuktoyaktuk country food knowledge holders (harvesters and Elders)	7	June 2021	Kanelsa Noksana
2	In-person storytelling interviews B	Tuktoyaktuk community members aged 18+	3	July 2021	Kanelsa Noksana
2	In-person talking circle	Tuktoyaktuk health professionals and allied health professionals	2	July 2021	Kanelsa Noksana
2	Telephone and videoconference follow-up key informant interviews	Territorial (GNWT DHSS & ENR) and Regional (IRC and NTHSSA Beaufort-Delta) dietary message	5	June 2021	Julia Gyapay

		developers and disseminators			

Kanelsa completed two pilot interviews with me to gain interviewing practice. We posed open-ended questions throughout the interviews and utilized probes to elicit further information and clarify participant responses. Follow-up key informant interviews and the talking circle lasted approximately 60 minutes each and the storytelling interviews (A and B) lasted approximately 30 minutes each. All interviews were audio-recorded with permission. Participants provided either verbal or written consent (see Appendices J, K and L). All interviews were guided by an interview guide (see Appendices M, N, O and P), developed by myself and reviewed by Kanelsa. Demographic information (age, gender and self-identified ethnicity) was collected with participant consent to understand the role of demographics on preferences related to dietary message development and dissemination. Age of country food knowledge holders was not collected by the community researcher as a sign of respect.

Kanelsa asked talking circle participants to share perspectives and stories about whether Inuvialuit knowledge and culture had been noted in dietary messaging currently communicated by territorial and regional public health departments in Tuktoyaktuk, whether participants desired further Inuvialuit cultural perspectives to be included in messaging, what type of Inuvialuit knowledge was desired to be included, whether participation in the co-development of messaging was desired, and what this process should look like. Kanelsa asked storytelling interview participants to share stories about their Inuvialuit knowledge of healthy and safe country food choices and activities and reflect on whether such Inuvialuit knowledge is desired to be included in future public health dietary messaging about country foods in Tuktoyaktuk and if so, what this process should look like. During the follow-up key informant interviews, I posed questions related to whether (increased) involvement in the co-development of culturally relevant dietary messaging with local dietary message disseminators in the ISR was desired, preferences for how increased collaboration and inclusion of Inuvialuit knowledge in future messaging should be conducted, and current barriers and facilitators of developing culture-centered dietary messaging for the ISR. Inuvialuktun interpretation services were offered but not requested by participants. Storytelling and talking circle interview participants received a $50 grocery gift card in appreciation of their time and commitment. A feedback letter was provided to all participants following the interview (see appendices Q, R and S).

2.6.8 Analysis Strategy

Interviews were transcribed by Transcript Heroes. I reviewed and analyzed the transcripts utilizing the same methods described for Study 1, combining inductive and deductive coding approaches.

Descriptive coding was utilized while employing NVivo® version 12 qualitative analysis software (Bradley et al., 2007; Saldaña, 2016).

2.6.9 Member Checking and Returning Results to Participants

Member checking was conducted to enable country food knowledge holders and territorial and regional dietary message disseminators to approve publication of their quotations in my manuscript (Chapter 4) and ensure they were accurately represented, further developing trusting relationships with participants and enabling them to play an active role in the research analysis process (Carlson, 2014; Creswell, 2005; Green & Thorogood, 2018). Similar to my first manuscript, some participants chose to adjust or remove their quotes in contexts where they may have been identifiable in their positions, or to add clarification. Since the overall meaning of quotes did not change, these modifications did not affect my analysis. Given that Kanelsa is busy with her studies and is no longer in Tuktoyaktuk, another CFGH community researcher in Tuktoyaktuk will return transcribed data to country food knowledge holder participants in person in January 2022 if it is safe to meet in person. I returned transcribed data to territorial and regional dietary message participants by email to provide participants with the opportunity to accept or decline publication of select quotes and offer a project update as a sign of respect.

I reviewed the findings with Kanelsa in Fall 2021 and received her feedback on my second manuscript as a co-author (Chapter 4). I have created infographic posters of our findings to share with participants in January 2022. A summary of findings will also be shared in Dr. Ostertag's Northern Contaminants Program report this winter, and the upcoming CFGH project newsletter. All storytelling interview audio files were provided to the Inuvialuit Regional Corporation to house with consent from participants, aligning with our decolonizing approach.

Chapter 3: Characterizing the Development and Dissemination of Dietary Messaging in the Inuvialuit Settlement Region, Northwest Territories

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Abstract

Public health communication about diet in Inuit communities must balance the benefits and risks associated with both country and store-bought food choices and processes to support Inuit well-being. An understanding of how dietary messages—public health communication addressing the health and safety of country and store-bought food—are developed and disseminated in the Arctic is currently lacking.

As part of the *Country Foods for Good Health (CFGH)* study, located in the Inuvialuit Settlement Region (ISR), Northwest Territories (NWT), this participatory research sought to characterize dietary messaging in the ISR from the perspective of territorial, regional and local dietary message disseminators to further improve message communication in the region.

We conducted an in-person interview (n=1) (February 2020), telephone interviews (n=13) (May-June 2020), and follow-up telephone interviews (n=5) (June 2021) with key informants about their involvement in developing and/or disseminating dietary messages about the health benefits and risks of country foods and/or store-bought foods in/for the ISR. Key informants interviewed included health professionals (n=5), government employees (n=6) and community nutrition or food program coordinators (n=3) located in Inuvik, Tuktoyaktuk, Paulatuk and Yellowknife~~,~~ NWT. We conducted thematic analysis on the 19 interviews.

Our findings indicate that publicly disseminated dietary messages in the ISR are developed at all scales and communicated through a variety of methods. Dietary messages focus predominantly on encouraging healthy store-bought food choices and conveying nutritional advice about store-bought and country foods. As federal and territorial messaging is seldom tailored to the ISR, representation of the Inuvialuit food system and consideration of local food realities is generally lacking. There is a need to evaluate dietary messages in the ISR and improve collaborations between Inuvialuit country food knowledge holders, researchers, and public health dietary message disseminators at all scales to develop more locally tailored and culturally relevant messaging in the ISR. We recommend utilizing a participatory, culture-centered approach to dietary message development and dissemination in the ISR.

Key Words: Indigenous Health Communication; Food Communication; Dietary Messaging; Country Food; Store-Bought Food; Community-Based Research; Inuit; Northwest Territories; Canada

Introduction

Contemporary Inuit diets are comprised of both country foods (animals, game birds, fish and plants harvested from the environment for consumption) and store-bought foods (food sold in grocery stores)[1], each of which present benefits and risks to Inuit food security and holistic health (Arctic Monitoring and Assessment Programme [AMAP], 2021; Guyot et al., 2006; Inuit Tapiriit Kanatami [ITK], 2019). Country food is central to Inuit food security, personal and cultural identity, local livelihoods and economies, and holistic health, including physical, mental, cultural, spiritual, and socio-economic dimensions (Beaumier et al., 2015; Council of Canadian Academies [CCA], 2014; Damman et al., 2008; Ford, 2009; ITK, 2021). Climate change increasingly challenges Inuit food security by compromising the availability, accessibility, and quality of country foods for Inuit harvesters, accelerating the nutrition transition to non-nutrient dense store-bought foods (Furgal & Seguin, 2006; Ford, 2009; Guyot et al., 2006; Kuhnlein & Chan, 2000; Wesche & Chan, 2010). Further, elevated concentrations of certain environmental contaminants (e.g., Persistent Organic Pollutants (POPs) and mercury) in Arctic environments represent a concerning source of dietary exposure to contaminants through country food consumption, creating an 'Arctic Dilemma' whereby the health risks and benefits associated with country food consumption must be weighed (AMAP, 2016, 2021; Donaldson et al., 2010; Furgal et al., 2005; Krümmel & Gilman, 2016; Lemire et al., 2015). This 'Arctic Dilemma' is the central focus of Arctic environmental health risk communication research today (AMAP 2015; Boyd & Furgal, 2019; Furgal et al., 2005; Krümmel & Gilman, 2016; Lemire et al., 2015). Recommendations from these studies addressing country food health risk communication strategies have guided our project by providing an understanding of effective communication strategies in Inuit communities. However, since none have characterized how messages are developed and disseminated nor addressed best practices for developing regionally- and locally-tailored country food messaging, we seek to address these research gaps.

Further, store-bought foods are typically the predominant source of dietary calories consumed in remote Inuit communities (Kuhnlein et al., 2004). Of these, highly processed, non-nutrient dense foods are the most affordable, and thus oft-consumed; therefore, they pose significant risks to human health, including higher risk of chronic disease (Blanchet & Rochette, 2008; Egeland et al., 2010; Fillion et al., 2014; Kenny et al., 2018a; Kenny et al., 2018b; Kuhnlein et al., 2004). Nonetheless, store-bought foods have been largely excluded from Arctic risk communication research; thus, there is a significant knowledge gap about store-bought food dietary messaging in Arctic Indigenous communities and even less is known at the national, territorial, and regional levels in Canada (Bjerregaard & Mulvad, 2012;

[1] The terms 'store-bought foods' and 'market foods' were used interchangeably by study researchers and participants, referring to food sold in grocery stores.

Jeppesen et al., 2011). Of the studies addressing store-bought food messaging in Canadian Inuit communities, Kolahdooz et al. (2014) and Sharma et al. (2010) described and evaluated dietary intervention programs promoting healthy eating, but did not address dietary messages communicated via these programs. Very little research examining risk communication and risk perception of contaminants in country foods has been conducted in the NWT and ISR, and no studies have explicitly addressed dietary messaging about country or store-bought food choices and processes (Ratelle et al., 2018; Reinfort, 2015). Findings from existing studies support the need for balanced messaging about country foods and engagement of communities during message development and dissemination, which the present study builds upon (Ratelle et al., 2018; Reinfort, 2015). However, preferences for collaborations and methods of incorporating and communicating Indigenous knowledge in messaging remains unknown. Further, given the exclusive focus on country food risk messaging, studies addressing dietary messaging broadly (including store-bought foods) are greatly needed, especially across all regions of the NWT.

Inuit residing in Inuit Nunangat (the Inuit homeland in Canada) experience the highest prevalence of food insecurity among all Indigenous peoples living in developed countries (ITK, 2021) and are disproportionately impacted by climate change given that the Arctic is warming at over twice the rate as elsewhere on Earth (Vincent et al., 2015). Since these rapid environmental changes threaten the quality and safety of foods consumed by Inuit and consequently Inuit socio-cultural health, it is imperative that Inuit have access to evidence-informed and culturally relevant dietary information promoting healthy and safe diets and food processes (AMAP 2015; Boyd & Furgal, 2019; ITK, 2021; Krümmel & Gilman, 2016). Territorial and regional public health departments in the Northwest Territories (NWT) currently communicate information and advice about food-related choices and processes involving country and/or store-bought foods to NWT communities in the form of dietary messaging about harvesting, buying, storing, preparing, preserving, cooking, and consuming food, with the aims of reducing harm and promoting good health. For example, the Government of the Northwest Territories (GNWT, n.d.) published the “NWT Traditional Food Fact Sheet Series”, a resource promoting increased knowledge about the nutritional benefits of consuming country foods found in the NWT and safe preparation practices, yet no studies have characterized how it was developed and disseminated or evaluated its effectiveness in initiating dietary change. To date, far too little attention has been paid to dietary messaging about country foods beyond the field of Arctic environmental health risk communication research, and even less attention has been devoted to dietary messaging about store-bought foods in the Arctic. Moreover, community leadership in Tuktoyaktuk has indicated interest in learning about the health risks and benefits of both country and store-bought foods and highlighted the importance of providing positive messages about country foods.

Building on long-term research relationships with the Inuvialuit communities of Tuktoyaktuk and Paulatuk, this community-based participatory study sought to characterize current public health dietary messaging that guides food choice and food-related processes in the ISR. We first describe who develops and disseminates dietary messages in/for the ISR, how, what the messages address, and barriers and facilitators of messaging, from the perspective of territorial, regional, and local public health dietary message disseminators to more effectively promote healthy, safe and culturally appropriate food choices, supporting Indigenous food sovereignty. We then provide recommendations to dietary message stakeholders to further improve dietary messaging in the ISR.

Methods

Research Approach

This study employed a Community Based Participatory Research (CBPR) approach to conduct socially-just and culturally inclusive research in partnership with territorial, regional and community partners in the ISR, NWT (Israel et al., 2012). By utilizing a CBPR approach, community leadership and regional and territorial research partners were involved from the beginning of this study during community meetings in 2018 to plan the larger project and in February 2020 to review the present study's plans, recognizing the legitimacy of Inuvialuit community knowledge, perspectives and preferences which have historically been exploited and marginalized in the research process (Jull et al., 2017). Given our inability to collaboratively complete in-person research activities with community partners during the COVID-19 pandemic, we shifted to remote methods, drawing on our existing research relationships with territorial, regional and community partners. Research updates were shared with our research partners via bi-annual newsletters and virtual group meetings in 2020 and 2021. Reflecting our participatory approach, letters of project support were received from both the Tuktoyaktuk and Paulatuk Hunters and Trappers Committees (THTC, PHTC) and Community Corporations (TCC, PCC).

Participant sample and recruitment

Participant inclusion criteria were selected based on outcomes from focus groups, community meetings and consultation with Tuktoyaktuk and Paulatuk Community Corporations and Hunters and Trappers Committees during the CFGH project tour in February 2020. We used an internet search to develop a list of health professionals, government employees and community nutrition or cooking program coordinators who appeared to be currently involved in developing and/or disseminating dietary messaging in or for the ISR. Three levels of dietary message disseminators were included: (1) Territorial - GNWT Department of Health and Social Services (DHSS) in Yellowknife; (2) Regional - Inuvialuit Regional Corporation (IRC) and NTHSSA Beaufort-Delta Region in Inuvik; and (3) Local - communities

of Tuktoyaktuk and Paulatuk. Federal and national dietary message disseminators were excluded from this study given the scope of the CFGH project. We then employed a snowball sampling approach, where three representatives from the GNWT DHSS and IRC reviewed our list and identified additional relevant contacts. Potential participants were recruited by telephone and email. A follow-up telephone call and email were sent to those who did not respond to the initial call.

Data sources and procedures

Between February and June 2020, we conducted one in-person interview and 13 telephone interviews with key informants to characterize how dietary messages are developed and disseminated in the ISR. We conducted follow-up telephone interviews with five of the participants in June 2021, building on the findings from the original key informant interviews. Two key informants (Participants 8 and 9) chose to be interviewed together; otherwise all interviews were done individually. Interviews lasted approximately 1 hour and were audio-recorded with permission. Consent forms were used, and participants provided either verbal or written consent.

Open-ended questions were asked throughout the interviews, and probes were utilized to elicit further information and clarify participant responses. All interviews were guided by interview guides developed by our team. The questions posed sought to understand what messages are currently communicated by the key informants to the public in the ISR, who develops and communicates the dietary messages, how these messages are developed and communicated, and barriers and facilitators to disseminating messaging. After reviewing the first interview, we transformed the original interview guide into three tailored guides for different participant categories, where we also included some additional questions.

The audio recordings were transcribed, reviewed, and analyzed utilizing Braun and Clarke's (2006) guide to thematic analysis and Saldaña's (2016) first and second cycle coding methods. An integrative approach was employed, beginning with provisional coding and ending with descriptive coding using NVivo® version 12 qualitative analysis software (Bradley et al., 2007; Saldaña, 2016). We combined inductive and deductive coding approaches to identify and code transcripts for themes regarding who develops and disseminates dietary messages, types of messages, how messages are developed and disseminated, and barriers and facilitators to message dissemination. We began coding utilizing an a priori list of research-generated codes based on findings from focus groups conducted by Dr. Ostertag as part of the larger CFGH project. We then utilized an inductive approach by assigning additional codes and modifying existing codes. Peer briefings were conducted throughout coding to further support the rigor and trustworthiness of analysis (Nowell et al., 2017). We discussed interview

findings with territorial and regional project partners in February 2021, and they were also involved in reviewing this manuscript. This process was key to further building trusting relationships with project partners. This study received approval from the University of Waterloo (ORE#41577) and a Scientific Research License (No. 16690) from the Aurora Research Institute.

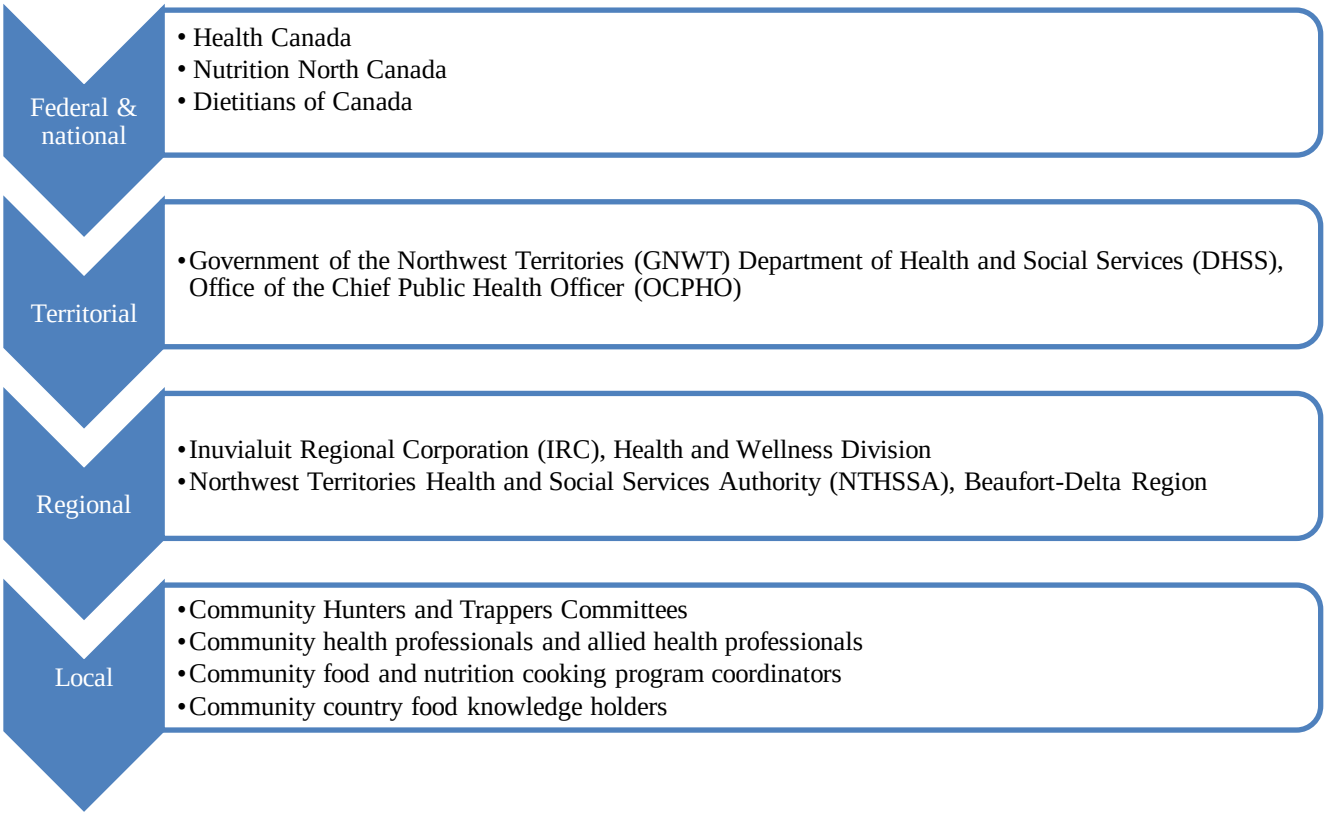
Results

Seven key themes were identified during thematic analysis relating to participants' involvement in dietary messaging for/in the ISR, types of messages communicated, communication methods employed, perceptions of current methods, and barriers and facilitators of message development and dissemination in the ISR. In this section, we interpret these themes by highlighting participant perspectives that are reflective of the overarching themes from our analysis. We first present participants' involvement in ISR dietary messaging. We then describe the types of dietary messages communicated, methods of dissemination, and perceptions of food quality, safety and messages in the ISR. We end by describing barriers and facilitators of dietary message development and dissemination in the ISR.

Involvement in dietary messaging for/in the ISR

Dietary messages for/in the ISR are developed federally through three distinct organizations, territorially through the GNWT, regionally through both the Inuvialuit governance body and the regional health authority of the GNWT, and locally through multiple organizations and programs (see Figure 8). Methods for dietary message development vary based on the type of message being conveyed, and on both the organization(s) involved and roles of key public health stakeholders therein. Activities at each level are discussed below.

Figure 8: Current public health stakeholders involved in the development and/or dissemination of dietary messages in/for the Inuvialuit Settlement Region



Territorial level

The Government of the Northwest Territories (GNWT) Department of Health and Social Services (DHSS), Office of the Chief Public Health Officer (OCPHO) develops and disseminates messaging about the safety of country food consumption through site-specific consumption notices issued by the Chief Public Health Officer (e.g., site specific fish consumption advice) and country food fact sheets developed in collaboration with academic researchers. The DHSS collaborates with researchers, either by contacting them with questions they wish to have answered about contaminants and country foods, or by using information submitted by researchers to inform their messaging. The OCPHO Environmental Health team aims to review and provide feedback on research findings before they are shared with communities. However, this process is not perfect, and participants indicated the need for researchers to keep them better informed and seek their feedback prior to releasing messaging. Researchers who have questions about health messaging also reach out to DHSS to partner on research projects.

General dietary messaging about the nutritional and cultural benefits of both country and store-bought foods is developed by the Territorial Nutritionist in collaboration with dietitians, other DHSS employees (e.g., communications unit), Indigenous partners, and the OCPHO following federal/national messaging (e.g., Health Canada, Dietitians of Canada). This messaging is targeted for territory-wide initiatives and specific programs in ISR (e.g., Healthy Families Collective Kitchen promoting healthy food skills and knowledge to parents). Messaging and direction for messaging is not developed for all DHSS programs, nor for all health professionals delivering health messaging in the ISR.

Regional level

The IRC Health and Wellness Division involves and employs local trusted knowledge holders through their programs, leveraging Inuvialuit knowledge about healthy and safe country food practices through these knowledge holders' teachings and thus obviating the need for specific messaging. If dietary messages are communicated by the IRC, they often come from federal and territorial public health departments (such as Health Canada or GNWT DHSS) and then are filtered through an IRC board that internally reviews and revises the messages as the board members know and understand how the specific messages will be interpreted by communities.

> *"Truthfully, not a lot of specific messaging. It's more, it happens … more organically where someone has a reputation for being knowledgeable and you just make sure that they're involved in the program or service. And so the idea being that just by the very nature of being there and being present, whatever traditional [Inuvialuit] knowledge needs to be respected will… I don't see a lot of very specific messaging. Like the way that government would do it would be like, you know "eat seal because it's high in vitamin D" or you know, "process muktuk like this because of botulism". You don't see that kind of specific messaging coming from our office very often." (Participant 3)*

The GNWT Health and Social Services Authority Beaufort-Delta Region dietitians are involved in providing dietary messaging to clients and communities through one-on-one consultations and community programs and presentations about nutrition, healthy food choices, diabetes, and cooking, incorporating both traditional and healthy store-bought foods.

Local level

Community Health Representatives (CHRs), workers who provide community health services in their community in collaboration with the community health nurse or doctor, pick topics they think are interesting and relevant to their community and develop programs, presentations, posters or resources about the topic. The CHRs receive information from the GNWT DHSS and CHRs in other communities. The regional dietitians in Inuvik train the CHRs in the ISR to deliver Nutrition North Canada (NNC) programming.

Country food knowledge holders (e.g., Elders and harvesters) communicate dietary messages themselves by sharing Inuvialuit knowledge of the country food system. One participant stated,

> *"Well an example, since COVID started IRC [Inuvialuit Regional Corporation] has been providing funds for people to go out onto the land and to ensure that their food security issues are addressed, and communities are always doing hunts and different things to help provide for the communities. I think the communities really, they want – they are already taking care of their needs that way. And I think they message themselves, I don't know [laughs]. I mean it's part of tradition, right?" (Participants 8)*

The local Hunters and Trappers Committees, responsible for overseeing harvesting rights and management functions in each ISR community, provide general messaging promoting country foods and safe food preparation practices.

> *"Again, you know, you're not going to see them talking about things in specific ways. You're not going to be like "Oh yes, eat char, high in vitamin D, saturated fats." You're not going to see that. But they will say more general things, like "people like it, it makes them feel good, people are healthier when they eat their country food". Stuff like that…If you probe a bit you know, you can glean more information, maybe something along the lines of like "don't process muktuk when it's too warm out."… But again, you won't —yeah you won't see them use that specific terminology, they just say more general things." (Participant 3)*

Importantly, not all key informants are involved in dietary message development and instead communicate messages that are developed from federal, regional or territorial resources or program curriculums. Furthermore, not all participants develop messages in or for the ISR. For example, the GNWT DHSS OCPHO Environmental Health team is not currently involved in developing country food contaminant notices for the ISR.

> *"There have been various researchers who have consulted with the DHSS on whether or not country food advisories were needed to be issued based on the data. I am not aware of any country food contaminant notices that the DHSS may have issued for the ISR." (Participant 6)*

Some messages are developed directly by key informants themselves by drawing on their knowledge and experiences; federal (Health Canada, Nutrition North Canada), national (Community Food Centers of Canada), territorial (GNWT DHSS- Office of the Chief Public Health Officer), regional (Beaufort Delta Health Authority, IRC Health and Wellness Division), and local sources (e.g., from other organizations and individuals, Elders, health centers); from the internet, university researchers, or a combination thereof. For example, a local health professional described creating seasonal posters promoting country foods available to harvest in their community. These posters included pictures of local harvesters, information about traditional methods of processing and storing the country food, and its nutrient content.

The GNWT DHSS OCPHO and the IRC Health and Wellness Division's messaging are developed for the general public. If messaging is targeted, the primary target populations are pregnant women and mothers with babies/children, individuals with diabetes, or individuals of low economic status, which is often delivered through diet-related programming for these populations.

Types of dietary messages communicated in the ISR

Federal, territorial and regional dietary messages disseminated in the ISR by territorial, regional and local disseminators are predominantly focused on store-bought-food. These messages tend to address healthy food choices and nutrition-related information and advice through the promotion of label reading, portion sizes, unhealthy store-bought foods to avoid, how to prepare and cook meals using store-bought foods, and budgeting tips for grocery shopping. As one participant described:

> *"…in regards to store-bought food, I think overall our messaging is kind of more around trying to encourage people to pick less processed foods as much as possible… we do have a session on label reading as well, in which we try to just encourage people to look at the labels and teach them what things to look out for… as far as deciding what foods would be considered kind of more nutritious [and] which would be less nutritious based on certain kind of indicators on the nutrition facts label." (Participant 7)*

The more limited messaging about country foods tends to focus on the nutritional benefits of consuming such foods, with some mention of cultural and economic benefits. For example, a participant indicated that:

> *"The GNWT DHSS encourages people to eat country food. Country food is a very important part of the diet and traditions of the people living in the Territory. For example, for fish, DHSS have emphasized that "fish is good for you, it is high in protein, vitamin B and Omega 3 fatty acids". And, we say the same thing for moose as well." (Participant 6)*

Although disseminated less often, key informants mentioned additional categories of dietary messages they communicate, including messages about additives to avoid in processed store-bought foods, environmental contaminants and zoonotic diseases in country foods, traditional hunting and harvesting practices and values, and how to safely prepare and store country foods. One participant described the following message about country foods and contaminants that they provide during programming:

> *"If I bring in the dietitian… we'll talk about the benefits and also some of the precautions that could be taken with say pregnant and breastfeeding women with regards to char and seal and beluga with the high mercury content." (Participant 12)*

In general, key informants noted that they generally promote country foods as healthy, or healthier, than store-bought foods and emphasize the importance of eating country foods when available. Key informants

also highlighted that country foods are safe to eat, promoting the commonly cited message that the health benefits of country foods outweigh the safety risks. As one participant stated:

> *"…the messaging is pretty much, like, [country food is] basically always a good choice... what my one message has always been, and I always continue to promote it, and I think other people do too around here who are working with food and with our communities, is that the benefits of consuming country food will almost always outweigh the risks. That's my message and I would say just about anyone who has worked here for any length of time… will usually in some way or another promote that message as well." (Participant 3)*

Participants noted a gap in current messaging promoting country foods and expressed their desire to improve country food messaging in the future. A participant expressed this sentiment by saying:

> *"I would have to say, in the past our messaging around it has been probably more focused on market food. And I guess we do bring up nutritional content of traditional foods, like maybe very briefly. But that was one of the things we reflected on over this past year, was like 'we need to do a better job of highlighting that.' We need to do better, have more of a focus in the nutrition component of that workshop on traditional foods and how healthy it is for people. And why, and compare it to market food as well." (Participant 7)*

Methods of dissemination

Dietary messages are communicated to ISR communities in multiple ways (Table 3). Common methods of dietary message dissemination include individual consultations with health professionals and group food and cooking programs; written documents (e.g., posters, factsheets); radio announcements; and the internet (e.g., social media posts and websites).

Table 3: Current methods utilized by territorial and regional health professionals, government employees, and community nutrition or food program coordinators to communicate public health dietary messages in the Inuvialuit Settlement Region (ISR)

Methods of dietary message dissemination in the ISR	**Examples**
In person	• One-on-one consultations with health professionals • Community food and cooking programs • Community food workshops led by the IRC and Inuvik greenhouse • Community presentations (schools, cooking classes) from regional dietitians and local health professionals and allied health professionals • Community healthy living fairs • Word of mouth • Hands-on participation and observation of traditional harvesting activities led by country food knowledge holders

Written documents	• Posters (digital copies on social media and websites; hard copies displayed in communities, provided at health consultations and food workshops) • Newsletters (digital and hard copies) • Factsheets (digital and hard copies) • Country food consumption notices[2] (digital and hard copy)
Audio and digital	• Radio announcements and news items on local and territorial stations • GNWT websites • Facebook and Instagram (community Facebook pages, IRC, NTHSSA, GNWT)

Not all participants were involved in delivering dietary messages directly to the public. Direct, in person contact with public audiences is limited or less frequent at the territorial level. Community health professionals, allied health professionals and cooking/nutrition program workers or coordinators typically deliver messaging on the ground. Territorial message developers play an indirect but important role. One territorial-level participant explained:

> *"…I don't have direct public contact. My contact is through community workers, and they're the ones who are delivering the message. They are the ones who are employing the tools. They are the ones who are reaching the public..." (Participant 4)*

Perceptions of food quality, safety and dietary messages

Participants described community members' positive perception of the quality and safety of country foods but noted that people are noticing more contaminated wild meat and younger generations are less knowledgeable about how to safely prepare country foods. Key informants perceived country foods to be of good safety and quality if prepared well and that the nutritional and cultural benefits outweigh the potential risks. They also perceived country foods to be of better quality than available and affordable store-bought foods. A few participants were concerned about the safety and quality of country foods regarding contaminants and safe preparation/storage while some were not concerned at all. For example, a participant noted,

> *"…even like our beluga, some – like we ferment some of it, so you really have to have knowledge as to how to prepare it properly, otherwise you'll poison yourself…There have been some people are kind of leery of that, like especially the younger generation. Like they don't know how to – most people don't know how to prepare and preserve things." (Participant 14)*

[2] While key informants often used the term 'advisories', GNWT DHSS now uses 'consumption notices' to communicate public health advisories about a country food in a specific area.

Key informants noted that community members often disregard or distrust public health messages about contaminants in country foods. One participant explained this distrust by saying,

> *"And sometimes, I know in another community that I lived in, they would get a message and they'd just kind of laugh and say, "Well, we've never had that issue. And all these steps to prevent it, we do it a different way and we will continue doing it that way." (Participant 8)*

Key informants explained that some communities no longer trust dietary messaging as a result of poor country food health risk messaging delivered by researchers and the government. Some GNWT dietary message disseminators recognized that not all their messages about contaminants and country foods have been helpful—some have been harmful in past—and identified the need to further improve their messaging.

> *"… because obviously like the [GNWT] health department has caused harm in the past in terms of our messaging, and how that has led to people not eating fish, or not even eating beluga. And we really don't want that to happen because obviously there's such enormous health benefits to eating these country foods, especially compared to market food… something we're still trying to work out, is how do we talk about contaminants without completely terrifying people, and have that feel like the only thing that they take away from the messaging?" (Participant 11)*

Some key informants expressed concerns and distrust about the quality and safety of store-bought foods given a negative history with the Northwest Company and exploitation of Indigenous peoples through historical and ongoing federal colonial policies and practices.

Barriers to dietary message development and dissemination in the ISR

Several barriers of message development and dissemination currently exist for participants involved in developing and/or disseminating messaging in/for ISR communities. Local dietary message disseminators noted they do not have consistent access to resources and supports to develop dietary messages, regional health professionals cannot visit the communities regularly, staff turnover is high, information gets lost, internet barriers exist, and local dietary message disseminators often develop messages and programming themselves with limited access to dietary and nutrition information and resources. A participant remarked,

> *"One of the biggest barriers in the Territories is turnover. We have tremendous turnover… So, every time there's turnover then you have to start all over again." (Participant 4)*

Issues with misinformation and mixed information was noted due to multiple health professionals involved in the dissemination of health messaging in the communities and the inability of dietitians to visit frequently. Furthermore, issues with the communication of false or harmful dietary messages by researchers to communities was noted. Participants explained that some researchers have communicated

false information since they were unprepared to answer community questions about whether a country food is safe to eat. A participant further described this by saying,

> *"I mean sometimes it's like the researcher doesn't even… they don't plan to talk about health at all, but then so often, especially when you're talking about country foods, people's main question is, "well, is it safe to eat?". And so I think if a researcher kind of maybe is unprepared for that question, they start talking about health, even though they – that is not necessarily their – where their expertise lies. They can kind of be caught unawares, and then they are the ones communicating health messages that are maybe not even true." (Participant 11)*

Relating to dietary messages delivered via cooking programs, regional and local health professionals and allied health professionals noted that they often have to modify recipes and cooking program curriculums to incorporate country foods and appeal to ISR communities since they typically originate from southern programs and focus solely on store-bought foods, many of which are not affordable or available in the ISR. A participant explained,

> *"And that's kind of a challenge for [us] because we constantly have to modify programs that are given to us. Or we just have to create them ourselves." (Participant 2)*

Another participant described the challenge of receiving recipes from the GNWT that focus solely on store-bought foods by saying,

> *"…when we get stuff from the nutritionist, or from the health promotions in Yellowknife, it's all like store-bought foods." (Participant 14)*

Participants noted that in the past, researchers have released confusing and inaccurate messages about contaminants in country foods and health risk, which could have been prevented if the OCPHO was consulted prior. For example, one participant explained,

> *"There was one time when we heard about the recommendations from a researcher and we were puzzled. I do recommend that researchers check in with the DHSS to have a conversation on health messaging before it goes public." (Participant 6)*

Regional and local health professionals and allied health professionals involved in the communication of dietary messaging in the ISR expressed the need to improve their access to information and resources to be able to answer nutrition and diet-related questions that community members have raised but which they cannot answer. A participant made this request by saying,

> *"I wouldn't mind to have some kind of I guess guide to follow on, you know, what – I wouldn't mind to have the information there so that if someone came in and they asked me a question on, you know, "How can I buy healthier food?" or, "What do I think is healthy for my kids?" or*

something like that. You know, I wouldn't mind to have the information there where I could just provide it to the individual…" (Participant 10)

As one local health professional noted, if they are unable to find an answer to a diet-related question on reputable sites such as Health Canada, they resort to Google, highlighting the need for improved access to nutritional information and resources in the ISR.

"If I'm stuck, say, like in Health Canada I find that I can't find it, then I'll Google." (Participant 1)

Barriers in consistent messaging exist between the regional and local health professionals in the ISR; one participant noted that physicians working in the ISR have provided dietary advice to the public that they questioned.

"So sometimes it's like "yeah the doctor told me to do this so I'm doing that". Like "OK, that's fine, you know, if it works for you" kind of thing. But sometimes they'll be like "my doctor told me this, why?" And I'll be like "I don't know"". (Participant 2)

Furthermore, there are few facilitators guidance documents for dietitians and community health workers to use when delivering nutrition education and skills training to the ISR communities. Therefore, it is difficult to ascertain that knowledge and skill development are consistent. A participant expressed this challenge saying,

"…from a territorial viewpoint, we haven't put together a guidance document for small groups which outline key messages and provides speaking notes. We don't have that...They [dietitians and nutrition program coordinators] teach what they know and may have lesson plans. Apart from saying "traditional food is good food", I don't know what else they say." (Participant 4)

The high cost of purchasing country foods and regulations for selling country foods in the ISR have hindered the development of programming utilizing country foods. For example, a participant described how the local Hunters and Trapper's Committees' regulations for acquiring country foods and the high cost of country foods have made it difficult for local cooking program coordinators to incorporate country foods into their programming,

"…even though it's funded by the Inuvialuit Regional Corporation, it's really tough to get native food, very tough. The cost of acquiring native food is expensive. Like people – when people hunt here, you know, they have to pay for their gas, their time, their ammunition, all that stuff, so it's hard to get specific native foods… And there's lots of restrictions, yeah, with the Hunters and Trappers." (Participant 14)

Finally, there is as lack of dietary message evaluation by territorial and regional public health departments and government and academic researchers in the NWT as no dietary messages or methods of dietary message dissemination used by ISR dietary message disseminators have been evaluated. Rather, participants described evaluations they have conducted for cooking and food programming. As one participant explained, challenges with capacity to conduct evaluations, including a lack of resources and budget, exist in the NWT.

Facilitators of dietary message development in the ISR

Participants emphasized the importance of collaboration during message development, particularly between researchers, Inuvialuit knowledge holders, the GWNT DHSS, and health professionals in the communities. A participant suggested this by saying,

> *"I think researchers need to just check in… with the department here and say "Hey, what do you think of what we're recommending? And can I recommend this action? What are your thoughts?" If we have any thoughts we will look into it and then convey it as well, we will do our best to help out." (Participant 6)*

Further, a participant highlighted the need for community-led message development, promoting a decolonizing approach:

> *"…You know, it has to be what people want and not what we tell them they should want, because that's where all our problems started." (Participant 13)*

It was noted that Elders and Indigenous knowledge holders need to be actively included in the development of messaging to ensure they are grounded in local culture, values and practices, celebrating the local country food system and Indigenous knowledge. A participant expressed this need by explaining,

> *"I think that gathering messaging from those knowledge keepers or Elders is a really important component of any messaging. Communities are inundated with messages and information from outsider organizations who mean well, but maybe they didn't sit down and talk to the Elder or, you know, they're just kind of sending out the message that Health Canada sends out, or the message is contradictory maybe to what they know. And so, you know they've been hunting and trapping for hundreds and hundreds of years, and to get a message maybe about, I don't know, salmonella or something – find out how they've addressed those issues." (Participant 8)*

Participants explained the importance of developing balanced messaging (i.e., including not just risks but also benefits of foods), keeping messaging about health risks and country foods general and positive, and promoting country food. It was noted that being familiar with the political and cultural community climates is beneficial when developing messages to ensure they are relevant and appropriate.

Facilitators of dietary message dissemination and reception in the ISR

Participants described that messaging was best received by the public when delivered in person, involving hands-on components (e.g., cooking-based programs and on-the-land programs), discussion and storytelling. For example, a participant said,

> *"And like it goes back to that traditional [Inuvialuit] knowledge and how things are done up here, like people don't want to read a flyer from the government… or from whoever. They want a conversation, they want to sit down, have a cup of tea…" (Participant 13)*

A common view amongst interviewees was the importance of involving locals in the communication of messages. A participant explained,

> *"Well, I think it's really important… you have to consider who the voice is that's giving the message... And so for us it's really important to find someone who is passionate in the community, employ them, don't ask them to volunteer… Give them the skills, give them the knowledge, let them be the voice. Because it works so much better if somebody who understands the local culture and who has lived in the local culture explains these new ways of doing things or better ways of doing things." (Participant 13)*

Participants described how the public best receives dietary messages when those who disseminate messages use local pictures, visuals and social media; ask the public questions and listen rather than just talk; present messages clearly and simply, utilize engaging programming to deliver messaging, and incorporate programming with Elders. Participants also highlighted the need to review messages prior to communication, as is being done by the IRC and GNWT DHSS, for improved appropriateness and reception by the public.

Discussion

The present study sought to characterize dietary messaging in the ISR from the perspective of territorial, regional and local dietary message disseminators to further improve message communication in the region. We found that dietary messages disseminated to the public in the ISR are developed at all scales (federal, territorial, regional and local) and communicated by territorial and regional government health professionals, allied health professionals and representatives; regional and local food program coordinators; academic researchers; local leadership; and country food knowledge holders. Our findings indicate that messages developed at the federal level are typically not designed for northern Indigenous communities, and territorial messages are most often not tailored to Inuvialuit communities, whereas regional and local messaging are designed for the ISR with consideration of local culture, realities, food availability and preferences. It is well documented in Arctic environmental health risk communication literature that messages are most effective when they are regionally and locally tailored, providing

information and advice that accounts for social, economic, cultural and health factors specific to Indigenous populations (AMAP, 2015, 2021; Boyd & Furgal, 2019; Krümmel & Gilman, 2016). Regional and local health professionals, allied health professionals, representatives, and local food program coordinators are the primary communicators of public health dietary messages in the ISR. At the territorial and regional levels, some key informants were not involved in the development and communication of dietary messages for/in the ISR given their involvement in territory-wide messaging. Further, it was noted that at the regional and local levels, traditional food knowledge holders (e.g., Elders and harvesters) communicate their own messaging as desired about country foods through the sharing of Inuvialuit knowledge while harvesting and preparing country food in their community, often supported through territorial and regional government-funded programming.

Regarding the types of messages developed for/in the ISR by public health departments, our findings indicate that messages focus predominantly on promoting healthy store-bought food choices and providing nutritional information about store-bought foods. Messaging about country foods from public health departments typically promote the nutritional benefits associated with the consumption of country foods and the safety of country foods in the ISR from an environmental contaminant lens. These findings are consistent with previous research by Jeppesen et al. (2011) who compared types of food-based dietary guidelines disseminated in circumpolar regions, demonstrating some inclusion of country foods and First Nations, Inuit and Métis culture by the GNWT through public health messaging about nutrients found in foods and recommended servings of foods in each food group. This focus may be explained by the fact that dietary messages are primarily developed by federal, territorial, and regional public health departments to be communicated to the public in the ISR by local health professionals, allied health professionals, and food program coordinators. Given that dietary messages are largely developed for the ISR by public health departments located outside the ISR, messages focus heavily on western biomedical conceptions of food and physical health. These findings align with scholar Leslie Dawson's (2020) explanation that the dominant biomedical narrative of food in Canada reflects a Eurocentric worldview, framing food as nutrition for physical health. This Eurocentric worldview of food, apparent in most dietary messages developed for the ISR, overlooks Indigenous worldviews of health and food, including physical, cultural, spiritual and mental health (Dawson, 2020).

The results of this study demonstrate that when country foods are included in dietary messaging they are promoted as safe and nutritionally superior to store-bought foods, with some mention of cultural benefits of harvesting, preparing and consuming country foods. Importantly, although country foods and Indigenous worldviews of food appear less frequently in dietary messaging in the ISR than store-bought foods, developers and communicators of messaging expressed their desire to develop more country food

messaging to better reflect local culture and diets. Some participants expressed concerns with dietary messaging and distrust among Inuvialuit, which has previously been identified in Arctic risk communication literature (AMAP, 2021; Boyd et al., 2019). This distrust stems largely from the mistreatment of Indigenous peoples by the Canadian government, colonial policies and practices that (have) harm(ed) Indigenous food systems, cultures and wellbeing, and alarmist messaging from researchers and the government about high levels of contaminants in country foods, creating ongoing fear and distrust among many Indigenous communities, emphasizing the necessity for Indigenous involvement in message development and communication (AMAP, 2021; Myers & Furgal, 2006).

Barriers to dietary message development and dissemination in the ISR described in this research reflect similar challenges to developing and disseminating messages about contaminants in country foods described in Arctic environmental health risk communication studies, especially regarding lack of collaboration between stakeholders involved in communications, messaging that communities do not trust, and lack of inclusion of Indigenous culture and knowledge (AMAP, 2015; Furgal et al., 2005; Myers & Furgal, 2006). Facilitators of dietary message dissemination described by participants in this research reflect best methods for communicating about contaminant risk in country foods described in environmental health risk communication studies with Indigenous populations, particularly the importance of providing balanced and positive messaging about country foods, involving Indigenous peoples in the development and communication of messaging, developing messages that align with a community's cultural beliefs, using trustworthy people to deliver messages, and delivering simple, engaging messaging in person and via social media (AMAP, 2015; Boyd & Furgal, 2019; Krümmel & Gilman, 2016; Ratelle et al., 2018; Reinfort, 2015). Similar to the recommendations raised by some of our participants, Bjerregaard and Mulvad (2012) determined that simple dietary guidelines promoting cultural, social and physical benefits of harvesting, preparing and eating foods are preferred over detailed advice about serving sizes and food groups. Further, previous research by Sharma et al. (2010) reiterates the importance of involving locals in nutrition message development to ensure messages are culturally appropriate and reflect local values.

Our findings indicate that dietary messaging in the ISR intersects both Western biomedical and Inuvialuit knowledge systems and worldviews of health and food, elucidating the need for better representation of Inuvialuit worldviews, culture and values in dietary messaging through the co-development of more culturally relevant messaging in the ISR. Reflecting our findings, we suggest strengthening collaborations between ISR dietary message developers and communicators at all scales, especially with local country food knowledge holders and community leadership, to better reflect Inuvialuit knowledge and worldviews of food and health. Our recommendation reflects calls made in

Arctic environmental health risk communication literature for increased inclusion of Inuit perspectives in risk communication and food security initiatives via collaborations with affected communities to ensure messages are grounded in local culture and worldviews (AMAP, 2015; Boyd & Furgal, 2019; ITK 2021; Krümmel & Gilman, 2016). Further, as dietary messaging in the NWT predominantly follows a top-down model of information delivery, more participatory methods of message development and communication are needed, inverting the mainstream model of public health communications to community-driven and culturally relevant messaging, further developing trusting relationships and increasing the effectiveness of dietary messages (Dutta-Bergman, 2016; Krümmel & Gilman, 2016). Thus, we encourage non-Indigenous NWT dietary message disseminators at all scales to support Inuvialuit participation in dietary message development and dissemination to shift away from creating messaging *for* to *with* and *by* the ISR. Supporting our recommendation, it is well recognized that public health message communication efforts need to shift away from a top-down model of information delivery towards a more participatory communication approach, empowering communities to make healthy and safe food choices grounded in both science and Inuvialuit knowledge (AMAP, 2015; Dutta-Bergman, 2016; ITK, 2019).

Nevertheless, it is clear that dietary messaging (i.e., knowledge and awareness about healthy and safe food choices and behaviors) is only one factor influencing Indigenous peoples' ability to make positive dietary change (Willows, 2005). An interplay of environmental, social, socio-economic, and individual factors and inequities influence one's dietary decisions (Dutta-Bergman, 2005; Marcone et al., 2020). Therefore, continued efforts and policies to improve the social determinants of Inuvialuit health (e.g., food security, climate change and environmental contaminants, culture, housing, employment, education and mental wellness) are greatly needed in addition to locally tailored, culturally meaningful health communication in the ISR to promote healthy, safe and culturally appropriate food choices and behaviors (ITK, 2014).

Our findings support the call for increased collaboration with Indigenous communities during the development and communication of dietary messages by public health departments, yet it remains unknown whether involvement in the co-development of culture-centered dietary messages is desired by territorial, regional and local dietary message disseminators in the NWT and if so, what this process should look like in the ISR. Furthermore, there is a need to determine what Inuvialuit knowledge and local perspectives about food are desired to be shared in messaging, and how this knowledge should be gathered and shared during the future development and communication of dietary messages for/in the ISR from the perspective of territorial, regional and local health professionals, Inuvialuit knowledge holders and the public in the ISR. Reflecting a similar gap identified in Arctic risk communication literature, no dietary messages have been evaluated in the ISR to evaluate their effectiveness (AMAP, 2015). Thus,

future studies are needed to evaluate the dietary messages identified in this study to determine facilitators of communication and reception of these messages from the perspective of the public in the ISR. Further research is needed to account for the varying perspectives and experiences of federal, national, and local dietary message disseminators in all ISR communities, especially country food knowledge holders and the public, given that it was only possible to interview territorial, regional and local dietary message disseminators in Yellowknife, Inuvik, Tuktoyaktuk and Paulatuk due to the scope of the larger CFGH project.

Although we have identified a need to further increase Inuvialuit involvement in dietary message development and dissemination in and for the ISR, we would like to acknowledge the noteworthy steps territorial and regional public health departments in the NWT have taken to develop messages in partnership with Indigenous peoples that better align with communities' cultural beliefs and values about healthy and safe food. We appreciate the willingness of our territorial and regional government partners to collaborate with our research team and recognize the time, energy and resources required to develop respectful, trusting relationships with Indigenous community partners to effectively collaborate on dietary message initiatives.

This study makes an original contribution to research on public health communication about country and store-bought foods in the ISR by describing what dietary messages are developed and disseminated in/for the region, how and by whom. The findings from our research have informed the creation of the Inuvialuit Food Messages Survey designed to evaluate the effectiveness of dietary messages as part of the ongoing CFGH project. Our findings have also made an important contribution to research by providing recommendations to territorial and regional public health departments to further improve dietary messaging for/in the ISR (see Table 4). Overall, this study contributes valuable knowledge to further improving dietary messaging in the ISR as well as in other regions of the NWT through the recognized need for more participatory, culture-centered dietary messaging.

Table 4: Summary of recommendations for improved dietary messaging in the ISR and NWT

Recommendation	**Target audience**
1. Strengthen collaborations between territorial, regional and local public health dietary message disseminators, environmental monitoring and health researchers/professionals, local leadership and Inuvialuit country food knowledge holders to create culturally meaningful dietary messages grounded in Inuvialuit culture, knowledge and diet	All dietary message stakeholders in the NWT and ISR
2. Improve frequency of communication between dietary message stakeholders at all scales	All dietary message stakeholders in the NWT and ISR

3. Improve access to scientific information about the health risks and benefits of country and store-bought food choices and processes for local and regional health professionals, allied health professionals and cooking/nutrition program coordinators in the ISR	GNWT DHSS; NTHSSA Beaufort-Delta Region
4. Create ISR-specific messages promoting the nutritional, cultural, spiritual and mental health benefits of harvesting, preparing and consuming country foods, rooted in Inuvialuit worldviews of food	GNWT DHSS; NTHSSA Beaufort-Delta Region, IRC; researchers; local dietary message disseminators
5. Support Inuvialuit participation in dietary message development and dissemination, especially Elders	GNWT DHSS; NTHSSA Beaufort-Delta Region, IRC; local dietary message disseminators
6. Create ISR-specific recipes and nutrition/cooking program curricula, designed by Inuvialuit	GNWT DHSS; NTHSSA Beaufort-Delta Region; local dietary message disseminators; local country food knowledge holders
7. Collaboratively review messages with Inuvialuit country food knowledge holders and local public health dietary message disseminators to improve consistency, trustworthiness, and cultural relevancy	GNWT DHSS; NTHSSA Beaufort-Delta Region; IRC; academic researchers
8. Improve current methods of dietary message communication in the ISR by using preferred methods (e.g., social media and in person via cooking and on-the-land programs) and forming active collaborations between environmental monitors and health researchers and professionals to co-present country food contaminant messaging	GNWT DHSS; NTHSSA Beaufort-Delta Region; researchers; local dietary message disseminators; local leadership
9. Fund and support evaluation projects to begin evaluating the effectiveness of dietary messages communicated in the ISR and conduct impact assessments of messages on dietary behaviours in the ISR for both country and store-bought food messaging	GNWT DHSS; IRC; academic researchers; federal government

Conclusion

This participatory study characterized how public health dietary messages addressing the health and safety of country and store-bought food in the ISR are developed and disseminated through qualitative interviews with territorial, regional and local dietary message disseminators in the NWT. We provide novel insights about the types of messaging presently communicated, who is involved in the development and dissemination of messaging, and barriers and facilitators of message development and communication for and in the ISR. We recommend evaluating dietary messages in the ISR and further improving collaborations between Indigenous knowledge holders and dietary message developers at all scales to develop more culturally relevant messaging in the ISR and NWT, supporting Indigenous food sovereignty through participatory, culture-centered dietary messaging.

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Chapter 4: Informing the (Co-) Development of Culture-Centered Dietary Messaging in Tuktoyaktuk, Northwest Territories

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Abstract

Collaborative approaches to health communication about food grounded in Indigenous knowledges and cultures are needed across northern Indigenous communities yet preferences and best methods for this process remain understudied. This participatory study discusses how Inuvialuit (Inuit from the Western Arctic) knowledge and the perspectives of territorial, regional, and local dietary message stakeholders can inform the co-development of culture-centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT. A community researcher in Tuktoyaktuk conducted storytelling interviews with country food knowledge holders (n=7) and community members (n=3), and a talking circle with local public health dietary message disseminators (n=2) between June-July 2021. Key informant telephone and videoconference interviews with territorial and regional dietary message disseminators (n=5) were completed by the lead author in June 2021. Interviews were analyzed using thematic analysis. Our findings indicate that participants at all levels support increased inclusion of cultural and community perspectives about food to develop regionally and locally tailored dietary messaging. Although most dietary message stakeholders wish to be involved in co-development processes, some country food knowledge holders desire leading communications about country foods in Tuktoyaktuk. Informed by participants' experiences and needs, we provide recommendations for future community-led approaches to further (co-) develop and communicate effective, culturally meaningful dietary messaging that promotes Inuvialuit food sovereignty.

Keywords: Indigenous Health Communication; Indigenous Knowledge; Food Communication; Dietary Messaging; Country Foods; Store-Bought Foods; Inuit; Community-Based Research

Introduction

Nutrition communication aims to improve a population's nutritional well-being by communicating nutritional information to "influence knowledge, understanding, attitudes, decision-making processes, or behaviors" (Gavaravarapu, 2019; Mayfield, 2020, p. 8). In Canada, nutrition communication is developed and disseminated federally by Health Canada via dietary guidance, "evidence-based information and advice about making food choices that promote health and reduce the

risk of obesity and nutrition-related chronic diseases" (Health Canada, 2016, p. 1). The most prominent example of Canadian dietary guidance is Canada's Food Guide (CFG), a policy and educational tool designed to promote healthy food choices and reduce people's risk of nutrition-related chronic diseases (Health Canada, 2016). Dietary guidance is developed and communicated federally and implemented by provincial/territorial/regional governments, health professionals, academics and non-governmental organizations to support healthy living among Canadians (Health Canada, 2016; Government of Nunavut, 2012). Health Canada adapted CFG in 2007 to reflect the food systems of Indigenous peoples in Canada (*"Eating Well with Canada's Food Guide- First Nations, Inuit and Métis"*), yet this Indigenous Food Guide (IFG) was criticized for adopting a pan-Indigenous approach and prescriptively focusing on food groups and portion sizes (Health Canada, 2010; Wilson & Shukla, 2020). Overall, Indigenous-focused federal dietary guidance is greatly lacking, perpetuating dominant, Western biomedical narratives of food in Canada (Settee & Shukla, 2020).

Nutrition communication studies in Indigenous communities emphasize the importance of partnering with Indigenous peoples in the development and communication of messages (Colles, Maypilama & Brimblecombe, 2014; Verrall et al., 2006). Likewise, they recognize the importance of grounding messages in cultural and community knowledge, skills, values and worldviews in a way that provides culturally sensitive information and approaches to foster healthy food choices (Colles, Maypilama & Brimblecombe, 2014; Mayfield, 2020; Verrall et al., 2006). This culture-centered approach helps empower communities to make healthy and safe food choices informed by both science and Indigenous knowledge, improving the effectiveness of the communication effort to initiate behaviour change (Dutta-Bergman, 2016).

In particular, health risk communication scientists working in the Canadian Arctic have called for increased participatory approaches and better inclusion of local Indigenous culture and knowledges in country food risk message development and communication to ensure messages are relevant, trusted, culturally appropriate and respectful (Arctic Monitoring and Assessment Programme [AMAP], 2015, 2021; Boyd & Furgal, 2019; Dutta-Bergman, 2016; Judd et al., 2005; Krummel & Gilman, 2016). Despite the call for increased inclusion of local and Indigenous perspectives during the development of nutrition and risk communication initiatives, these studies have not addressed best methods for including local and Indigenous knowledges in messages. Further, it remains unknown whether involvement in the co-development of culturally relevant dietary messaging is desired by territorial, regional and local dietary message disseminators in the Northwest Territories (NWT) and Inuvialuit Settlement Region (ISR) and if so, what these approaches and co-development processes should look like. Likewise, no studies have sought to determine what Indigenous knowledge and local perspectives about the food system are desired

to be included in messaging in Arctic Indigenous communities, how this knowledge should be collected and utilized, and by whom.

As part of our larger transdisciplinary *Country Food for Good Health (CFGH)* study, we define dietary messages as information and advice addressing the health benefits and risks of country[3] and store-bought[4] food choices and processes (harvesting, trapping, fishing, buying, preserving, storing, preparing, cooking and consuming food) communicated by dietary message disseminators (e.g., public health professionals, government health representatives, academic researchers and Indigenous knowledge holders) to residents in the ISR with the goal of reducing harm and improving health. Our CFGH study established that territorial and regional health departments, local health professionals and allied health professionals in the ISR generally communicate dietary messages informed by federal dietary guidance, resulting in a lack of inclusion of Inuvialuit country food knowledges, cultural values and perspectives in current messaging (Gyapay et al., 2021). In addition to public health departments, local country food knowledge holders (Elders and harvesters) also communicate dietary messaging to relatives and their community through the practice and sharing of traditional food skills and knowledge (Gyapay et al., 2021).

Informed by our CFGH study findings and current research gaps, there is a need to address best methods to collaboratively co-develop and communicate culturally relevant dietary messages between territorial, regional and local dietary message disseminators, researchers and country food knowledge holders in the ISR. Consequently, the aim of this community-based participatory study was to determine how Inuvialuit knowledge and the perspectives of territorial, regional, and local dietary message disseminators, local country food knowledge holders, and the adult public[5] can inform the co-development of culture-centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT and the ISR. The objectives were to (1) Characterize existing gaps in culture-centered dietary messaging in the ISR; (2) Identify public awareness of current dietary messages in the ISR; and (3) Provide recommendations to further improve the development and dissemination of effective and culturally relevant dietary messaging for, in, and with the ISR.

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[3] 'Country foods' refers to animals, game birds, fish and plants harvested from the environment for human consumption. 'Country foods' is preferred by Inuvialuit, whereas it is often termed 'traditional food' by First Nations peoples and 'wild food' or 'game' in policy contexts. Study participants also referred to 'traditional food' and 'native food' when discussing country food during their storytelling interviews and talking circles and were left verbatim in the quotes.

[4] The terms 'store-bought foods' and 'market foods' were used interchangeably by study researchers and participants, referring to food sold in grocery stores.

[5] The term 'adult public' refers to adult community members aged 18+ residing in Tuktoyaktuk.

Methodology

Research Approach

This study employed a Community Based Participatory Research (CBPR) and decolonizing approach. A CBPR approach supported active and equitable collaboration with Inuvialuit community research partners, recognizing the legitimacy of Inuvialuit perspectives and knowledge systems (Jull et al., 2017). A decolonizing approach involved collaborating on research activities with Indigenous communities focusing on Indigenous perspectives and epistemologies (Datta, 2018a). This approach "upholds the pedagogical, political, moral and ethical principles that resist oppression and contribute to strategies that reposition research to reflect the unique knowledge, beliefs, and values of Indigenous communities" (Martin, 2012, p. 30). Our choice of research approach reflects our intention to support Inuvialuit self-determination, a prerequisite for Inuvialuit food sovereignty.

Reflecting our participatory approach, a letter of support was received from the Tuktoyaktuk Community Corporation for the CFGH project. Julia Gyapay involved community leadership and regional and territorial research partners from the initial stages of this study. For example, meetings with local leadership were held in Tuktoyaktuk in person in February 2020 and virtually in September 2020 to plan the study, receive feedback, and co-develop research materials. Given our inability to collaboratively complete in-person research activities during the COVID-19 pandemic, Gyapay developed a qualitative interview training toolkit and virtually hired, trained and mentored an Inuvialuk community researcher, Kanelsa Noksana, in Tuktoyaktuk between April-May 2021. Together, Gyapay and Noksana reviewed and amended the ethics forms, interview guide questions and research methods for clarity and cultural appropriateness. Importantly, by hiring a community researcher to lead in-person research activities, our academic research team fostered greater research capacity and Indigenous self-determination for research activities in Tuktoyaktuk, which we hope to see continue post-pandemic. Research updates were shared with our research and community partners via quarterly newsletters and virtual group meetings in 2020 and 2021.

Methods

Participant sample and recruitment

Four methods were used in this study: (1) Storytelling interviews (Group A) with Tuktoyaktuk country food knowledge holders (Elders and harvesters knowledgeable about the local food system and traditional country food practices); (2) Storytelling interviews (Group B) with Tuktoyaktuk adult community members aged 18+ interested in improving messages about healthy and safe food choices they see and hear in their community; (3) Talking circle with local public health dietary message

developers and disseminators in Tuktoyaktuk (health professionals, community health workers); and (4) Key informant interviews with territorial and regional dietary message developers and disseminators (government representatives at the Government of the Northwest Territories (GNWT) Department of Health and Social Services (DHSS) and Environment and Natural Resources (ENR) in Yellowknife and the Inuvialuit Regional Corporation (IRC) in Inuvik and regional allied health professionals in Inuvik with the Northwest Territories Health and Social Services Authority (NTHSSA) Beaufort Delta Region) who had been interviewed previously during the 2020 CFGH key informant interviews. These four participant categories were selected based on the findings and gaps in perspectives identified from the previous 2020 key informant interviews, promoting increased diversity in perspectives.

Storytelling interviews

Storytelling interviews are an effective and culturally appropriate Indigenous research method that privilege Indigenous worldviews, values and voices (Datta, 2018b; Rieger et al., 2020). Oral storytelling is central to many Indigenous cultures, and is intricately connected with Indigenous ontologies, epistemologies, and relational ways of knowing (Bird et al., 2009; Datta, 2018b; Smith, 2012). Storytelling interviews are a useful method to resist dominant, Western research methods by honouring Indigenous voices and legitimizing Indigenous stories as a form of scientific knowledge (Datta, 2018b; Kovach, 2009). We employed storytelling interviews to enact our CBPR and decolonizing approaches, bridge Western and Indigenous ways of knowing, and foster relational engagement with participants (Datta, 2018b; Kovach, 2009; Wilson, 2008). Given that our research blends Inuvialuit knowledge and public health messaging, the latter half of the storytelling interviews involved semi-structured interview questions about whether such Inuvialuit knowledge is desired to be included in future public health messages and if so, what this process should look like. We chose to blend Indigenous and Western research methods during the storytelling interviews to best align with the two interview topics of Indigenous knowledge and public health dietary messaging.

Talking circles

Talking circles (often referred to synonymously as sharing circles) promote respectful, reciprocal, and culturally appropriate dialogue occurring in a circle: a symbol considered to be sacred by many Indigenous peoples (FNP, 2009; Lavallée, 2009). The use of talking circles to gather Indigenous knowledge is viewed as a more culturally appropriate research method than Western data collection methods, such as focus groups, given that participants have the flexibility to share stories relating to the research questions (Kovach, 2009). The general principles of talking circles involves introducing oneself, speaking one person at a time, listening respectfully to the person speaking, talking ‘from the heart’, and keeping what is shared in the circle in confidence (First Nations Pedagogy Online, 2009). We chose to

employ talking circles, not focus groups, led by the community researcher to resist Western epistemology and research methods and to enact participatory, decolonizing research.

Key informant interviews

Key informant interviews are qualitative, in-depth interviews of a non-random group of experts selected for their knowledge of their organization or the subject matter (Parsons, 2011). Given that participant selection is not random, a variety of key informants must be selected to obtain a nuanced understanding (Parsons, 2011). Key informant interviews typically employ closed- and open-ended questions and are often used in conjunction with other data collection methods to learn about an organization, program, problem or topic (Parsons, 2011). We chose to conduct key informant interviews with territorial and regional dietary message stakeholders to gain a detailed understanding of their current involvement in co-developing culture-centered dietary messaging in, with and for the ISR and preferences for future culture-centered dietary message processes.

Data sources and procedures

A list of potential participants for the storytelling interviews and talking circles was developed in collaboration with the community researcher, and supplemented via purposive, snowball sampling with another CFGH community researcher and local health professional in Tuktoyaktuk. Gyapay developed a list of potential participants for the key informant interviews based on their prior involvement in the CFGH study, and an additional participant was invited to increase sample diversity. Potential participants were recruited by telephone and email.

Noksana conducted 10 storytelling interviews (A and B) in June 2021 and a talking circle with two participants in July 2021 in Tuktoyaktuk. Gyapay conducted 5 key informant telephone and videoconference interviews in June 2021. Methods were adapted due to COVID-19 travel restrictions. Pilot interviews (n=2) were initially completed by Noksana with Gyapay to ensure reliability between researchers. Open-ended questions were asked throughout the interviews, and probes were utilized to elicit further information and clarify participant responses. Storytelling interviews (A and B) lasted approximately 30 minutes each and the talking circle and key informant interviews lasted approximately 60 minutes each. All interviews were audio-recorded with permission. Participants selected to provide either verbal or written consent. All interviews were guided by an interview guide, developed by Gyapay and reviewed by Noksana. Demographic information (gender and self-identified ethnicity) was collected with participant's consent to understand the role of demographics on preferences for dietary message development and dissemination. Interpretation services were offered, but not requested by any

participants. Storytelling interview and talking circle participants received a $50 grocery gift card in appreciation of their time and commitment.

The audio recordings were transcribed, reviewed, and analyzed utilizing Braun and Clarke's (2006) guide to thematic analysis and Saldaña's (2016) first and second cycle coding methods, combining inductive and deductive coding approaches. Descriptive coding was utilized while employing NVivo® version 12 qualitative analysis software (Bradley et al., 2007; Saldaña, 2016). Member checking enabled participants to approve publication of their quotations, further developing trusting relationships and engaging participants actively in the research analysis process (Carlson, 2014; Creswell, 2005; Green & Thorogood, 2018). Since Noksana was no longer in the community, another community researcher returned transcribed data to country food knowledge holder participants in person and Gyapay returned transcribed data to key stakeholders by email. Findings were reviewed with the community researcher and our territorial and regional partners, and are being returned to all participants via infographic posters and a summary report to project partners. All storytelling interview audio files were provided to the Inuvialuit Regional Corporation to honour the principles of OCAP® enabling the data to be owned and controlled by an Inuvialuit organization. This study received ethical approval from the University of Waterloo (ORE#42948) and a Scientific Research License (No. 16832) from the Aurora Research Institute.

Results

We first summarize the Inuvialuit food system and current practices in culture-centered dietary messaging in, for and with the ISR from the perspective of all participants (see Table 5 for participant characteristics). We then discuss residents' awareness of public health dietary messages in Tuktoyaktuk. We describe successes and challenges of collaborative culture-centered dietary messaging efforts in the ISR and end with a summary of preferences and recommendations for collaboratively developing and disseminating culture-centered dietary messaging in Tuktoyaktuk and the ISR. We include participant quotations that are reflective of the overarching themes.

Table 5: Interview types and participant characteristics from culture-centered dietary message interviews

Method	**Number of participants (*n*)**	**Stakeholder type**	**Gender**		**Self-identified ethnicity**		**Reference Code**
			Female	**Male**	**Inuvialuit**	**Non-Inuvialuit**	
Storytelling interviews A	7	Tuktoyaktuk country food knowledge holders (harvesters and Elders)	29%	71%	100%	N/A*	SIA 1-7

Storytelling interviews B	3	Tuktoyaktuk community members aged 18+	100%	0%	33%	66%	SIB 1-3
Talking circle	2	Tuktoyaktuk health professionals and allied health professionals	50%	50%	50%	50%	TC 1-2
Key informant interviews	5	Territorial (GNWT DHSS & ENR) and Regional (IRC and NTHSSA Beaufort-Delta) dietary message developers and disseminators	60%	40%	0%	100%	KII 1-5

*Storytelling interview participant eligibility criteria included Inuvialuit country food knowledge holders

The Inuvialuit food system

Tuktoyaktuk country food knowledge holders described their understanding of the healthfulness and safety of country and store-bought foods, indicating their preference for country foods. All participants described healthy food as country food and most recounted growing up eating country foods if they did not attend residential school. A sentiment expressed by all country food knowledge holders interviewed was summarized by the following participant's description of healthy food:

> *"Healthy foods mean traditional food, just more useful to us because we grew up with it. And I know that it works because everybody's going back to traditional foods. Processed foods are not very good as we know, but fruits and vegetables are good too, but traditional food is the most important that we grow up with. So we're still using it as of today." (SIA6)*

In contrast, most participants noted that processed store-bought foods are unhealthy and some described chronic diseases, such as obesity and diabetes, stemming from the consumption of unhealthy store-bought foods. One participant noted that consuming country foods is both healthy and safe. They explained that the health benefits of consuming whale, particularly muktuk, and seal outweigh potential contaminant risks and that these country foods are healthier than store-bought foods by stating,

> *"…these native foods [country foods] are way more healthy to eat than store bought food. It outweighs the contaminants that are in animals that we eat…you're better off eating it than to not eat it." (SIA2)*

Dietary challenges in the ISR

Most, but not all participants noted that climate change is challenging the safe preparation of country

foods, requiring them to change the timing of harvesting and food preparation due to warmer weather. A commonly discussed example was the need to harvest beluga and prepare muktuk later in the summer to prevent spoiling and botulism due to hot temperatures. A participant explained this challenge saying:

> *"It's really changing because summertime it gets too hot and you've got to do the whale a lot quicker than when it used to be kind of cold. Usually we'd keep it hanging up for two days, but when it gets too hot we leave it up for one day. And that's no good… With the sun up 24 hours a day you've got to do it a lot quicker and it, and you leave a tarp on it too long it spoils right away so you've got to really watch because the sun is the one that really causes botulism or something on the whale and it gets really poisonous. So you've really got to take care of your whale." (SIA7)*

Two country food knowledge holders described how they became severely ill with botulism poisoning as a result of improper storage in hot temperatures, causing the muktuk to spoil. They described learning how to properly prepare muktuk safely in warmer weather after this incident and have shared this safety knowledge with others. One participant recounted this experience,

> *"But it did just about take my life. But I still continue to make it. You know, after a while we continued to make it and we still eat it. So it's important, especially muktuk, like I said you know, you have to be really careful." (SIA2)*

Some participants noted they shared their knowledge of safe country food preparation and storage methods with others when hunting, preparing foods outside in the community and talking to others. Relating to store-bought food challenges, a participant noted that healthy store-bought foods are often unavailable or unaffordable in the ISR, challenging residents' ability to make healthy food choices,

> *"Because unfortunately in those smaller communities their healthiest option just isn't an option… Like often there's not any [store-bought foods] that aren't unsweetened or there's things that aren't unsalted or you know it's just, you just have to work with what's there and it's maybe not necessarily the healthiest or the best… (KII4)*

ISR culture-centered dietary messaging

Underscoring the need for the present study, several territorial and regional dietary message disseminators noted that current messaging in the NWT focuses heavily on nutrients and nutritional benefits of foods rather than adopting a more holistic and high-level perspective, as expressed by the following participant:

> *"So messaging around food, especially from government entities, tends to be very nutrient focused. "Meat has iron, milk has vitamin D, vitamin A and calcium." And I'm not entirely sure we need to be that specific. I think diet messaging should start, and I think it is, I think Health Canada and dietitians in Canada are starting to get on board with this, is use more general concepts when we're talking about diet. So what that might look like here is "country food is*

> *superior meat", or "it's equal or superior to store bought meats"… You know, "eat a balanced diet that includes country food as well as plants". Like getting a more general approach to messaging, emphasizing above all else that country food is both nutritious and safe, specifically from a contaminants perspective, that is number one thing that people always, always ask." (KII2)*

Regional and local dietary message disseminators talked about tailoring messages to specific ISR communities given their knowledge of local culture, food availability, and needs. However, territorial dietary message disseminators usually do not develop messages specific to the ISR, creating challenges with representation and inclusion of Inuvialuit culture in messaging at the territorial level. Addressing this gap, a participant noted the GNWT has made efforts to better represent Inuvialuit communities, culture and country foods in their general food security messaging after being informed of this omission from an Indigenous advisory board.

A country food knowledge holder highlighted the harm that territorial messaging warning about contaminants in country foods lacking Inuvialuit input has created in the ISR, especially the fear of consuming muktuk and seal. Inuvialuit have advocated for messaging to be modified to reflect the health benefits of consuming country foods. Consequently, there is a need for collaborations between the local Community Corporations, Hunters and Trappers Committees, IRC, harvesters, researchers and public health dietary message disseminators in the NWT when developing and communicating messaging to ensure messaging is balanced and takes into consideration local culture and values:

> *"I think it's just important that the government have to start listening to what, you know when Elders speak about our traditional food because I've seen them try to put the fear in people, you know, and I felt it was really wrong at the time, you know, people wondering whether it's still safe to eat our food which is full of crap as far as I can see. You know, we shouldn't be afraid to eat our native food, we shouldn't. You know, even if they do have contaminants, it outweighs the benefits that we get from other parts of it…" (SIA2)*

Relating to dietary messages addressing climate change, participants described how messaging typically does not address the safety of country foods themselves but rather the safety of harvesters when out hunting or fishing. Similarly, messaging from the GNWT DHSS addressing the safety and nutrition of country foods does not address climate change directly. Rather, messaging addresses harvester safety or new species available in communities given changing migration patterns.

Current practices of culture-centered dietary messaging

Next, we describe territorial, regional and local dietary message stakeholders' involvement in developing and/or disseminating culture-centered dietary messaging in, for and with the ISR to contextualize current practices.

Involvement in culture-centered dietary messaging

We sought to determine which dietary message stakeholders are currently incorporating traditional knowledge and local perspectives about food in their messaging for the ISR and how. We found that territorial and regional dietary message stakeholders from the GNWT DHSS, GNWT ENR, NTHSSA Beaufort-Delta Region, and IRC and local dietary message stakeholders from Tuktoyaktuk, including country food knowledge holders and community nutrition program coordinators, are involved in developing and/or disseminating messages about food in/for the ISR that include traditional knowledge and local perspectives (see Table 6).

Table 6: Role of territorial (NWT), regional (ISR) and local (Tuktoyaktuk) stakeholders in the development and/or dissemination of dietary messages incorporating community and cultural perspectives about food in/for the ISR, and approaches employed

Dietary message department/stakeholder	Role in culture-centered dietary messaging and target audience	Methods for including community and cultural perspectives in current messaging
GNWT Department of Health and Social Services (DHSS)		
Office of the Chief Public Health Officer (OCPHO), Advisor (Yellowknife)	• Develops and disseminates country food consumption guidelines and health messages about contaminants in country foods to NWT public • No ISR-specific messages	• Consults with Indigenous community leadership to inform message development and communication based on Indigenous knowledges and preferences • Example: Fish Consumption Guidance (GNWT, n.d.-a).
Office of the Chief Public Health Officer (OCPHO), Health professional (Yellowknife)	• Develops nutrition messaging about country foods and store-bought foods to NWT public • No ISR-specific messages	• Develops and reviews messages with GNWT Indigenous advisory board to include Indigenous knowledge about country foods, traditional harvesting and preparation skills and determine best methods of communication • Develops messages about country foods with country food knowledge holders and local health professionals across the NWT • Example: Traditional Food Fact Sheets (GNWT, n.d.-b).
GNWT Department of Environment and Natural Resources (ENR)		
On-the-Land Unit (Yellowknife)	• Develops and disseminates messaging about safe and culturally respectful country food harvesting practices to NWT public • No ISR-specific messages	• Works collaboratively with Indigenous governments, organizations and other partners to develop and include Indigenous knowledge about safe and respectful harvesting practices • Example: Hunter Education Program (GNWT, n.d.-c).
Northwest Territories Health and Social Services Authority (NTHSSA)- Beaufort-Delta Region		
Regional allied health professionals (Inuvik)	• Develops and disseminates messaging about nutrition, healthy country and store-bought food choices, and healthy cooking to ISR	• Develops and modifies messages to promote country foods and healthy store-bought food choices available in ISR communities

	public through programming and client appointments • ISR-specific messages	• Collaborates with country food knowledge holders to disseminate messages and participate in workshops • Example: "Beaufort Delta Food Guide", a modified Canada's Food Guide 'healthy plate' poster incorporating Inuvialuit country foods (see Figure 9, Chapter 4 Attachment)
Local health professionals and community health workers (Tuktoyaktuk)	• Develops and disseminates messaging about nutrition, healthy country and store-bought food choices and healthy cooking to ISR public through health promotion programming and patient assessments • ISR-specific messages	• Develops and modifies messages to promote country foods and healthy store-bought food choices available in ISR communities • Collaborates with country food knowledge holders to participate in workshops • Example: Promoting country food consumption during Well Child clinic visits with mothers
Inuvialuit Regional Corporation (IRC)		
Health and Wellness Division (Inuvik)	• Does not develop dietary messaging • Supports dissemination of ISR-specific messages developed by communities	• Provide opportunities for Inuvialuit to disseminate their knowledge about healthy, safe and traditional country food practices through workshops and programs in the ISR • Example: Country food preparation workshops led by Elders
Tuktoyaktuk		
Tuktoyaktuk country food knowledge holders (Elders, harvesters, fishers, trappers)	• Disseminates traditional knowledge about healthy and safe country food choices and safe harvesting and food preparation skills to the public • ISR and Tuktoyaktuk-specific messages	• Community and cultural perspectives exist through the sharing of Inuvialuit knowledge by local country food knowledge holders • Example: Personal country food preparation demonstrations and harvesting trips
Tuktoyaktuk community nutrition program coordinators (health professionals and community health workers)	• Develops and disseminates messaging about healthy country and store-bought food choices through recipes and cooking programming to the public • ISR and Tuktoyaktuk-specific messages	• Develops and modifies messages and resources to promote country foods and healthy store-bought food choices available in ISR communities • Collaborates with country food knowledge holders to participate in workshops • Example: Healthy Family Collective Kitchen program incorporating country foods in recipes

At the territorial level, the GNWT DHSS develops messages in partnership with Indigenous communities and the GNWT's Indigenous advisory board. These stakeholders provide direction as to how the GNWT should engage with communities to develop messaging, who should be involved, what messages should address, and preferred methods of message dissemination. The GNWT also consults communities to record Indigenous knowledge about harvesting and food preparation practices about specific country

foods when developing country food dietary messaging. For example, the GNWT DHSS contacted harvesters and cooks across the NWT when developing the *Traditional Food Fact Sheet* series to include their Indigenous knowledge about country foods. Connections were facilitated by the Community Health Representatives (CHRs), trained liaisons who provide community health services in collaboration with local health practitioners.

Unlike the GNWT DHSS, the IRC does not formally gather and share community and cultural perspectives about food since they do not develop or disseminate dietary messages to beneficiaries. Rather, the IRC employs Inuvialuit and invites Elders to share knowledge about the Inuvialuit food system during programming. Thus, reflecting its larger purpose, the IRC supports Inuvialuit to directly share their knowledge about healthy and safe food practices with their community through their cultural teachings.

At the local level, a health professional noted they utilize the internet to find suggestions for country foods their clients could consume tailored to their health needs. They noted utilizing *Canada's Food Guide for First Nations, Inuit and Métis* to encourage the public to incorporate country foods into their diet saying,

> *"So, if I'm talking with a patient that maybe needs a little bit more fibre in their diet, I can help them just Google it and we, you know, we look for credible websites and then we'll come up with a list of foods… and so you can actually find traditional foods online that are more specific to the northern diet, right… we have access to Canada's Food Guide, but the northern version as well. So, it includes traditional foods… there's seal meat on there, and there's char, and caribou, and muktuk and that kind of stuff. So, it'll show you which part of the food guide it's part of and then how to kind of incorporate that into your diet as well." (TC2)*

Importantly, local country food knowledge holders (Elders, hunters, fishers and trappers) disseminate dietary messages in their community by sharing their knowledge about the Inuvialuit food system, including harvesting, trapping, fishing, preserving, storing, preparing and cooking country foods. Inuvialuit country food knowledge holders described knowing which country foods are healthy and safe to harvest and eat by utilizing their Inuvialuit knowledge about country foods, learnt from experience as well as passed down to them from their parents, grandparents and other relatives. Inuvialuit country food knowledge holders teach younger relatives how to determine the health of animals and safely harvest and prepare country foods through demonstrations and hands-on practice during harvesting trips and when preparing foods at home. As one participant explained:

> *"I learn [teach] them on hand and hand with my relatives or take them out hunting or camping and as we do down here we invite anybody to come and watch and learn as we do." (SIA6)*

Awareness of public health dietary messages in Tuktoyaktuk

We sought to determine country food knowledge holders' and the public's awareness of public health dietary messages to better understand the current state of messaging in the ISR. Some but not all country food knowledge holders were aware of dietary messages promoting healthy and safe food in Tuktoyaktuk. Those who were aware of existing dietary messaging described seeing posters at the local health center, at Healthy Babies and Healthy Families programs and hearing or seeing messages about healthy food choices from doctors, commercials on TV, and Facebook posts. Importantly, one participant identified Elders as important local dietary message disseminators, highlighting the reality that dietary messages in Tuktoyaktuk are not solely developed and communicated by public health departments; Inuvialuit knowledge is another form of dietary messaging. The participant explained:

> *"And then from our knowledge too, our Elders have a lot of knowledge of that too so don't forget about them." (SIA6)*

Of the dietary messages seen and heard, some but not all included messages promoting country foods. As one participant described,

> *"The doctors always say the, you know the traditional foods is more healthier to have than our processed foods." (SIA6)*

Similar to the country food knowledge holders interviewed, some residents recalled seeing and hearing dietary messaging in Tuktoyaktuk while others could not recall messaging. One resident remembered seeing posters promoting healthy store-bought food choices developed by the CHR and another described hearing messages promoting eating healthy store-bought foods through the Healthy Family program, Prenatal Nutrition program, posters from Nutrition North Canada, and posters from the IRC explaining how to safely prepare muktuk. A resident described messages they heard from the Nunavut Food Guide promoting the consumption of country foods utilized during the Healthy Babies programming and messages promoting harvesting, fishing, and trapping they had seen on the TV, radio, posters and newspapers from the federal government, GNWT and Government of Nunavut over the past decades. Importantly, an Inuvialuk participant noted they receive messages about country foods primarily from their family, reflecting the perspective articulated by a country food knowledge holder. One participant mentioned hearing fewer messages encouraging the consumption of country foods in Tuktoyaktuk in comparison to messages encouraging the consumption of healthy store-bought foods and indicated the need for further messaging promoting country foods.

Collaborative culture-centered dietary messaging successes and challenges

Existing collaborations with communities

Territorial and regional dietary message disseminators collaborate with communities in various capacities. The GNWT DHSS OCPHO collaborates with community leadership when developing country food consumption notices to determine the frequency of consumption and whether a contaminants advisory is necessary to issue or not. As one participant described,

> *"So one of the important part of, basically the perspective, you know getting the, and seeking out the Indigenous traditional knowledge… for example, like consumption frequencies. So when we're given data on certain contaminants and we run the quantitative risk analysis, one of the input factors in those calculations is consumption frequency. And that's where we definitely do consult with… the relevant Indigenous communities and their representatives on that particular matter." (KII1)*

Several territorial and regional dietary message disseminators noted they collaborate closely with CHRs in the ISR to disseminate dietary messaging on their behalf and bridge local connections to seek out local perspectives and knowledge about food when developing messaging.

In contrast, territorial and regional dietary message disseminators described numerous challenges faced when collaborating with communities to develop dietary messaging. For example, one participant described encountering difficulties when country food knowledge holders disseminated dietary messaging of their choosing without input from territorial and regional dietary message disseminators, creating confusing messaging. Challenges with high turnover rates of local health professionals, such as nurses, was noted by one participant, impeding collaborations with local dietary message disseminators. However, it was noted that CHRs have lower turnover rates in the ISR in comparison to nurses and physicians given that many are from the community, therefore they are good resources for collaborations. A regional allied health professional expressed a lack of collaborations with others in the same position across the NWT to develop dietary messages and resources, particularly about country foods, noting potential challenges with collaborations given regional differences,

> *"Like we, up here in the Beaufort Delta, are really unique, like we don't do, there's nobody else that does the same type of work that we do. So I've never honestly asked anybody about what they do for resource development, but I kind of don't think there is much else being done... So sometimes we'll reach out to each other to be like "oh does anybody have anything for this or that?", but yeah as far as collaborating for resource development there's not been any of that." (KII4)*

Several participants noted that the time, resources and communications required to improve and develop new messaging and programs focusing on country foods and Inuvialuit knowledge is a barrier given that

local and regional dietary message disseminators are strained by other job demands. Another barrier raised was the disconnect between community, government and academic timelines and budgets, impeding the building of trusting relationships between researchers and local, regional and territorial dietary message disseminators to collaborate on message development. A participant expressed this challenge:

> *"I think again is that collaboration from the very beginning and the conversations, I don't think, not everyone realizes the importance of those conversations and what they mean to building relationships and doing the work and you have to have that time to allow for that negotiation and that back and forth and the figuring things out together. And of course, on the flip side, as a challenge you know, both communities and governments have very specific deadlines or time frames for things or you know, money runs out or all of that kind of stuff. So balancing that openness, that flexibility, that building from the ground up with needing to show deliverables and progress is certainly a challenge." (KII5)*

Difficulties collecting and communicating cultural food knowledge

A challenge encountered by a participant when seeking to include cultural knowledge in dietary messaging was the resistance among some Inuvialuit to communicate their knowledge in written form. Further, country food knowledge holders often have different preferences for methods of harvesting and preparing country foods, which has created difficulty for territorial and regional dietary message disseminators to determine which knowledge to communicate when developing a message. Reflecting the need for collaborations with local country food knowledge holders, challenges of creating culture-centered dietary messages for the ISR by non-Inuvialuit were noted. A participant described that communities are interested in accessing more country food recipes but if non-Inuvialuit health professionals are developing these resources, it is difficult for them to include country foods, and consequently Inuvialuit knowledge, given their lack of knowledge of the local culture and food system. This participant also highlighted the lack of cultural awareness training and mentorship available to non-Indigenous health professionals working in the ISR by saying,

> *"… I sometimes wish like as [a health professional], I wish there was just more… like training or orientation provided in regards to that because they really don't get any introduction to that when we come into these roles… I know we have a new cultural awareness training online… but yeah or even like having someone that you can connect with when you're in these roles to kind of guide you through it. Yeah it's tough, it's just kind of like when you start these positions like you're kind of on your own to kind of like figure it out and sort it out and learn." (KII4)*

Regarding lack of access to information to develop messages promoting country foods, a local health professional noted they would benefit from having access to scientific research articles presenting the nutritional benefits of country foods found in the ISR in comparison to store-bought foods to support their

work and dietary recommendations to patients, which they currently lack:

> *"… there's a lot of studies about non-traditional foods, like the healthy ones, the unhealthy ones, but I find like there isn't too many actual studies that I can refer to, to back up my evidence, right. A lot of the stuff is just some stuff that I've heard from other [health professionals] or even Elders and it does make sense. But it's, like I wish that there were actual studies that would show us, like OK like, why is caribou that much better, like does it, you know, how much iron does it have compared to beef or, you know. What is the, you know, what are the benefits for your health from eating traditional foods versus non-traditional foods and actually looking at numbers…" (TC1)*

Recommendations for culture-centered messaging in the ISR

We provide participant recommendations for co-developing and disseminating culture-centered dietary messaging in the ISR, including who should be involved in message development and dissemination, how community and cultural perspectives should be incorporated in messaging, and types of messages desired to be communicated.

All participants agreed they would like to see more Indigenous knowledge and community perspectives about country food included in future dietary messaging in the NWT and ISR. Local country food knowledge holders described the importance of promoting country foods in messaging given their nutritional and cultural benefits and the importance of passing country food preparation skills and knowledge on to youth for cultural continuity, safety, and the teaching of Inuvialuit values. A resident explained further saying:

> *"Yes. Because it's a part of the culture and in order for culture to continue then people need to understand the - how the food fits into it and how the culture fits into the food." (SIB2)*

Several participants reflected on the importance of collaborations with local dietary message disseminators and community members to create messages that are more culturally relevant and respectful. A participant summarized this sentiment by saying:

> *"Well I think it's inherently important to work together, you know and when we have representatives from the relevant stakeholders group, then it makes for basically a product that comes out that I think is much, much better at the end of the day than you know, doing it with one set of lens as opposed to multiple lens… So this is why having that sort of more grounded and realistic understanding and you know, this understanding can only be reached in consultation with our partners, Indigenous partners" (KII1)*

Effective collaborations for culture-centered messaging

All residents and local health professionals agreed the IRC and GNWT DHSS should collaborate with

them or others in their community when developing messages about healthy foods. A resident recommended the IRC develop messages in partnership with Elders and health professionals in the community as they are trusted sources. Importantly, it was noted that the IRC and GNWT DHSS should communicate with communities to determine what dietary messaging projects they can support and fund.

Several country food knowledge holders felt that the GNWT should transfer leadership to communities to develop and disseminate dietary messages themselves rather than the government prescriptively developing messages for communities. Similarly, a common view amongst participants was that collaborations with Indigenous communities are needed when developing dietary messages to shift away from the development of messages *for* the ISR to the development of messages *with* or better yet, *by*, the ISR, decolonizing dietary messaging:

> *"I think my experience is that working collaboratively and working together to identify the key questions, challenges, concerns, all of that and then you know respond accordingly, I think has to happen with multiple knowledge systems together or needs to be grounded in Indigenous knowledge systems. I think we often kind of try to figure out how to fit it in versus starting from place as a site of meaning right, and then building outwards how we do that." (KII5)*

Several ideas for future collaborations were recommended by local health professionals. For example, a participant noted that increased collaborations between nurses and allied health professionals in Tuktoyaktuk are needed to improve message reception by the public. Another participant suggested having a seminar for all CHRs in the ISR to learn more about nutritional information related to country foods to be able to share with the public:

> *"And so, I wonder if the Community Health Reps in the Beaufort Delta or the ISR were able to sit on a seminar that teaches them a little bit more about traditional foods and just gives them a few good pointers. Then they could pass that information onto the patients that they see…"(TC1)*

A participant proposed hiring a dietitian specializing in country foods to travel to the ISR communities to provide local health professionals with additional knowledge and resources they can utilize when disseminating information about country foods to the public. A health professional described their interest in partnering with an Inuvialuit cultural coordinator in their department and connecting with more country food knowledge holders during the development of messaging and programming to better include Inuvialuit knowledge about country foods. Reflecting this recommendation, another participant explained how the IRC hires Inuvialuit knowledge holders to deliver country food programming, facilitating the communication of Inuvialuit knowledge about country foods to the ISR in a culturally appropriate way:

> *"…our department seems to rely on recruiting kind of people who have a strong reputation in the communities who are around, to come join our services and we and we don't really prescribe or tell them what they say, they just kind of know what to say, or they have their own bit that they're going to say. So you don't see us being too prescriptive with that messaging, but we know the right people to get to deliver the message." (KII2)*

Reflecting the perspectives of other participants, a resident suggested collaborating with students when developing messages to provide youth with a sense of agency:

> *"And I think, like the young people need, you know, sort of they need to be included, so that it doesn't seem like something that's dictated to them, but something rather that they've participated in the development of. I mean it's really hard to get young people to buy into something that they haven't been part of. So, I think any time we can include not just the Elders, but you know, so the collaboration between the Elders and youth is a good strategy." (SIB2)*

Collecting and communicating local perspectives and knowledge about food

Participants described the importance of acknowledging that Indigenous communities are experts on their country food system and have been involved in healthy food communication since time immemorial through the sharing of Inuvialuit knowledge about harvesting and food preparation practices. Importantly, it was noted that acknowledging the historical traumas Indigenous peoples have faced is necessary when developing dietary messaging about food, particularly surrounding the content and quantity of information provided:

> *"But I think that's something we miss is… really creating that space for messaging is so important. And I think recognizing too… that how we share and communicate information with people who are, who've gone through a lot of trauma is very different… the idea that we need to be meeting people where they are, but also sharing it in a way where they get the information they need without being overwhelmed and recognizing that if you're, you know if you're trying to survive, you don't want a lot of information on what the arsenic levels in moose kidneys are. You know? You need to know, 'can I eat that kidney'?" (KII5)*

A suggested method for territorial and regional dietary message disseminators to collaboratively gather Inuvialuit knowledge with local dietary message disseminators is asking a question to multiple community knowledge holders and verifying the content through local leadership. Incorporating questions in existing nutrition and cooking programming was also suggested as a useful method to collect community member's perspectives. Public engagement sessions were discouraged as a method of gathering local perspectives given the volume of sessions happening in communities. At the territorial level, ensuring Indigenous peoples, such as the GNWT's Indigenous advisory board, guide the

development of dietary messages about country foods in collaboration with the DHSS was noted as necessary to develop effective and culturally appropriate public health dietary messages.

Creating simple, high-level messages, incorporating visuals, delivering messages orally, in person and through Facebook, holding meetings, events or workshops on the land when sharing and collecting local knowledge and perspectives about food, and involving communities, especially youth, in the development and communication of messages was suggested as preferred methods for gathering and sharing Inuvialuit knowledge and local perspectives in dietary messages by territorial, regional and local dietary message disseminators.

Regarding preferred approaches to communicating dietary messages about country foods, participants wished to see cookbooks, posters and brochures with local art and photos, Facebook posts, and public service announcements on CBC radio, the CBC North TV station, and the bingo channel. Effective methods of disseminating messaging in Tuktoyaktuk described by participants included posters displayed in public locations (e.g., school, community hall, grocery stores, hamlet and community corporation offices, and youth center), radio, TV announcements, and Facebook posts. A local health professional suggested creating pamphlets for the CHR to distribute at the school, community hall and at the grocery stores. Several participants mentioned the importance of translating dietary messages in the local Indigenous languages. Further, communicating Inuvialuit knowledge about food orally in the ISR was noted as a culturally appropriate and effective method given the history of oral transmission of knowledge by Inuvialuit. Finally, a territorial government representative described the importance of taking time to develop trusting relationships, familiarizing oneself with local community protocols, utilizing data management or sharing agreements directed by community preferences, and securing funding to hire community members as facilitators of increased inclusion of Indigenous knowledge and local perspectives in current dietary messages.

Communicators of cultural perspectives and knowledge about food

Country food knowledge holders identified communities, especially Elders, as the ones who should communicate their Inuvialuit knowledge about country foods to the public, including harvesting and food preparation knowledge and skills. Similarly, both local health professionals and the public believed Elders should be involved in sharing their Inuvialuit knowledge about food with the community. Participants suggested the IRC, GNWT DHSS, academic researchers and local health professionals should work with Elders to develop and review messages about country food by interviewing Elders individually or organizing a knowledge circle. In contrast, a country food knowledge holder expressed dismay that the GNWT and IRC are involved in communicating information about country foods, explaining it should be

Elders themselves who communicate their knowledge orally and through practice when harvesting and preparing country foods in their community, following Inuvialuit tradition:

> *"To me, it's so sad we have the government and IRC helping us to promote on what we have learnt, we could pass it on like this - like you asking me questions and I'm telling you the answers. This is the way it should be taught, face to face and to do it out there you have the means to have a smoke house and stuff. That's the way to learn. That's how I see it." (SIA6)*

A common view amongst participants was the need for non-Indigenous government health representatives and health professionals to provide opportunities for communities to develop and deliver messaging themselves, or at the minimum collaborate with Inuvialuit dietary message stakeholders when developing and delivering messaging promoting country foods and Inuvialuit knowledge since they understand their culture, food system and local needs the best and are trusted by their community to communicate health information. A participant further explained this by saying:

> *"I mean people trust members of their own community more than folks from outside right? ...Particularly with… colonization, residential schools and all of that, you know there is a huge trust gap. So wherever possible, you know working with those champions in the communities who can be the ones delivering messages is so critical." (KII5)*

Types of culture-centered messages

Most country food knowledge holders stated they would like to see messages about safe country food preparation methods and traditional food preparation techniques developed and delivered by Elders through hands-on workshops with youth and interested community members. As one interviewee said:

> *"First hand, watching people or even getting knowledge from the Elders. Sitting with an Elder, you get a lot of knowledge from the Elders. Like hands on or speaking with them because you know there's a proper way and not a proper way of doing things so you have to know how to do it from the Elders because they know what they're doing." (SIA6)*

Country food knowledge holders identified youth as a particularly important group to target to teach safe country food harvesting and preparation methods given their perceived disinterest in engaging in Inuvialuit practices and increased susceptibility to health risks posed by improper food preparation and preservation as inexperienced harvesters. Responding to this identified gap, another country food knowledge holder suggested offering more on-the-land programming and Inuvialuit food preparation workshops with students and Elders. Interest in seeing more messages about proper preparation techniques for whale, dried meat and dried fish was expressed by several country food knowledge holders. In addition, a resident explained that youth are not exposed to enough country food dietary

messaging in their community, and the creation of new posters designed for youth is needed in Tuktoyaktuk, especially at the school.

Residents interviewed agreed they would like to see more information about the nutritional and cultural benefits of country foods included in dietary messaging. For example, a resident expressed their interest in seeing more messages promoting country foods as healthier than store-bought foods given their nutritional benefits, and the Inuvialuit cultural values and practices associated with the harvesting of country foods:

> *"I think it's important for the message to get out there that it's healthy, that it's healthy fats, that's it doesn't contain sugars and salts and it's not, doesn't contain preservatives. And just those messages that these are really healthy foods, they're from the earth, you know, and these animals give their lives to us and the hunters, the traditional hunters thank them for that… and I think that's really important." (SIB1)*

Further, a health professional described wanting to learn how to identify which plants to pick around the community. They suggested creating a resource identifying plants, how to prepare them, and their traditional uses to teach the public about which varieties are safe to harvest, eat and use. Similarly, regional and local health professionals expressed interest in receiving support to develop food and medicine guides and develop nutrition workshops in partnership with local country food knowledge holders to better incorporate country foods. Participants suggested including more Indigenous perspectives about food in messaging, particularly about the cultural benefits of harvesting and consuming country foods. This would enable dietary messaging to further take a holistic approach when promoting food and health, incorporating both Western scientific and Indigenous knowledge systems. A participant noted:

> *"I mean I think the one important one and I think some do this really well and some don't, I think is, like identifying the importance of the food we're talking about. You know and not just sort of a fact sheet, like not just something that says you know, "you can eat this much and blah, blah, blah". Like you know you need more cultural context to it about why the food is important and what it means and also recognizing its holistic role in things. Again and sort of Western worldviews, you know we're very good at separating things into you know, discrete components and so I think we missed some of that sometimes." (KII5)*

An idea for creating locally tailored and culturally meaningful dietary by students at the Mangilaluk School in Tuktoyaktuk was suggested, responding to participants' recommendations to involve youth in dietary message development:

> *"I think it's important to show the harvesters too, like we have, we're really privileged here to have really young harvesters… And they're out and the community knows them and they know*

that they go out hunting and it would be nice to see them pictured doing what they're doing, you know. And it's encouraging to the little guys, who look up to them and their kids as well… it's just super positive for people to see people doing stuff here… And like I was thinking in the school, it would be a fun project for a photographer, a student photographer to go out with the harvest, the young harvesters that we have and take pictures of them harvesting and, or fishing or whatever. And you know, to do some posters with pictures and then for drawings, you know, the kids could do drawings, like those are things that attract people's attention…" (SIB1)

Messaging about store-bought foods

Participants commonly identified the need for more ISR community perspectives and realities to be included in public health dietary messaging about store-bought foods. For example, they highlighted the need for dietary messaging to educate about the detrimental health effects of regularly consuming unhealthy store-bought foods, especially pop, junk foods and ready-made foods. One resident felt that enough messages are communicated about the nutritional benefits of healthy store-bought foods and health professionals identified the need for messaging promoting healthy store-bought food alternatives since produce is often unavailable or too expensive to purchase in Tuktoyaktuk. Local health professionals recommended building on successful store-bought food dietary message initiatives previously organized by other community health workers and cooking program coordinators. For example, they noted that setting up a table at the grocery stores displaying healthy and unhealthy store-bought foods with visuals of the amount of additives found in processed foods and sugary beverages was an effective way to communicate nutritional information to the public. Further, in the past the CHR had visited people's homes to share information about healthy food choices, which was suggested as another useful method of communication. Finally, a health professional suggested partnering with the grocery stores to create a 'stop light' label system where foods are labelled based on healthfulness to suggest appropriate levels of consumption.

Discussion

This study was designed to determine how the perspectives and Inuvialuit knowledge of territorial, regional and local dietary message disseminators, local country food knowledge holders and the public can inform the co-development of culture-centered dietary messaging in Tuktoyaktuk. Our findings confirm the need for increased inclusion of cultural and community perspectives about healthy and safe food choices and processes in dietary messaging communicated in the ISR, particularly the holistic health benefits of harvesting, preparing and consuming country foods. In accordance with our findings, previous Arctic environmental health risk communication studies and Indigenous health communication studies have demonstrated that effective messaging must be tailored to and developed in partnership with communities, and grounded in cultural and community knowledge, skills, values and worldviews (AMAP 2015, 2021;

Boyd & Furgal, 2019; Judd et al., 2005; Krummel & Gilman, 2016; Colles & Maypilama, 2014; National Collaborating Centre for Indigenous Health [NCCIH], 2020).

Likewise, our findings support the need for a distinctions-based approach to messaging, acknowledging the different contexts and diversity of Indigenous peoples (NCCIH, 2020). In contrast, a pan-Indigenous approach is employed when messaging is developed for all Indigenous peoples across the NWT, which is presently the case for most federal and territorial dietary messaging in the NWT (NNCIH, 2020). For example, Health Canada's 2007 Indigenous Food Guide (IFG) entitled "*Eating Well with Canada's Food Guide- First Nations, Inuit and Métis"* adopts a pan-Indigenous approach, overlooking the diversity of Indigenous peoples and their food systems in Canada (Wilson & Shukla, 2020). In response, numerous population-specific IFGs and healthy food guidelines (Skinner et al., 2020 – see supplemental file) were created by Indigenous communities and health organizations in Canada (e.g., the First Nation Health Authority [FNHA] *"Healthy Food Guidelines for First Nations Communities*" in British Columbia and the Government of the Northwest Territories *"Traditional Food Fact Sheet Series"*), reflecting distinctions-based and participatory approaches to message development (FNHA, n.d.; GNWT, n.d.-b).

Our findings also indicate a need to increase communications and collaborations between dietary message stakeholders at all levels (territorial, regional and local), especially between Inuvialuit country food knowledge holders (Elders and harvesters), youth, the GNWT DHSS, ENR, and regional/local health professionals to co-create regionally and locally tailored dietary messages in the ISR when desired. This finding is consistent with other research calling for participatory message development with experts from varying backgrounds, recognizing and legitimizing Indigenous knowledge holders as dietary message disseminators (AMAP 2015; Colles, Maypilama & Brimblecombe, 2014; Krummel & Gilman, 2016; Kuhnlein, 2015). Through this 'two-way sharing' of Inuvialuit and Western knowledge about healthy and safe food choices and processes, dietary message stakeholders can better learn from each other and engage in a participatory process of communication combining multiple knowledge systems (Colles & Maypilama, 2014). An example of dietary messaging combining Inuit and Western knowledge systems is the Government of Nunavut's 2001 *"Nunavut Food Guide"*, promoting country foods, healthy store-bought foods, and traditional food practices (Government of Nunavut, 2012).

As a first study of its kind with Inuvialuit, our findings have important implications for dietary message stakeholders across the NWT. Our study provides a new understanding of current barriers and facilitators to participatory, culturally meaningful dietary message development and dissemination in the ISR to inform future health communication efforts in the region. Further, this research extends our

knowledge of territorial, regional and local preferences for who should be involved in the collaborative development of culture centered dietary messaging in the ISR, how, what messages are needed, and suggested methods for collecting and sharing community and cultural knowledge and perspectives. Notably, our findings indicate that country food knowledge holders are the preferred communicators of safe and traditional country food harvesting and preparation knowledge and skills in Tuktoyaktuk through observation-based teachings given their wealth of empirical and hands-on experience. This finding is consistent with those of Myers & Furgal (2006) who describe Inuit culture as relationship-based and observation-based versus Western culture as information-based. Therefore, we call on public health dietary message stakeholders to recognize the legitimacy of country food knowledge holders as dietary message disseminators. For example, we recommend public health stakeholders prioritize supporting country food knowledge holders in communicating dietary information in the ISR through oral, visual, and hands-on teaching, promoting Inuvialuit worldviews, culture and values. Honoring local priorities by providing increased opportunities for country food knowledge holders to share their Inuvialuit knowledge about food reflects key recommendations made by the NCCIH for the development of culturally relevant public health messaging for northern Indigenous communities during COVID-19. The NCCIH (2020, pp.11-12) recommends using 'wise practices', "Indigenous ways of knowing, principles and solutions", to inform messaging and adopting a strength-based approach, acknowledging that "people have the knowledge and expertise to identify and address their own concerns". These recommendations translate to dietary messaging in the ISR given the need for non-Indigenous dietary message stakeholders in the NWT to further support means for Inuvialuit to share their knowledge about healthy and safe country food practices, developing messaging for communities by communities and promoting intergenerational transfer of Inuvialuit knowledge.

When collaborations are desired, the findings from our study highlight challenges regarding limited resources and time required to develop trusting, respectful and collaborative relationships between dietary message stakeholders, particularly government health representatives, health professionals, academic researchers, and country food knowledge holders. Informed by the culture-centered dietary messaging needs identified by territorial, regional, and local dietary message stakeholders in our study, we present recommendations for collaborations in Table 7 to facilitate future communication partnerships in the ISR. However, we recognize that sufficient resources are required to foster trusting, respectful relationships, therefore we call on academic researchers and federal, territorial and regional governments to fund and support projects fostering collaborations between youth, harvesters, Elders, schools, and local health professionals to co-develop locally tailored and culture-centered dietary messages in, for, and with the ISR as desired by communities. Given that territorial and regional governments often have limited budgets, we

recommend health professionals and government health representatives partner with academic researchers on funded research projects to support the development and evaluation of ISR culture-centered dietary messages.

Table 7: Recommendations for collaboratively developing dietary messages in, for and with the Inuvialuit Settlement Region (ISR)

Dietary message department/stakeholder	**Recommendations for (co-)developing culture-centered dietary messaging in the ISR**
GNWT Department of Health and Social Services (DHSS)	
Office of the Chief Public Health Officer (OCPHO)	• Collaborate with local health professionals, country food knowledge holders and researchers to develop culture-centered and ISR-tailored messaging, incorporating Inuvialuit knowledge of country food processes and climate change adaptation considerations • Fund and support dietary message development and communication projects led by communities (e.g., student-harvester country food photo project to design posters). Partnerships with academic researchers can provide funding sources to support and facilitate such projects. • Develop and deliver a country food nutrition training workshop for regional and local health professionals and community health workers in the ISR
GNWT Department of Environment and Natural Resources (ENR)	
On-the-Land Unit	• Collaborate with local health professionals, country food knowledge holders and researchers to develop culture-centered and ISR-tailored messaging, incorporating Inuvialuit knowledge of country food processes and climate change adaptation considerations • Fund and support dietary message development and communication projects led by communities (e.g., country food preparation workshops led by Elders, traditional edible plant identification resource)
Northwest Territories Health and Social Services Authority (NTHSSA)- Beaufort-Delta Region	
NTHSSA Beaufort-Delta Region administrators	• Develop cultural training resources and mentorship opportunities with local country food knowledge holders for non-Inuvialuit (allied) health professionals • Improve local health professionals' and community health workers' access to scientific information about the nutritional benefits of country foods through communications with researchers and the GNWT DHSS
Regional allied health professionals (Inuvik)	• Increase partnerships with local country food knowledge holders and cultural coordinators to deliver dietary messaging and nutrition programming about country foods • Develop a country food position to advise dietary message development in the ISR • Establish communications between regional allied health professionals to share dietary message resources and develop partnerships across the NWT

Local health professionals and community health workers (Tuktoyaktuk)	• Collaborate with other local health professionals and community health workers across the ISR, local leadership, schools and Elders when developing dietary messages • Establish communications between regional allied health professionals to share dietary message resources and develop partnerships
Inuvialuit Regional Corporation (IRC)	
Health and Wellness Division	• Increase country food harvesting and preparation workshops and programs led by Elders, especially for youth • Fund country food harvesting and preparation workshops and programs led by Elders
Local	
Tuktoyaktuk country food knowledge holders (Elders, harvesters, fishers, trappers)	• Increase country food harvesting and preparation workshops and programs led by Elders, especially for youth • Collaborate with local health professionals and cooking programs to deliver hands-on workshops on the land

Drawing on the successes of collaborative COVID-19 health communication initiatives grounded in Indigenous culture (e.g., the co-development of COVID-19 posters for the NWT by Hotıì Ts'eeda and GNWT DHSS), we recommend NWT dietary message stakeholders partner with Indigenous health organizations such as Hotıì Ts'eeda to reduce the burden of engagement for all stakeholders involved and build on existing initiatives (Hotıì Ts'eeda, 2021; ITK, n.d.; NCCIH, 2020).

Given our finding that some country food knowledge holders wish to directly communicate dietary messages to their community rather than collaborating with regional or territorial public health departments, we recommend a second, more decolonizing approach to dietary messaging in the ISR whereby communities are supported as needed by federal, territorial and regional public health departments to take leadership in the communication of desired messages. This finding has important implications for the future of public health communication in the ISR whereby communities shift from 'engagement in' to 'leadership of' dietary message development and dissemination, ultimately fostering Inuit food sovereignty. This aligns closely with actions outlined by Inuit Tapiriit Kanatami (2021) in their Inuit Nunangat Food Security Strategy, calling for "Inuit-defined healthy diets that meets Inuit cultural and nutritional needs" (p. 34). Health Canada's *"Brighter Futures"* program is a noteworthy example of an existing federally funded program supporting Indigenous-led dietary messaging in the NWT and ISR (IRC, 2021). The program funds community-led *"Healthy Babies"* cooking and nutrition activities for parents of young children and country food harvesting trips with Elders and youth in the ISR, promoting healthy, safe and culturally appropriate food choices and skills (IRC, 2021). Further, school curriculum in

the NWT and ISR incorporates country food harvesting, preparation and cooking programming with youth and Elders (e.g., GNWT ENR *"Take a Kid Trapping"* program and school-led country food workshops), reflecting successful partnerships for community-led food programming and dietary messaging (Kenny et al., 2018).

Future research is needed with country food knowledge holders, local public health dietary message disseminators and community members from all ISR communities to compare culture-centered dietary message perspectives and priorities across the ISR, in addition to other regions in the NWT. Furthermore, there is a need for research to examine the perspectives of federal dietary message disseminators, academic researchers, and ISR youth regarding the development of culture-centered messaging to establish a greater understanding of their experiences and needs. Finally, further research is needed to evaluate participatory, culture-centered dietary messaging initiatives in the ISR and NWT to determine the effectiveness of these messages and barriers and facilitators experienced by dietary message stakeholders in the goal of improving communication policies and practices.

Our recommendations for the collaborative development and dissemination of ISR-tailored culture-centered messaging, especially messaging promoting country foods that integrates both Western scientific and Inuvialuit knowledge, has important implications for the ISR, NWT and Inuit Nunangat given the identified interest for more culturally meaningful messaging grounded in local and regional culture and knowledge. This research makes several noteworthy contributions to Arctic health communication literature by providing a new understanding of preferences for how culturally inclusive dietary messaging should be (co-)developed in the ISR, by whom, and the topics to be addressed to support healthy, safe and culturally appropriate food choices and processes.

Conclusion

This participatory study employed a combination of Indigenous and Western qualitative research methods to describe how the perspectives and Inuvialuit knowledge of territorial, regional, and local dietary message stakeholders can inform the (co-)development of culture centered dietary messaging to support healthy, safe, and culturally appropriate diets in Tuktoyaktuk, NWT. As the first study of its kind examining best methods for culture-centered dietary messaging in the ISR, our findings confirm the need for increased inclusion of cultural and community perspectives about food for the development of culturally inclusive, regionally and locally tailored dietary messaging. Our study provides a new understanding of territorial, regional and local preferences for the (co-) development of culture-centered dietary messaging in, for, and with the ISR and offers recommendations for future collaborations and

independent, community-led traditional dietary message initiatives, promoting Inuvialuit food sovereignty through effective, culturally meaningful health communication.

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Chapter 4 Attachment

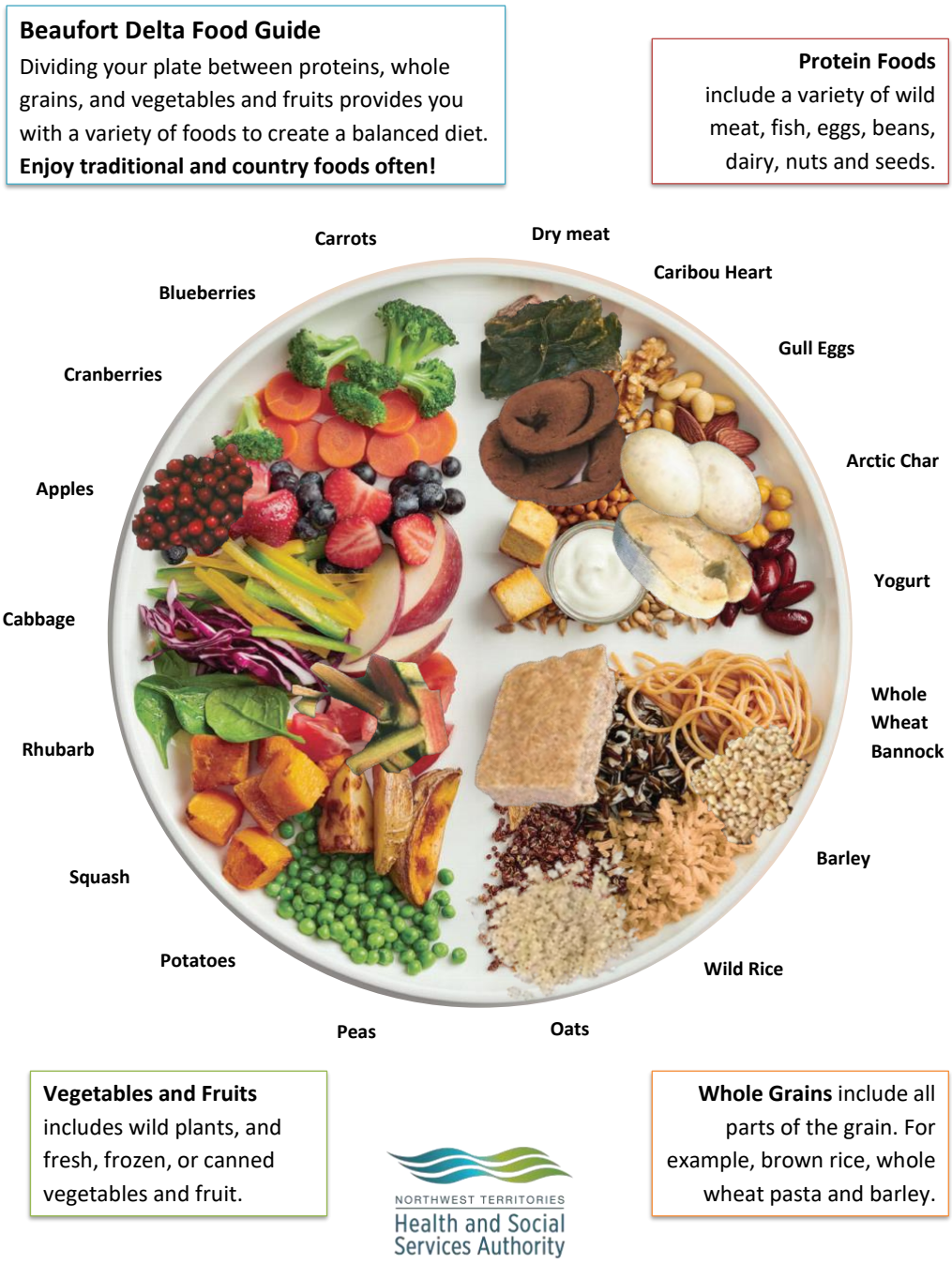

Figure 9: *Beaufort Delta Food Guide (C. Kaufman, n.d.)*

Chapter 5: Conclusion

5.1 Summary of Main Findings

The objectives of this thesis were to (1) Understand who currently develops and disseminates dietary messages, what the messages address, how these messages are developed and disseminated to ISR communities, and gaps in current messaging, from the perspective of territorial, regional and local key informants, to inform the development of a an Inuvialuit Food Messages Survey for the ISR; (2) Identify how territorial, regional and local public health dietary message disseminators, local country food knowledge holders, and the public in Tuktoyaktuk can co-develop culture-centered dietary messaging to more effectively promote healthy, safe and culturally appropriate diets in the community; and (3) To provide recommendations to territorial, regional and local dietary message developers and disseminators to further improve dietary messaging in the ISR. Key informant, storytelling and talking circle interviews with territorial, regional and local public health dietary message disseminators, local country food knowledge holders, and the public in Tuktoyaktuk provided insights to address these research objectives. The main findings of this manuscript follow below.

The findings from Chapter 3 demonstrated that dietary messages disseminated to the public in the ISR are developed at all scales (federal, territorial, regional and local) and communicated by territorial and regional government health professionals, allied health professionals and representatives, regional and local food program coordinators, academic researchers, and local leadership through a variety of in-person, written, audio and online methods. Importantly, country food knowledge holders communicate their own messaging about country foods through the sharing of Inuvialuit knowledge while harvesting and preparing country food in their community. Findings indicated that dietary messages disseminated in the ISR focus predominantly on healthy store-bought food choices, nutritional advice about store-bought foods and country foods, and safety risks of consuming country foods. It was found that federal and territorial messages are seldom tailored to northern Indigenous communities and territorial messages are rarely tailored to Inuvialuit communities, whereas regional and local messaging are designed for the ISR with consideration of local culture, realities, food availability and preferences. Notably, since dietary messages are largely developed for the ISR by public health departments located outside the ISR, messages focus heavily on Western biomedical conceptions of food and physical health. Although country foods and Indigenous worldviews of food appear less frequently in dietary messaging in the ISR than store-bought foods, territorial and regional developers and communicators of messaging expressed their desire to develop more country food messaging to better reflect local culture and diets. Key barriers to dietary message development and dissemination in the ISR included a lack of collaboration between

stakeholders involved in communications, the communication of messaging that community members do not trust, and lack of inclusion of Indigenous culture and knowledge in messaging. Rather than a lack of interest or awareness, dietary message stakeholders at all scales noted a lack of communication and collaboration with other dietary message stakeholders as a significant barrier to including Inuvialuit culture and knowledge in current messaging. Addressing these barriers, participants noted the importance of involving Indigenous peoples in the development and communication of messaging, developing messages that align with a community's cultural beliefs, using trustworthy people to deliver messages, and delivering simple, engaging messaging in person and via social media. Overall, findings from the key informant interviews indicated that dietary messaging in the ISR intersects both Western biomedical and Inuvialuit knowledge systems and worldviews of health and food, elucidating the need for better representation of Inuvialuit culture and values in dietary messaging. Addressing the study's third objective, nine recommendations were provided to dietary message stakeholders in the NWT informed by the study findings, including the need to evaluate dietary messages in the ISR and further improving collaborations between Inuvialuit knowledge holders and dietary message developers at all scales to co-develop more culturally relevant messaging in the ISR.

Findings from Chapter 4 confirmed the need for increased inclusion of cultural and community perspectives about healthy and safe food choices and activities in dietary messaging communicated in the ISR, especially the physical, mental, cultural, and spiritual health benefits of harvesting, preparing and consuming country foods. It is through the inclusion of cultural and community perspectives that the knowledges and voices of Indigenous communities can be legitimized and celebrated. Notably, we found that although most dietary message stakeholders wished to be involved in co-development processes, some country food knowledge holders desired leading traditional communications in Tuktoyaktuk. Drawing on this finding, we highlighted the need for federal, territorial, and regional public health departments to further support communities in taking leadership of dietary message development and dissemination to foster Inuvialuit food sovereignty, promoting a strength-based approach.

The study findings also indicated a need to increase communications and collaborations between dietary message stakeholders at all levels (territorial, regional and local), especially between Inuvialuit country food knowledge holders (Elders and harvesters), youth, the GNWT DHSS, ENR, and regional/local NTHSSA Beaufort-Delta health professionals to co-create regionally and locally tailored dietary messages in the ISR when desired. The study provided a new understanding of current barriers and facilitators to participatory, culturally meaningful dietary message development and dissemination in the ISR, informing recommendations for future communication efforts in the region. For example,

challenges with limited resources and time required to develop trusting, respectful and collaborative relationships between dietary message stakeholders, particularly government health representatives, health professionals, academic researchers, and country food knowledge holders were noted. Importantly, participants identified country food knowledge holders as the preferred communicators of safe and traditional country food harvesting and preparation knowledge and skills in Tuktoyaktuk through observation-based teachings given their wealth of empirical and hands-on experience. This finding informed the recommendation for public health dietary message stakeholders to legitimize country food knowledge holders as dietary message disseminators and further support their communication of dietary information in the ISR through oral, visual, and hands-on teachings to promote Inuvialuit worldviews, culture and values. Responding to the third research objective, recommendations for future community-led approaches to further (co-)develop and communicate effective, culturally meaningful dietary messaging promoting Inuvialuit food sovereignty in the ISR were provided.

5.2 Reflections and Recommendations for Researchers

I began this project intending to lead in-person community-based participatory research activities in Tuktoyaktuk in the summer of 2020. During this time I hoped to further develop relationships with community members and learn about Inuvialuit culture, building on my short visit to the ISR in February 2020. As described in previous chapters, this plan did not materialize: COVID-19 lockdown measures required me to adapt conventional in-person participatory research methods to a virtual context. This section offers my reflections on methodological innovations I employed throughout the pandemic. I conclude by providing recommendations for researchers as to how my methods and lessons learned should apply in a post-pandemic context.

Given the nature of CBPR projects, rooted in collaboration and relationship building, facilitated by in-person interactions, I was confronted with how to conduct virtual participatory research during a pandemic with a northern Indigenous community in which I had spent little time. Following conversations with Drs. Skinner and Ostertag, I developed an extensive training toolkit and virtually hired, trained and mentored an Inuvialuk community researcher in Tuktoyaktuk (Kanelsa Noksana) during the spring of 2021 to lead in-person storytelling and talking circle interviews. While searching for resources to support my creation of a virtual interview training toolkit, I noted a lack of virtual community researcher training methods available. I was therefore required to draw on my own experiences conducting interviews with northern Indigenous communities along with Dr. Skinner's and Ostertag's experiences to virtually train a community researcher with no prior research experience. I structured the toolkit as a checklist of steps to guide Kanelsa, starting from participant recruitment and ending with the day of the interview. I prepared a binder with color-coded copies of all ethics forms and

documents Kanelsa required, matching the forms referred to in the checklists for clarity and ease. I mailed these resources along with interview supplies (printer, iPad, audio recorder and office supplies) to Kanelsa prior to virtual training. Although the process of developing this virtual training toolkit required significant time, foresight, and flexibility amidst a continuously evolving pandemic, it was integral to the project's success as it greatly facilitated the training process by having planned for possible difficulties and changes in plans. Further, the toolkit provided Kanelsa with the knowledge required to complete her research activities in a simple and unambiguous way and was accessible to her at any time. As Kanelsa put it, "anyone can follow the checklists and understand what to do"! Drawing on this experience, I recommend academic researchers provide opportunities for community researchers to lead research activities as desired and obtain funding to hire and train community researchers over several weeks or months rather than days. I also recommend researchers develop Indigenous community researcher training resources in collaboration with Indigenous community partners and existing community researchers to determine community preferences and best methods. Additionally, I recommend combining virtual and in-person training to further develop trusting relationships.

Once I completed virtual training with Kanelsa, we faced delays beginning data collection due to additional COVID safety requirements introduced by the University of Waterloo research ethics board (REB). The volume and standardized nature of the REB's COVID safety requirements challenged the participatory nature of this project given the lack of consideration for remote northern Indigenous community realities and research ethics preferences. This made it particularly challenging for Kanelsa and I to balance the REB's safety requirements with community preferences, highlighting the need for the creation of Indigenous research ethics guidelines and further conversations between academic researchers and their REBs to advocate for community realities and preferences. Addressing these challenges, I recommend researchers develop and utilize community research agreements to support the use of research methods that best align with community realities and preferences. I also recommend researchers continue advocating for the development of Indigenous research ethics guidelines to better align University Research Ethics Board requirements with Indigenous community culture, ethics and values.

Reflecting the methods outlined in my research ethics protocol, I conducted member checking following analysis to provide interview participants with the opportunity to review and approve publication of their quotations in Chapters 3 and 4. The participants were grateful to have the opportunity to review their quotations, ensuring they were accurately represented, aligning with the project's CBPR approach and further developing trusting relationships with participants. One participant requested to connect by Zoom to discuss their quotations and my study findings, which facilitated the member checking process by providing an opportunity to have a conversation and answer questions. All

participants provided minor edits to add clarification, and one participant chose to adjust and remove their quotations in contexts where they may have been identifiable in their position. I was grateful for participants' feedback, yet I faced the challenge of how to navigate editing and removing quotations following analysis given that this is a less common practice. Since the overall meaning of these quotations did not change, and the edits did not affect the findings from my analysis, I edited the quotations as requested and described my process in the manuscripts. Had the overall meaning of the quotations changed I would have had to re-analyze my findings, which was a possibility I had not originally considered. Based on this experience, I encourage researchers to have conversations with their supervisors, research teams and community partners regarding best methods for qualitative member checking with interview participants, especially in northern Indigenous contexts, to fill this gap in knowledge.

In conclusion, throughout eight months of virtual co-learning and relationship building with Kanelsa, I enacted CBPR and decolonizing research approaches in a way that I never expected. Most importantly, the pandemic prompted me to realize that most academic CBPR studies with northern Indigenous communities, including my own, continue to rely heavily on southern researchers travelling north to complete research activities, often limited to a few weeks. The pandemic forced me to reconsider my role as a non-Indigenous researcher conducting Indigenous participatory health research, enabling me to better support (not build) Tuktoyaktuk's capacity to conduct and direct research by hiring and mentoring a local researcher to lead interviews as part of my thesis research. Through this virtual research experience, I have been better able to decolonize research by transferring power from myself to the community researcher, supporting research capacity and autonomy for the community to lead future research projects themselves. Ultimately, this project has demonstrated how the pandemic provided an important opportunity to shift how CBPR projects are typically conducted with northern Indigenous communities, establishing the critical importance and value of local community researchers leading research activities. I am grateful to have collaborated virtually with Kanelsa to affirm the community's culture, knowledge and priorities through participatory health research. It is my hope that future academic researchers, partnering with northern Indigenous communities on participatory research studies, will continue to adapt their methodologies beyond the pandemic to better support community-led research, shifting from Indigenous participation to Indigenous leadership in research. To do so, I am offering the following recommendations to apply these lessons learned in a post-pandemic context:

1. Provide opportunities for community researchers to lead research activities as desired, promoting community research capacity and reducing community reliance on non-Indigenous academic researchers

2. Obtain funding to hire and train community researchers over several weeks/months rather than days
3. Develop Indigenous community researcher training resources in collaboration with Indigenous community partners and existing community researchers to determine community preferences and best methods
4. Combine virtual and in-person training: begin virtual training with community researchers in advance of a research trip, followed by in-person training during the research trip, and then following-up after the research trip
5. Develop/utilize community research agreements to support the use of research methods that best align with community realities and preferences
6. Advocate for the development of Indigenous research ethics guidelines to better align University Research Ethics Board requirements with Indigenous community culture, ethics and values
7. Provide opportunities for participants to review their interview quotations and provide feedback prior to publication; budget time for conversations with participants and further analysis should edits be requested
8. Give back to the community beyond your research in ways that are desired by the community (see Appendix T)

5.3 Limitations and Mitigation Strategies

The COVID-19 pandemic made it especially challenging to conduct participatory research in the ISR given my inability to meet most project partners and participants in person and spend time in Tuktoyaktuk to further learn about the community and culture. I responded to this challenge by hiring, training and co-leading Study 2 with a community researcher in Tuktoyaktuk, which greatly facilitated the project by ensuring in-person research activities could be conducted in a respectful, safe and meaningful way. Furthermore, I mitigated challenges regarding conducting CBPR research during the pandemic by remaining flexible and utilizing alternative means of staying connected with project partners, including videoconference and telephone calls. Although my use of telephone interviews made it more challenging to establish trust and rapport with participants, they offered anonymity to participants, minimized the influence of my personal characteristics (e.g., age, ethnicity) on participant's responses, and offered an accessible and cost-effective method for participants (Hughes, 2008). I developed rapport through recruitment conversations via phone and email and during the interviews, and I offered the option of connecting by videoconference to key informant participants in Study 2. Better yet, Kanelsa was able to conduct all interviews in Tuktoyaktuk in person, which was a significant achievement during the pandemic. Kanelsa was told by an Elder how proud they were that she was doing this work, reflecting the

importance of having community researchers lead interview activities rather than relying on academic researchers.

Unsurprisingly, COVID-19 also challenged my recruitment of dietary message stakeholders given their deployment in the pandemic response. I was able to mitigate this challenge by providing ample time for participants to participate in the study and was flexible with re-scheduling interviews. I anticipated challenges recruiting Elders given increased health risks associated with the pandemic, yet because of Kanelsa's recommendation to interview Elders in their homes rather than at the youth center we did not experience difficulties. In contrast, we faced challenges scheduling talking circles given that it was the summer holidays and whale harvesting season, therefore we were unable to hold our second talking circle with the general public. Instead, Kanelsa conducted one-on-one storytelling interviews, which allowed her to better develop rapport with the participants but unfortunately did not provide participants with the opportunity to share their perspectives amongst themselves.

As a settler Canadian who does not live in the ISR, I was limited in my ability to conduct decolonizing research utilizing an Indigenous research paradigm. Since I did not grow up immersed in an Inuvialuit environment and culture, I can never entirely understand Inuvialuit worldviews and ways of knowing, and thus was limited in my ability to fully employ Indigenous research methodologies. This said, I addressed this limitation by collaborating with Kanelsa throughout Study 2. I was grateful for Kanelsa's extensive feedback on my research methods and interview questions to ensure they were culturally appropriate and reflected local values. Therefore, given that Study 2 was co-led by an Inuvialuk community researcher, the project better reflected an Indigenous research paradigm since the methodology was relational (i.e., embedded in the community context) and demonstrated respect for Inuvialuit values and culture. Further, I believe I was better able to develop a relationship with Kanelsa and understand Inuvialuit worldviews, culture and realities due to the fact that I grew up in Hay River and have spent time in many communities across the NWT.

Finally, I faced the challenge of developing trusting relationships with community members and research participants given negative colonial legacies and harmful research that has been conducted by non-Indigenous academics in the ISR. I therefore had the responsibility to utilize my privilege and lived experiences in the NWT to advocate for and engage in decolonizing Indigenous health research in a respectful, reciprocal, and culturally appropriate manner to change the dominant status quo. To do so, I continued to educate myself about Inuvialuit history, culture and current events through readings, conversations with Kanelsa and community partners, and work on the Mangilaluk School Traditional Food Cookbook project (see Appendix T). I consciously reflected on my positionality and worldview

throughout my research by journaling and talking with Drs. Skinner, Ostertag, and my project partners. I was able to strengthen relationships and build trust with project partners in Tuktoyaktuk, the ISR and the NWT by listening to their needs, employing decolonizing, participatory research methods, and demonstrating my genuine motivation to collaboratively and respectfully work together to improve the health of the land and people in the ISR.

5.4 Contributions to Research and Practice

5.4.1 Academic Contributions

This project makes an original contribution to research on public health communication about country and store-bought foods in the ISR by describing what dietary messages are developed and disseminated in, for and with the region, how and by whom. As no studies have sought to characterize dietary messaging about country and store-bought foods in northern Indigenous communities, this research advances our understanding of barriers and facilitators to developing and disseminating dietary messages in the NWT. The findings have also made an important contribution to research by informing the creation of the Inuvialuit Food Messages Survey to evaluate the effectiveness of dietary messages and programs as part of the ongoing CFGH project. Furthermore, since no studies have addressed best methods to collaboratively develop and communicate culturally relevant dietary messages between dietary message stakeholders in the ISR, NWT or Inuit Nunangat, findings from Study 2 have made an important contribution to research by informing the co-development of culture-centered dietary messaging between all levels of ISR dietary message disseminators to more effectively promote healthy, safe and culturally appropriate diets.

5.4.2 Methodological Contributions

This project has made important methodological contributions to conducting virtual CBPR projects in collaboration with northern Indigenous community researchers. A description of methodological innovations employed throughout the COVID-19 pandemic were provided, including the hiring of an Inuvialuk community researcher to lead in-person interviews in Tuktoyaktuk, the creation of a virtual training toolkit to train the community researcher, the use and challenges of member checking, and the creation of a school-led traditional food cookbook project to give back to the community beyond this research project. Drawing on lessons learned, recommendations were provided to guide researchers involved in future CBPR projects with northern Indigenous communities in a post-pandemic context.

5.4.3 Contributions to Policy and Practice

The findings have informed recommendations to territorial, regional and local dietary message stakeholders to further improve dietary messaging in, for and with the ISR. These findings have practical applications for other NWT regions, Inuit Nunangat communities and federal health departments seeking to understand and further improve dietary messaging currently received and/or communicated. In particular, the project's findings have informed recommendations for the development of messaging promoting country foods and the integration of both Western scientific and Indigenous knowledges and worldviews. Consequently, this project supports Inuvialuit food sovereignty by providing a new understanding of preferences for how culturally inclusive dietary messaging should be (collaboratively) developed in the ISR, by whom, and topics to be addressed. Importantly, this knowledge can be applied by dietary message stakeholders in the ISR, NWT and Inuit Nunangat to collaboratively develop regionally and locally tailored, culturally relevant dietary messages supporting healthy, safe and culturally appropriate food choices and activities.

At the local level, this project responds directly to questions and concerns raised by community members in Tuktoyaktuk and Paulatuk, particularly the need to frame country foods positively, include store-bought foods in health risk communication efforts, and create local country food recipe resources. Further, the Mangilaluk School Traditional Food Cookbook has responded to the community's interest in utilizing more country food recipes and promoting the consumption of country foods, particularly amongst youth.

5.5 Directions for Future Research

Building on the present study, research with country food knowledge holders, local public health dietary message disseminators and community members from all ISR communities is needed to compare culture-centered dietary message perspectives and priorities across the ISR, in addition to other regions in the NWT. Furthermore, there is a need for research to examine the perspectives of federal dietary message disseminators, academic researchers, and ISR youth regarding the development of culture-centered messaging to establish a greater understanding of their experiences and needs.

A future study could co-develop a culture-centered dietary messaging initiative in an ISR community with territorial, regional and local dietary message stakeholders to explore the process of developing and disseminating culturally relevant, locally tailored messaging. For example, the creation of a school-led country food messaging project with youth, Elders and health professionals would provide an

exciting opportunity for mentorship and the development of dietary messages in formats desired by the community, such as video, posters, a podcast, or social media posts.

Future research is needed to evaluate the dietary messages identified in this project and participatory, culture-centered dietary messaging initiatives in the ISR and NWT to determine and compare the effectiveness of messages to improve communication policies and practices. Similarly, further research needs to be done to establish how participatory, locally tailored culture-centered dietary messaging influences residents' dietary behaviours and awareness of healthy and safe food choices and activities.

5.6 Final Thoughts

This study has contributed valuable knowledge to supporting the (collaborative) development and communication of regionally and locally tailored, culturally meaningful dietary messaging in the ISR to more effectively promote healthy, safe and culturally appropriate diets. It is my hope that this research will inform and inspire more participatory, community-driven nutrition communication initiatives in the ISR, NWT and Inuit Nunangat bridging Western scientific and Indigenous worldviews about healthy and safe food. Given the strong desire for increased inclusion of cultural and community perspectives in ISR dietary messages and the predominant lack of representation of the Inuvialuit food system in current federal and territorial dietary messaging, this research provides foundational knowledge and actionable recommendations to dietary message stakeholders at all scales to collaborate on the development and communication of culturally meaningful dietary messages as desired. It is through the communication of locally tailored, community-based messages privileging Indigenous food knowledges that dietary messages can further affirm Indigenous culture while supporting nutritional well-being and Indigenous food sovereignty in the ISR, NWT and Inuit Nunangat.

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Appendix A: University of Waterloo Research Ethics Approvals for Study 1 (#41577) and Study 2 (#42948)

UNIVERSITY OF WATERLOO

Notification of Ethics Clearance to Conduct Research with Human Participants

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Principal Investigator: Brian Laird (School of Public Health and Health Systems)

Co-Principal Investigator: Sonja Ostertag (School of Public Health and Health Systems)

Co-Investigator: Kelly Skinner (School of Public Health and Health Systems)

Collaborator: Mylene Ratelle (School of Public Health and Health Systems)

Student investigator: Julia Gyapay (School of Public Health and Health Systems)

File #: 41577

Title: Country Foods for Good Health

The Human Research Ethics Committee is pleased to inform you this study has been reviewed and given ethics clearance.

Initial Approval Date: 01/27/20 (m/d/y)

University of Waterloo Research Ethics Committees are composed in accordance with, and carry out their functions and operate in a manner consistent with, the institution's guidelines for research with human participants, the Tri-Council Policy Statement for the Ethical Conduct for Research Involving Humans (TCPS, 2nd edition), International Conference on Harmonization: Good Clinical Practice (ICH-GCP), the Ontario Personal Health Information Protection Act (PHIPA), the applicable laws and regulations of the province of Ontario. Both Committees are registered with the U.S. Department of Health and Human Services under the Federal Wide Assurance, FWA00021410, and IRB registration number IRB00002419 (HREC) and IRB00007409 (CREC).

This study is to be conducted in accordance with the submitted application and the most recently approved versions of all supporting materials.

Expiry Date: 01/28/21 (m/d/y)

Multi-year research must be renewed at least once every 12 months unless a more frequent review has otherwise been specified. Studies will only be renewed if the renewal report is received and approved before the expiry date. Failure to submit renewal reports will result in the investigators being notified ethics clearance has been suspended and Research Finance being notified the ethics clearance is no longer valid.

Level of review: Delegated Review

Signed on behalf of the Human Research Ethics Committee

Joanna Eidse, Research Ethics Officer, jeidse@uwaterloo.ca, 519-888-4567, ext. 37163

This above named study is to be conducted in accordance with the submitted application and the most recently approved versions of all supporting materials.

UNIVERSITY OF WATERLOO

Notification of Ethics Clearance to Conduct Research with Human Participants

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Principal Investigator: Kelly Skinner (School of Public Health and Health Systems)

Student investigator: Julia Gyapay (School of Public Health and Health Systems)

Study coordinator: Laura Peach (School of Public Health and Health Systems)

Co-Investigator: Sonja Ostertag (School of Public Health and Health Systems)

Co-Investigator: Sonia Wesche (University of Ottawa)

Student investigator: Kim Mathieu (University of Ottawa)

File #: 42948

Title: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, NWT

The Human Research Ethics Committee is pleased to inform you this study has been reviewed and given ethics clearance.

Initial Approval Date: 04/21/21 (m/d/y)

University of Waterloo Research Ethics Committees are composed in accordance with, and carry out their functions and operate in a manner consistent with, the institution's guidelines for research with human participants, the Tri-Council Policy Statement for the Ethical Conduct for Research Involving Humans (TCPS, 2nd edition), International Conference on Harmonization: Good Clinical Practice (ICH-GCP), the Ontario Personal Health Information Protection Act (PHIPA), the applicable laws and regulations of the province of Ontario. Both Committees are registered with the U.S. Department of Health and Human Services under the Federal Wide Assurance, FWA00021410, and IRB registration number IRB00002419 (HREC) and IRB00007409 (CREC).

This study is to be conducted in accordance with the submitted application and the most recently approved versions of all supporting materials.

Expiry Date: 04/22/22 (m/d/y)

Multi-year research must be renewed at least once every 12 months unless a more frequent review has otherwise been specified. Studies will only be renewed if the renewal report is received and approved before the expiry date. Failure to submit renewal reports will result in the investigators being notified ethics clearance has been suspended and Research Finance being notified the ethics clearance is no longer valid.

Level of review: Delegated Review

Signed on behalf of the Human Research Ethics Committee

Erin Van Der Meulen, Research Ethics Advisor, ervandermeulen@uwaterloo.ca, 519-888-4567 x37046

Appendix B: Aurora Research Institute Scientific Research Licenses for Study 1 (#16690) and Study 2 (#16832)

License No. 16690
File Number: 12 402 846
January 31, 2020

2020

Northwest Territories Scientific Research Licence

Issued by:	Aurora Research Institute - Aurora College Inuvik, Northwest Territories
Issued to:	Dr. Sonja K. Ostertag University of Waterloo 200 University Ave W Waterloo, ON N2L 3G1 Phone: 519-888-4567 ext. 30365 Email: sonja.ostertag@uwaterloo.ca
Affiliation:	University of Waterloo
Funding:	Aboriginal Affairs and Northern Development Canada Canadian Institute for Health Research
Team Members:	Kelly Skinner, Mylène Ratelle, Emily Jenkins, Susan Kutz, Lisa Loseto, Colin Gallagher, Ellen Lea, Allan Torng
Title:	Country Foods for Good Health: Developing a country food database for the Inuvialuit Settlement Region
Objectives:	To determine the current concentrations of contaminants and nutrients in Inuvialuit country foods; and to develop a health communication and risk perception survey tailored for the Inuvialuit Settlement Region – the ISR Health Messages Survey.
Dates of data collection:	January 31, 2020 to December 31, 2020
Locations:	Inuvik, Tuktoyaktuk, Paulatuk

Licence No. 16690 expires on December 31, 2020
Issued in the Town of Inuvik on January 31, 2020

Pippa Seccombe-Hett
Vice President, Research
Aurora Research Institute

AURORA RESEARCH INSTITUTE
AURORA COLLEGE

Aurora Research Institute
PO Box 1450, Inuvik, NT X0E0T0
Tel: (867) 777-3298 Fax: (867) 777-4264

www.nwtresearch.com

May 26, 2021

Notification of Research

I would like to inform you that Northwest Territories Scientific Research Licence No. 16832 has been issued to:

Dr. Kelly Skinner
University of Waterloo
200 University Ave W
School of Public Health and Health Systems

Phone: (519) 888-4567 x48164
Email: kskinner@uwaterloo.ca

to conduct the following study:
Food Security Initiatives across the Northwest Territories (4936)

Please contact the researcher if you would like more information about this research project.
Summary of Research
The proposed research aims to learn from and enhance community capacity to address priorities and inform both climate change and food security action and support-structures at local, regional, and territorial scales.

Sincerely,

Jonathon Michel
Manager, Scientific Services

Distribution

- Inuvialuit Community Development Division
- Hamlet of Paulatuk
- Hamlet of Tuktoyaktuk
- Sahtu Renewable Resources Board
- Deline Got'ine Government

- Tulita Metis Land Corporation
- Hamlet of Tulita
- North Slave Métis Alliance
- Akaitcho Territory Government
- City of Yellowknife
- Northwest Territory Métis Nation
- Tulita District Land Corporation Limited
- Sahtu Secretariat Incorporated
- Wek'èezhìi Renewable Resources Board
- Inuvialuit Joint Secretariat
- Yellowknives Dene First Nation

Appendix C: Key Informant Interview Telephone and Email Recruitment Scripts

Telephone recruitment script:

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called "Country Foods for Good Health", which is being led by Dr. Sonja Ostertag from the University of Waterloo. We're studying health messages related to food that are provided to community members in the Inuvialuit Settlement Region.

I'm contacting you since you were identified as having a role in developing and/or communicating health messages as [INSERT ROLE].

Participation in this study is voluntary and if you are interested in participating, I'll ask you a series of questions by telephone about current health messages on country foods and store-bought foods that you are involved in developing and/or communicating to community members in the ISR, which will take no more than one hour.

Are you interested in participating in an interview? Or do you have any questions about the study?

IF NO:

Ok, that you for your time. If you change your mind, you can contact me by email at: jgyapay@uwaterloo.ca.

IF YES:

Great!

I'm available to schedule an interview at the following times:

[DATE AND TIMES]

What time works best for you?

I'll send you an email with an information letter for you to read and consent form for you to sign and email back to me. If you have any additional questions about the interview or the study, please feel free to send me an email to jgyapay@uwaterloo.ca

Telephone recruitment script (voicemail):

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called "Country Foods for Good Health", which is co-led by Dr. Sonja Ostertag, Kelly Skinner, and Brian Laird from the University of Waterloo. The purpose of this study is to help develop a survey to learn more about

current health messages on country foods and store-bought foods in the Inuvialuit Settlement Region (ISR).

I'm contacting you since you were identified as having a role in developing and/or communicating health messages as [INSERT ROLE].

Participation in this study is voluntary. This study has been reviewed by, and received ethics clearance through a University of Waterloo Research Ethics Committee.

If you are interested in participating, I will ask you a series of questions by telephone about current health messages on country foods and store-bought foods that you are involved in developing and/or communicating to community members in the ISR, which will take no more than one hour.

If you are interested in participating in an interview, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up an interview time.

As a follow up to this message, I'm also sending you this information by email.

Thank you and have a great day. Bye.

Email recruitment message (sent after phone voicemail):

Hello [INSERT NAME],

My name is Julia Gyapay, and I'm a Master's student in the School of Public Health and Health Systems at the University of Waterloo, working under the supervision of Dr. Kelly Skinner.

This email is an invitation to participate in a research study called **Country Foods for Good Health**, which is co-led by Dr. Sonja Ostertag, Dr. Kelly Skinner, and Dr. Brian Laird from the University of Waterloo. The purpose of this study is to help develop a survey to learn more about current health messages on country foods and store-bought foods in the Inuvialuit Settlement Region (ISR).

I'm contacting you since you were identified as having a role in developing and/or communicating health messages as [INSERT ROLE].

Participation in this study is voluntary. If you are interested in participating, I will ask you a series of questions by telephone about current health messages on country foods and store-bought foods that you are involved in developing and/or communicating to community members in the ISR, which will take no more than one hour. Attached is a Letter of Information where you can learn more about the study's purpose and procedures.

If you are interested in participating in an interview, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up an interview time.

For more information regarding this study feel free to contact me at jgyapay@uwaterloo.ca or the study leads:

- Sonja Ostertag by email (sonja.ostertag@uwaterloo.ca) or phone (519-377-3456).
- Brian Laird by email (brian.laird@uwaterloo.ca) or phone (519-888-4567 ext. 32720).

Sincerely,

Julia Gyapay

MSc(c) Public Health and Health Systems

School of Public Health and Health Systems, University of Waterloo

jgyapay@uwaterloo.ca

Appendix D: Key Informant Interview Guide

Interview with government representatives:

1. What is your role at [the Inuvialuit Regional Corporation/ GNWT DHSS]?
    a. Are you involved in the development and/or communication of health messages related to country foods and store-bought foods for the ISR? If yes, what is your involvement?
2. What can you tell me about how health messages are developed?
3. What can you tell me about how health messages are communicated?
    a. What are the current dissemination tools that are being used?
    b. Are there specific target groups that receive advice regarding diet? If so, please describe the type of advice provided to specific target groups. Is there other advice that you are also providing to the general population?
    c. Is there an evaluation method that is being used to determine how the messages are being received? If so, what evaluation method is being used?
4. What are some barriers and facilitators to the current dissemination tools that are being used?
5. Have you had the opportunity to speak to communities about health messages?
    a. If so, what barriers and facilitators of the dissemination tools did you hear about?
6. Do you know of other agencies or places that release health messages besides the IRC and NWT HSS?
    a. If so, who are they and do you communicate with these other agencies?
7. Is there anything else about health messages related to country foods and store-bought foods that you would like to share?

Interview with public health professionals:

1. What is your role in delivering healthcare services?
    a. Are you involved in the development and/or communication of health messages related to country foods and store-bought foods for the ISR? If yes, what is your involvement?
2. What can you tell me about how health messages related to country foods and store-bought foods are communicated to patients?
    a. What are the current dissemination tools that are being used?
    b. Are there specific target groups that receive advice regarding diet? If so, please describe the type of advice provided to specific target groups.
    c. What are some barriers and facilitators to the current tools that are being used?
    d. Is there an evaluation method that is being used to determine how the messages are being received? If so, what evaluation method is being used?

3. Is there anything else about health messages related to country foods and store-bought foods that you would like to share?

Interviews with community-health representatives:

1. How would you describe the _____ program?
    a. What is your role in delivering this programs?
    b. Are you involved in the development and/or communication of health messages related to country foods and store-bought foods for the ISR? If yes, what is your involvement?
    c. If yes, how are they developed?
2. What can you tell me about how health messages related to country foods and store-bought foods are communicated to participants?
    a. What methods do you currently use to communicate these messages to participants?
    b. Are there specific target groups that receive advice regarding diet? If so, please describe the type of advice provided to specific target groups.
        i. Do you provide advice to people with diabetes? If so, what kind of advice do you give to them?
    c. Because we don't have nutritional labels on country foods like we do on market foods, do you provide nutritional facts to participants about country foods?
    d. What ways seem to work best when talking with people about healthy foods?
    e. What doesn't seem to work well when talking with people about healthy foods?
3. Is there a method that you use to find out how your messages are being received by your participants? If so, what method do you use?
4. Do you know of other people or programs that communicate health messages in your community?
    a. If so, who are they and do you communicate with these other people or programs?
5. Is there anything else about health messages related to country foods and store-bought foods that you would like to share?

Appendix E: Key Informant Interview Participant Feedback Letter

Title of Project: Country Foods for Good Health

Dear healthcare practitioner, government representative, or community program lead,

Thank you for your participation in the study.

The purpose of this interview was to:

- Develop a survey to learn more about community member's awareness and understanding of current health messages on country foods and store-bought foods.
- Create a health messages survey that is appropriate for the people of the ISR.

Reporting:

- Your identity will be kept private by the researchers.
- A results summary will be returned to the community in 2021.
- If you are interested in receiving the study results directly, you can provide us with your contact information (e.g. email or home address).
- Afterwards, results may be used in student theses, papers, and presentations at national and international meetings.

Other Information:

- This study is expected to be completed by March 2022.
- If you would like more information about the study or if you chose to withdraw your information, please contact Dr. Sonja Ostertag or Dr. Brian Laird.
- Four years after this study's completion, we will remove all information that could identify you from the data we have collected and delete it permanently. You can withdraw your consent to participate and have your data destroyed by contacting us within this time period. After this time, it may not be possible to withdraw your consent to participate as we will have no way of knowing which responses are yours. Additionally, once papers and publications have been submitted to publishers there will be no way to remove your information. However, if you ask to have your information removed we can remove your information so that it is not included in future papers and publications. Only those associated with this study will have access to these records which are secured by a password-protected file. We will keep our study records for a minimum of seven years. All records are destroyed according to University of Waterloo policy.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#41577). If you have questions for the Committee contact the Office of Research Ethics, at 519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca. This study has received approval from the Aurora Research Institute.

Yours sincerely,

Sonja Ostertag
School of Public Health and Health Systems, University of Waterloo
Sonja.ostertag@uwaterloo.ca; 519-377-3456

Brian Laird
School of Public Health and Health Systems, University of Waterloo
brian.laird@uwaterloo.ca; 519-888-4567 ext. 32720

Appendix F: Key Informant Interview Participant Information Letter and Consent Form

INFORMATION LETTER FOR PARTICIPANT

Dear healthcare practitioner, government representative, or community program lead,

We would like to interview you about messages that you provide to community members about the quality and safety of country foods and store-bought foods. Funding for this study has been provided by the Northern Contaminants Program (NCP). You can take part in this project if you are a public health practitioner, government representative, or community member leading a community-led program residing in Tuktoyaktuk, Paulatuk, Inuvik, or Yellowknife.

Purpose of this study

To develop a survey to learn more about community member's awareness and understanding of current health messages on country foods and store-bought foods. The interview will help us create a survey that is appropriate for the people of the ISR.

Involvement in the project

Interview questions

- In a phone call or in-person interview, Sonja Ostertag or Julia Gyapay (MSc student at University of Waterloo) will ask questions about health messages that you have provided about foods and drinks (store-bought foods and country foods).
- The discussion will be audio-recorded so that answers can be reviewed later.

What will happen after the interview

Once the survey will be ready and relevant for the region, Sonja will be back in the community to invite people to complete the survey on an electronic tablet (e.g. Ipad™). This survey will support future health assessments such as the Inuit Health Survey. At the end of this study, Dr. Ostertag will return to the ISR to present the results from this study in a public meeting and a written report.

Participation and honorarium

You do not have to answer any questions that you do not want to, or which make you feel uncomfortable. We consider the risks associated with this research to be very low, and in line with the risks encountered in your everyday life. In total, the interview will take no more than 1 hour. Your participation is voluntary, and you are free to withdraw at any time. You can also change your mind anytime, and decide not to be in the study anymore. If you decide to withdraw from the research, by contacting Sonja (contact information is below), all data collected will be destroyed.

Privacy

Your participation will be kept private by the researchers. Your information will be protected by the researchers. Your answers to interview questions will be stored on a password-protected computer. Your name will not be linked with any information you provide; a participant ID number will be used in the data files instead. All data from this study will be kept at the University of Waterloo on a password-protected computer in a locked room. If you agree to participate, your answers will be kept for a minimum of seven years.

Reporting

Presentations and reports using information from the interview will not identify you or any of your personal information. Results of this study will be summarized in a report and will be returned to the community next year. After study results have been returned to the community, students may present de-identified results in theses, papers, and presentations at national and international meetings.

Ethics statement

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#41577). If you have questions for the Committee contact the Office of Research Ethics, at 519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca. This study has been approved by the Aurora Research Institute.

Contact Information:

Feel free to contact Sonja Ostertag or Brian Laird for more information at any time during the study.

Sonja Ostertag

School of Public Health and Health Systems, University of Waterloo

sonja.ostertag@uwaterloo.ca; 519-377-3456

Brian Laird

School of Public Health and Health Systems, University of Waterloo

brian.laird@uwaterloo.ca; 519-888-4567 ext. 32720

CONSENT FORM

By providing your free consent, orally or written as you prefer, you agree that:

- You understand the information described above.
- You authorize the researchers to use an audio recorder.

By providing your consent, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

Do you consent to participate in this research? (check): YES [ ] NO [ ]

Do you consent to the use of your anonymous quotations in the study presentations and publications? (check) **YES [ ] NO [ ]**

Name of the participant: _____

IF WRITTEN CONSENT:

Signature of the participant: _____ Date: _____

Name of the researcher: _____ Date: _____

Signature of the researcher: _____

CODED PARTICIPANT ID:_____

Appendix D: participant feedback letter

(Page to be detached and be kept at University of Waterloo)

Appendix G: Storytelling Interview Telephone and Email Recruitment Script

Telephone recruitment script:

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called *"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".* I'm leading this study at the University of Waterloo as part of Dr. Kelly Skinner and Dr. Sonja Ostertag's larger C4FS and Country Foods for Good Health projects in the NWT. I'm studying how messages about food that are provided to community members in the Inuvialuit Settlement Region by territorial and regional public health departments are developed and communicated, and how these messages can be further improved.

I'm contacting you since you were identified as having unique understandings and stories about traditional knowledge relating to healthy foods and ways of adapting traditional food practices because of climate change as [INSERT ROLE].

Participation in this study is voluntary and if you are interested in participating, myself or a local Research Lead will ask you a series of questions either in person, by telephone or by videoconference about whether you use traditional knowledge to make decisions about the quality and safety of country food, if you share this traditional knowledge with your community, and if you think this knowledge should be shared in future messaging to the public in Tuktoyaktuk. You will be able to share your stories about these topics with us, which will take no more than one hour.

Are you interested in participating in a storytelling interview? Or do you have any questions about the study?

IF NO:

Ok, that you for your time. If you change your mind, you can contact me by email at: jgyapay@uwaterloo.ca.

IF YES:

Great!

I'm available to schedule an interview at the following times:

[DATE AND TIMES]

What time works best for you?

I'll send you an email with an information letter for you to read and consent form for you to sign and email back to me. If you have any additional questions about the interview or the study, please feel free to send me an email to jgyapay@uwaterloo.ca

Telephone recruitment script (voicemail):

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called *"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".* The purpose of the study is to understand how messages about food that are provided to community members in the Inuvialuit Settlement Region by territorial and regional public health departments are developed and communicated, and how these messages can be further improved.

I'm contacting you since you were identified as having unique understandings and stories about traditional knowledge relating to healthy foods and ways of adapting traditional food practices because of climate change as [INSERT ROLE].

Participation in this study is voluntary. This study has been reviewed by and received ethics clearance through a University of Waterloo Research Ethics Committee.

If you are interested in participating, myself or a local Research Lead will ask you a series of questions either in person, by telephone or by videoconference about whether you use traditional knowledge to make decisions about the quality and safety of country food, if you share this traditional knowledge with your community, and if you think this knowledge should be shared in future messaging to the public in Tuktoyaktuk. You will be able to share your stories about these topics with us, which will take no more than one hour.

If you are interested in participating in an interview, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up an interview time.

As a follow up to this message, I'm also sending you this information by email.

Thank you and have a great day. Bye.

Email recruitment message (sent after phone voicemail):

Hello [INSERT NAME],

My name is Julia Gyapay, and I'm a Master's student in the School of Public Health and Health Systems at the University of Waterloo, working under the supervision of Dr. Kelly Skinner.

This email is an invitation to participate in a research study called **Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptative diets in Tuktoyaktuk, Northwest Territories**, which is part of Dr. Kelly Skinner's "C4FS" and Dr. Sonja Ostertag's "Country Foods for Good Health" studies at the University of Waterloo.

The purpose of this study is to learn how messages about food that are provided to community members in the Inuvialuit Settlement Region (ISR) by territorial and regional public health departments are developed and communicated, and how these messages can further be improved.

I'm contacting you since you were identified as having unique understandings and stories about traditional knowledge relating to healthy foods and ways of adapting traditional food practices because of climate change as [INSERT ROLE].

Participation in this study is voluntary. If you are interested in participating, myself or a local Research Lead will ask you a series of questions either in person, by telephone or by videoconference about whether you use traditional knowledge to make decisions about the quality and safety of country food, if you share this traditional knowledge with your community, and if you think this knowledge should be shared in future messaging to the public in Tuktoyaktuk. You will be able to share your stories about these topics with us, which will take no more than 1 hour. Attached is a Letter of Information where you can learn more about the study's purpose and procedures.

If you are interested in participating in a storytelling interview, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up an interview time.

For more information regarding this study feel free to contact me at jgyapay@uwaterloo.ca or Kelly Skinner by email (kskinner@uwaterloo.ca) or phone (519-888-4567 x48164).

Sincerely,

Julia Gyapay

MSc(c) Public Health and Health Systems

School of Public Health and Health Systems, University of Waterloo

jgyapay@uwaterloo.ca

Appendix H: Talking Circle Telephone and Email Recruitment Script

Telephone recruitment script:

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called *"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".* I'm leading this study at the University of Waterloo as part of Dr. Kelly Skinner and Dr. Sonja Ostertag's larger C4FS and Country Foods for Good Health projects in the NWT. I'm studying how messages about food that are provided to community members in the Inuvialuit Settlement Region by territorial and regional public health departments are developed and communicated, and how these messages can be further improved.

I'm contacting you since you were identified as having unique understandings and experiences about developing and communicating information about healthy and safe food choices to the public in Tuktoyaktuk as [INSERT ROLE].

Participation in this study is voluntary. If you are interested in participating, myself and a local Research Lead will form a talking circle of about three people, either in person or by videoconference, to ask you questions about how regional and territorial public health departments in the NWT can better develop messages about healthy country and store-bought food choices in Tuktoyaktuk in collaboration with local dietary message disseminators like yourself to promote traditional knowledge about food. The talking circle will take approximately two hours.

Are you interested in participating in a talking circle? Or do you have any questions about the study?

<u>IF NO:</u>

Ok, that you for your time. If you change your mind, you can contact me by email at: jgyapay@uwaterloo.ca.

<u>IF YES:</u>

Great!

I'm available to schedule a talking circle at the following times:

[DATE AND TIMES]

What time works best for you?

I'll send you an email with an information letter for you to read and consent form for you to sign and email back to me. If you have any additional questions about the interview or the study, please feel free to send me an email to jgyapay@uwaterloo.ca

Telephone recruitment script (voicemail):

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called *"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".* The purpose of the study is to understand how messages about food that are provided to community members in the Inuvialuit Settlement Region by territorial and regional public health departments are developed and communicated, and how these messages can be further improved.

I'm contacting you since you were identified as having unique understandings and experiences about developing and communicating information about healthy and safe food choices to the public in Tuktoyaktuk as [INSERT ROLE].

Participation in this study is voluntary. This study has been reviewed by and received ethics clearance through a University of Waterloo Research Ethics Committee.

If you are interested in participating, myself and a local Research Lead will form a talking circle of about three people, either in person or by videoconference, to ask you questions about how territorial and regional public health departments can better develop messages about healthy country and store-bought food choices in Tuktoyaktuk in collaboration with local dietary message disseminators like yourself to promote traditional knowledge about food. The talking circle will take approximately two hours.

If you are interested in participating in a talking circle, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up a talking circle time.

As a follow up to this message, I'm also sending you this information by email.

Thank you and have a great day. Bye.

Email recruitment message (sent after phone voicemail):

Hello [INSERT NAME],

My name is Julia Gyapay, and I'm a Master's student in the School of Public Health and Health Systems at the University of Waterloo, working under the supervision of Dr. Kelly Skinner.

This email is an invitation to participate in a research study called **Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptative diets in Tuktoyaktuk, Northwest Territories**, which is part of Dr. Kelly Skinner's "C4FS" and Dr. Sonja Ostertag's "Country Foods for Good Health" studies at the University of Waterloo.

The purpose of this study is to learn how messages about food that are provided to community members in the Inuvialuit Settlement Region (ISR) by territorial and regional public health departments are developed and communicated, and how these messages can further be improved.

I'm contacting you since you were identified as having unique understandings and experiences about developing and communicating information about healthy and safe food choices to the public in Tuktoyaktuk as [INSERT ROLE].

Participation in this study is voluntary. If you are interested in participating, myself and a local Research Lead will form a talking circle of about three people, either in person or by videoconference, to ask you questions about how territorial and regional public health departments can better develop messages about healthy country and store-bought food choices in Tuktoyaktuk in collaboration with local dietary message disseminators like yourself to promote traditional knowledge about food. The talking circle will take approximately two hours. Attached is a Letter of Information where you can learn more about the study's purpose and procedures.

If you are interested in participating in a talking circle, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up a talking circle time.

For more information regarding this study feel free to contact me at jgyapay@uwaterloo.ca or Kelly Skinner by email (kskinner@uwaterloo.ca) or phone (519-888-4567 x48164).

Sincerely,

Julia Gyapay

MSc(c) Public Health and Health Systems

School of Public Health and Health Systems, University of Waterloo

jgyapay@uwaterloo.ca

Appendix I: Follow-Up Key Informant Interview Telephone and Email Recruitment Script

Telephone recruitment script:

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called *"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".* I'm leading this study at the University of Waterloo as part of Dr. Kelly Skinner and Dr. Sonja Ostertag's larger C4FS and Country Foods for Good Health projects in the NWT. I'm studying how messages about food that are provided to community members in the Inuvialuit Settlement Region by territorial and regional public health departments are developed and communicated, and how these messages can be further improved.

I'm contacting you since you were identified as having unique understandings and experiences relating to developing and/or communicating health messages to the public about healthy food choices as [INSERT ROLE].

Participation in this study is voluntary and if you are interested in participating, I will ask you a series of questions by telephone or videoconference about your experiences and perspectives relating to developing and/or communicating messages to the public about healthy and safe store-bought and/or country food choices, from a traditional knowledge and climate change adaptation perspective. The interview will take no more than one hour.

Are you interested in participating in an interview? Or do you have any questions about the study?

<u>IF NO:</u>

Ok, that you for your time. If you change your mind, you can contact me by email at: jgyapay@uwaterloo.ca.

<u>IF YES:</u>

Great!

I'm available to schedule an interview at the following times:

[DATE AND TIMES]

What time works best for you?

I'll send you an email with an information letter for you to read and consent form for you to sign and email back to me. If you have any additional questions about the interview or the study, please feel free to send me an email to jgyapay@uwaterloo.ca

Telephone recruitment script (voicemail):

Hello [INSERT NAME], my name is Julia Gyapay, and I'm a Master's student in the School of Public Health at the University of Waterloo.

I'm calling to invite you to participate in a research study called *"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".* The purpose of the study is to understand how messages about food that are provided to community members in the Inuvialuit Settlement Region by territorial and regional public health departments are developed and communicated, and how these messages can be further improved.

I'm contacting you since you were identified as having unique understandings and experiences relating to developing and/or communicating health messages to the public about healthy food choices as [INSERT ROLE].

Participation in this study is voluntary and if you are interested in participating, I will ask you a series of questions by telephone or videoconference about your experiences and perspectives relating to developing and/or communicating messages to the public about healthy and safe store-bought and/or country food choices, from a traditional knowledge and climate change adaptation perspective. The interview will take no more than one hour.

If you are interested in participating in an interview, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up an interview time.

As a follow up to this message, I'm also sending you this information by email.

Thank you and have a great day. Bye.

Email recruitment message (sent after phone voicemail):

Hello [INSERT NAME],

My name is Julia Gyapay, and I'm a Master's student in the School of Public Health and Health Systems at the University of Waterloo, working under the supervision of Dr. Kelly Skinner.

This email is an invitation to participate in a research study called **Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptative diets in Tuktoyaktuk, Northwest Territories**, which is part of Dr. Kelly Skinner's "C4FS" and Dr. Sonja Ostertag's "Country Foods for Good Health" studies at the University of Waterloo.

The purpose of this study is to learn how messages about food that are provided to community members in the Inuvialuit Settlement Region (ISR) by territorial and regional public health departments are developed and communicated, and how these messages can further be improved.

I'm contacting you since you were identified as having unique understandings and experiences relating to developing and/or communicating health messages to the public about healthy food choices as [INSERT ROLE].

Participation in this study is voluntary and if you are interested in participating, I will ask you a series of questions by telephone or videoconference about your experiences and perspectives relating to developing and/or communicating messages to the public about healthy and safe store-bought and/or country food choices, from a traditional knowledge and climate change adaptation perspective. The interview will take no more than one hour. Attached is a Letter of Information where you can learn more about the study's purpose and procedures.

If you are interested in participating in an interview, please contact me (Julia Gyapay) at jgyapay@uwaterloo.ca. Once I receive your confirmation email, I will provide you with more information about the study and, if you are still willing to participate, will set up an interview time.

For more information regarding this study feel free to contact me at jgyapay@uwaterloo.ca or Kelly Skinner by email (kskinner@uwaterloo.ca) or phone (519-888-4567 x48164).

Sincerely,

Julia Gyapay

MSc(c) Public Health and Health Systems

School of Public Health and Health Systems, University of Waterloo

jgyapay@uwaterloo.ca

Appendix J: Storytelling Interview Participant Information Letter and Consent Form

INFORMATION LETTER FOR PARTICIPANT

University of Waterloo

[DATE]

Dear [NAME OF PARTICIPANT],

This letter is an invitation to participate in research we are conducting at the university of Waterloo, Ontario. The title of this research project is *"**Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".*** This project bridges the larger *"Country Foods for Good Health"* and *C4FS ("Community Capacity for Climate Change and Food Security Action in the NWT")* projects taking place in the NWT.

You have unique understandings and stories about traditional knowledge relating to healthy foods and ways of adapting traditional food practices because of climate change. We would like to interview you to better understand whether you use traditional knowledge to make decisions about the quality and safety of country food, if you are changing the way you are harvesting or preparing country food because of climate change, if you share this traditional knowledge with your community, and if you think this knowledge should be included in future public health messaging promoting healthy and safe food choices to the public in Tuktoyaktuk.

You can take part in this interview if you are an Inuvialuit country food harvester or Elder residing in Tuktoyaktuk and would like to share stories about whether you use traditional knowledge make healthy and safe food choices.

Purpose of this study

The purpose of the study is to describe how public health dietary messages that guide food choice in the ISR are developed and communicated, and to find out how local perspectives and Inuvialuit traditional knowledge about food and climate change adaptation can be further included in future dietary messaging to more effectively support healthy, safe and adaptive diets in the ISR.

Involvement in the study

In total, the interview will take no more than 1 hour and will involve storytelling and open-ended questions. The interview will either take place in person, in a mutually agreed upon location, over phone, or videconference. A local Research Lead hired for the study and Julia Gyapay (MSc student at University of

Waterloo) will ask you to share your experiences and perspectives about traditional knowledge, food and climate change in Tuktoyaktuk.

Your participation in this study is completely voluntary. Even if you decide to participate you are free to withdraw from the interview or study at any time. If you decide to withdraw from the study, by contacting Julia (contact information is below), all data collected will be destroyed. During the interview, you do not have to answer any questions that you do not want to, or which make you feel uncomfortable. We consider the risks associated with this research to be very low, and in line with the risks encountered in your everyday life. During the interview, you can also ask that portions of our discussion or your response not be recorded.

What will happen after the interview

With your permission, the interview will be digitally recorded so that answers can be later reviewed and transcribed for analysis. You will have the chance to read a copy of the transcript to check for mistakes before we use any information you share with us.

Privacy

Your identity and participation will remain confidential. Your name or any other personal identifying information will not appear in any research papers or publications resulting from this study unless you tell us it is okay. All electronic data, including the digital recording and your anonymized interview transcript will be stored on a password-protected computer of Dr. Skinner for a minimum of seven years at the University of Waterloo. All paper notes will be stored in Dr. Skinner's locked office at the University of Waterloo and confidentially destroyed after seven years. Only myself and my research team will have access to these materials.

Reporting

Presentations and reports using information from the interview will not identify you or any of your personal information. At the end of this study, we will work with our project partners at the Inuvialuit Regional Corporation and GNWT Department of Health and Social Services to develop appropriate knowledge sharing materials for your community, which could involve community presentations and reports. We also plan to publish academic papers that will share the knowledge from this study with other researchers, government, and community members.

Ethics statement

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [INSERT #]. If you have questions for the Committee contact the Office of Research Ethics, at 519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca. [AURORA RESEARCH INSTITUTE].

Contact

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please contact Julia Gyapay by email at jgyapay@uwaterloo.ca or Kelly Skinner by email at kskinner@uwaterloo.ca or by phone at 519-888-4567 x48164.

I hope that the results of this study will be beneficial to you and to Inuvialuit across the ISR and NWT, as well as the broader research community. I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours sincerely,

[SIGNATURE]

Julia Gyapay
MSc(c) Public Health and Health Systems
School of Public Health and Health Systems, University of Waterloo
jgyapay@uwaterloo.ca

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Julia Gyapay in the School of Public Health and Health Systems at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [ORE#XXXXX]. If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact [insert researcher's name and contact information].

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐YES ☐NO

I agree to have my interview audio recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

IF WRITTEN CONSENT:

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

Name of the researcher: _____ Date: _____

Signature of the researcher: _____

CODED PARTICIPANT ID:_____

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Appendix K: Talking Circle Participant Information Letter

INFORMATION LETTER FOR PARTICIPANT

University of Waterloo

[DATE]

Dear [NAME OF PARTICIPANT],

Would you like to take part in a talking circle to document knowledge and preferences related to public health messaging about healthy foods and traditional knowledge of food in Tuktoyaktuk? Julia Gyapay, a Master's researcher from the University of Waterloo in Ontario is conducting a research project titled ***"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".*** This project bridges the larger *"Country Foods for Good Health"* and *C4FS ("Community Capacity for Climate Change and Food Security Action in the NWT")* projects taking place in the NWT.

You have unique understandings and experiences about developing and communicating information about healthy and safe food choices to the public in Tuktoyaktuk. We would like to invite you to participate in a talking circle to discuss whether further Inuvialuit traditional knowledge and local perspectives should be included in future dietary messaging promoting healthy and safe food choices in Tuktoyaktuk and if so, your preferences for what this process should look like.

You can take part in this project if you are involved in developing and/or communicating messages about healthy and safe store-bought and/or country food choices in Tuktoyaktuk as a public health professional or Inuvialuit country food Knowledge Holder (Elder or harvester).

Purpose of this study

The purpose of the study is to describe how public health dietary messages that guide food choice in the ISR are developed and communicated, and to find out how local perspectives and Inuvialuit traditional knowledge about food and climate change adaptation can be further included in future dietary messaging to more effectively support healthy, safe and adaptive diets in the ISR.

Involvement in the study

In total, the talking circle will take approximately 2 hours and will involve open-ended questions. The talking circle will take place in a group of about three people, either in person or by videoconference. A local Research Lead hired for the study and Julia Gyapay (MSc student at University of Waterloo) will ask you questions about how regional and territorial public health departments can better develop messages

about healthy country and store-bought food choices in Tuktoyaktuk in collaboration with local dietary message disseminators like yourself to promote traditional knowledge and local perspectives about food.

Your participation in this study is completely voluntary. Even if you decide to participate you are free to withdraw from the talking circle or study at any time. If you decide to withdraw from the study, by contacting Julia (contact information is below), all data collected will be destroyed. During the talking circle, you do not have to answer any questions that you do not want to, or which make you feel uncomfortable. We consider the risks associated with this research to be very low, and in line with the risks encountered in your everyday life.

What will happen after the talking circle

The group discussion will be audio-recorded with your permission so that answers can be later reviewed and transcribed for analysis.

Privacy

Your identity and participation will be kept private by the researchers. We ask that you do not share any comments made by other participants. All group participants will be asked to keep the privacy of group members; however, we cannot guarantee that others will respect the privacy of the group. Your name or any other personal identifying information will not appear in any research papers or publications resulting from this study unless you tell us it is okay. All electronic data, including the digital recording the anonymized group transcript will be stored on a password-protected computer of Dr. Skinner for a minimum of seven years at the University of Waterloo. All paper notes will be stored in Dr. Skinner's locked office at the University of Waterloo and confidentially destroyed after seven years. Only myself and my research team will have access to these materials.

Reporting

Presentations and reports using information from the talking circle will not identify you or any of your personal information. At the end of this study, we will work with our project partners at the Inuvialuit Regional Corporation and GNWT Department of Health and Social Services to develop appropriate knowledge sharing materials for your community, which could involve community presentations and reports. We also plan to publish academic papers that will share the knowledge from this study with other researchers, government, and community members.

Ethics statement

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [INSERT #]. If you have questions for the Committee contact the Office of Research Ethics, at 519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca. [AURORA RESEARCH INSTITUTE].

Contact

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please contact Julia Gyapay by email at jgyapay@uwaterloo.ca or Kelly Skinner by email at kskinner@uwaterloo.ca or by phone at 519-888-4567 x48164.

I hope that the results of this study will be beneficial to you and to Inuvialuit across the ISR and NWT, as well as the broader research community. I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours sincerely,

[SIGNATURE]

Julia Gyapay
MSc(c) Public Health and Health Systems
School of Public Health and Health Systems, University of Waterloo
jgyapay@uwaterloo.ca

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Julia Gyapay in the School of Public Health and Health Systems at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that the group interview will be audio recorded to ensure an accurate recording of the talking circle responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [ORE#XXXXX]. If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact [insert researcher's name and contact information].

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

IF WRITTEN CONSENT:

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

Name of the researcher: _____ Date: _____

Signature of the researcher: _____

CODED PARTICIPANT ID:_____

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Appendix L: Follow-Up Key Informant Interview Participant Information Letter

INFORMATION LETTER FOR PARTICIPANT

University of Waterloo

[DATE]

Dear [NAME OF PARTICIPANT],

This letter is an invitation to participate in research we are conducting at the university of Waterloo, Ontario. The title of this research project is *"**Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".*** This project bridges the larger *"Country Foods for Good Health"* and *C4FS ("Community Capacity for Climate Change and Food Security Action in the NWT")* projects taking place in the NWT.

You have unique understandings and experiences relating to developing and/or communicating health messages to the public about healthy food choices. We would like to interview you to better understand whether your department's current messaging about healthy store-bought and/or country food choices include traditional knowledge, Indigenous perspectives about food, and/or climate change adaptation. We are also interested in understanding whether you would like to see further traditional knowledge included in your dietary messaging, and how this can be done.

You can take part in this interview if you are a territorial or regional public health representative involved in the development and/or dissemination of health messages about food at the GNWT DHSS in Yellowknife or the Inuvialuit Regional Corporation in Inuvik.

Purpose of this study

The purpose of the study is to describe how public health dietary messages that guide food choice in the ISR are developed and communicated, and to find out how local perspectives and Inuvialuit traditional knowledge about food and climate change adaptation can be further included in future dietary messaging to more effectively support healthy, safe and adaptive diets in the ISR.

Involvement in the study

In total, the interview will take no more than 1 hour and will involve open-ended questions. The interview will either take place by telephone or videoconference. Julia Gyapay (MSc student at University of Waterloo) will ask you to share your experiences and perspectives about developing and/or communicating messages to the public about healthy and safe store-bought and/or country food choices, from a traditional knowledge and climate change adaptation perspective.

Your participation in this study is completely voluntary. Even if you decide to participate you are free to withdraw from the interview or study at any time. If you decide to withdraw from the study, by contacting Julia (contact information is below), all data collected will be destroyed. During the interview, you do not have to answer any questions that you do not want to, or which make you feel uncomfortable. We consider the risks associated with this research to be very low, and in line with the risks encountered in your everyday life. During the interview, you can also ask that portions of our discussion or your response not be recorded.

What will happen after the interview

With your permission, the interview will be digitally recorded so that answers can be later reviewed and transcribed for analysis. You will have the chance to read a copy of the transcript to check for mistakes before we use any information you share with us.

Privacy

Your identity and participation will remain confidential. Your name or any other personal identifying information will not appear in any research papers or publications resulting from this study unless you tell us it is okay. All electronic data, including the digital recording and your anonymized interview transcript will be stored on a password-protected computer of Dr. Skinner for a minimum of seven years at the University of Waterloo. All paper notes will be stored in Dr. Skinner's locked office at the University of Waterloo and confidentially destroyed after seven years. Only myself and my research team will have access to these materials.

Reporting

Presentations and reports using information from the interview will not identify you or any of your personal information. At the end of this study, we will work with our project partners at the Inuvialuit Regional Corporation and GNWT Department of Health and Social Services to develop appropriate knowledge sharing materials for your community, which could involve community presentations and reports. We also plan to publish academic papers that will share the knowledge from this study with other researchers, government, and community members.

Ethics statement

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [INSERT #]. If you have questions for the Committee contact the Office of Research Ethics, at 519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca. [AURORA RESEARCH INSTITUTE].

Contact

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please contact Julia Gyapay by email at jgyapay@uwaterloo.ca or Kelly Skinner by email at kskinner@uwaterloo.ca or by phone at 519-888-4567 x48164.

I hope that the results of this study will be beneficial to you and to Inuvialuit across the ISR and NWT, as well as the broader research community. I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours sincerely,

[SIGNATURE]

Julia Gyapay

MSc(c) Public Health and Health Systems

School of Public Health and Health Systems, University of Waterloo

jgyapay@uwaterloo.ca

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Julia Gyapay in the School of Public Health and Health Systems at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [ORE#XXXXX]. If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact [insert researcher's name and contact information].

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐YES ☐NO

I agree to have my interview audio recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

IF WRITTEN CONSENT:

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

CODED PARTICIPANT ID:_____

Name of the researcher: _____ Date: _____

Signature of the researcher: _____

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Appendix M: Storytelling Interview A Guide

1. **Can you tell me a story about what healthy food means to you as an Inuvialuit?**

   Prompt: What traditional foods or foods from the grocery store help keep you healthy? Do these foods support your nutritional health, cultural health, mental health, physical health?

2. **Can you tell me a story of how you decided whether a traditional food was healthy to harvest or eat?**
   - How do you share this knowledge with others?
   - When do you share this knowledge (e.g., while harvesting, eating)?

   If no:

   - If you feel comfortable sharing, is there a reason why not?

3. **Are you changing the way you harvest or prepare traditional food because of climate change?**

   If yes:

   - Can you tell me a story about what you're doing differently, and why?
   - How do you share this knowledge with others?
     - If yes: When do you share this information (e.g., while harvesting, eating)? How do you share this information?

   If no:

   - Do you know of others in your community who have changed the way they harvest or prepare country food because of climate change?
     - What did they do differently?

4. **Have you heard or seen health messages that encourage you to eat traditional foods in Tuktoyaktuk?**

   Prompt: Facebook posts, food fact sheets, food guides, recipes from GNWT DHSS, IRC or Health Canada

If yes:

- What was the message(s) about? Who was the message(s) from? How did you hear/see it (them)?
    - Did the message(s) include your traditional knowledge about this food?

        If yes:

        - How did this message include your culture or traditional knowledge?
        - Did you like the message that included your traditional knowledge? Is there anything you didn't like about it?

5. **Do you think your traditional knowledge should be included in future messaging promoting healthy food choices to your community?**

    If yes:

    - Why?
    - What type of traditional knowledge about traditional food would you like to see shared in future messages?
        - *Prompt: how to safely prepare traditional food, how to respectfully harvest, what food to eat?*
    - How should traditional knowledge be gathered and shared by the people currently creating these messages (IRC and GNWT DHSS public health departments)?

    If not:

    - If you feel comfortable sharing, why do you think traditional knowledge should not be included in future messages?

6. **Is there anything else you would like to add?**

Appendix N: Storytelling Interview B Guide

1. **Have you heard messages encouraging you to eat healthy store-bought foods or traditional foods in Tuktoyaktuk?**

For example: advice about healthy food choices you were given by health workers in town, during cooking programs, on Facebook or on posters you've seen in town

If yes:

- **What was the message about? Who was the message from? How did you hear/see it?**

- **Did the message include your Inuvialuit knowledge about traditional food?**

  If yes:

  - **How did this message include your traditional knowledge?**
  - **Did you like the message that included your traditional knowledge? Is there anything you didn't like about it?**

2. **Do you think Inuvialuit knowledge about traditional food should be included in messaging promoting healthy food choices in our community?**

   If yes:

   - **Why?**
   - **What traditional knowledge about food would you like to see shared in future messages?**
     Prompt: how to respectfully harvest or prepare foods, how to safely prepare foods, nutritional benefits of country foods, uses of country foods, importance of food for cultural health, mental health

   - **How would you like to see this knowledge shared?**
     Prompt: Inuvialuit art? Inuvialuktun translations? Photos and stories from locals

   - **Who should communicate this knowledge?**

If no:

- **If you feel comfortable, can you share why not?**

3. **What information about store-bought foods would you like to see shared in future messages?**
   Prompt: nutritional benefits of healthy store-bought foods, how to cook with fruits and vegetables, how to choose healthy store-bought foods on a budget

   - **How would you like to see this information shared?**
     Prompt: Inuvialuit art? Inuvialuktun translations? Photos and stories from locals?

   - **Who should communicate these messages from our community?**

   If no:

   - **If you feel comfortable, can you share why not?**

4. **Do you think the Inuvialuit Regional Corporation and GNWT Department of Health and Social Services should develop messages about healthy food choices in partnership with you and others who hear and see these messages in our community?**

   If no:

   - **What should this process look like?**
   - **What would help this process work well?**
   - **Who in the community do you think should be involved?**

   If no:

   - If you feel comfortable, can you share why not?

5. **Is there anything else you would like to add about how you think messaging about healthy food can be improved?**

Appendix O: Talking Circle Interview Guide

1. **Do you communicate information to the public about healthy store-bought foods or traditional foods through your work?**

   If yes:

   - **What information about healthy food do you communicate to the public?**

   - **How do you communicate this information?**
     Prompt: one-on-one, through cooking programs, school programs, posters, Facebook etc.)

   If no:

   - **Have you seen posters or heard ads on the TV or radio that encourage you to eat healthy store-bought foods or traditional foods?**

   - **What was the message about? Who was the message from? How did you hear/see it?**

     - **Did the message include Inuvialuit knowledge about traditional food?**
       If yes:
       - How did this message include traditional knowledge?
       - Did you like the message that included traditional knowledge? Is there anything you didn't like about it?

2. **Do you think Inuvialuit knowledge about traditional food should be included in messaging that promotes healthy food choices in our community?**

   If yes:

   - **Why?**
   - **What traditional knowledge about food would you like to see shared in future messages?**
     (Prompt: how to respectfully harvest or prepare foods, how to safely prepare foods, nutritional benefits of country foods, uses of country foods, importance of food for cultural health, mental health)

- **How would you like to see this knowledge shared?**
  Prompt: Inuvialuit art? Inuvialuktun translations? Photos and stories from locals)

- **Who should communicate this knowledge?**

If no:

- **If you feel comfortable, can you share why not?**

3. **What information about store-bought foods would you like to see shared in future messages?**
   (Prompt: nutritional benefits of healthy store-bought foods, how to cook with fruits and vegetables, how to choose healthy store-bought foods on a budget)

   - **How would you like to see this information shared?**
     (*Prompt: Inuvialuit art? Inuvialuktun translations? Photos and stories from locals?)*

   - **Who should communicate these messages from our community?**

   If no:

   - **If you feel comfortable, can you share why not?**

4. **Do you think regional and territorial public health departments should develop messages about healthy food choices in partnership with yourself or others like you in Tuktoyaktuk who are involved in communicating information about healthy food to the public?**

   (Prompt: for example the Inuvialuit Regional Corporation and GNWT Department of Health and Social Services)

   If yes:

   - **What should this process look like?**

- **What would help this process work well?**
- **Who in the community do you think should be involved?**

If no:

- If you feel comfortable, can you share why not?

5. **Is there anything else you would like to add about how you think messaging about healthy food can be improved?**

Appendix P: Follow-Up Key Informant Interview Guide

[TERRITORIAL KEY INFORMANT]

1. **Does your department's public health messaging, promoting healthy store-bought and/or country food choices, include Indigenous perspectives or traditional knowledge about food?**

   If yes:

   - Can you give me an example of a recent message promoting healthy food choices that included Indigenous perspectives or traditional knowledge?
   - Are these Indigenous perspectives or traditional knowledge applicable to all Indigenous peoples in the NWT, or are they tailored to First Nations, Inuvialuit or Métis peoples?
   - Are Indigenous perspectives or traditional knowledge included in messaging about country foods, store-bought foods, or both?
   - How are these cultural perspectives and traditional knowledge gathered when developing the messaging?
   - What has made it easier and harder for your department to incorporate traditional knowledge and local perspectives in messages about country and market foods for the NWT?

   If no:

   - If you wish to share, is there a reason why not?

[REGIONAL (ISR) KEY INFORMANT]

2. **Does your department's public health messaging, promoting healthy store-bought and/or country food choices, include Inuvialuit perspectives or traditional knowledge about food?**

   If yes:

   - Can you give me an example of a recent message promoting healthy food choices that included Inuvialuit perspectives or traditional knowledge?
   - Are these Inuvialuit perspectives or traditional knowledge applicable to the entire ISR, or are they tailored to certain communities?

- Are Inuvialuit perspectives or traditional knowledge included in messaging about country foods, store-bought foods, or both?
- How are these Inuvialuit perspectives and traditional knowledge gathered when developing the messaging?
- What has made it easier and harder for your department to incorporate traditional knowledge and local perspectives in messages about country and market foods for the ISR?

If no:

- If you wish to share, is there a reason why not?

[ALL KEY INFORMANTS]

3. **Do you think more local perspectives and traditional knowledge about store-bought and country food should be included in future messaging about healthy food choices?**

If yes:

- Why?
- What local perspectives and traditional knowledge about food would you like to see shared in future messages? *(Prompt: nutritional benefits of healthy store-bought foods/country foods, how to cook with fruits and vegetables/country foods, how to choose healthy store-bought foods on a budget, stories from residents)*
- How do you recommend gathering and sharing these local perspectives and traditional knowledge in messages to the public? (*Prompt: Inuvialuit art? Inuvialuktun translations? Photos and stories from locals?)*

If no:

- If you wish to share, is there a reason why not?

4. **Does your department's messaging promoting healthy store-bought and/or country food choices address climate change?**

If yes:

- Can you give me an example of how climate change is addressed in your department's messaging?

- What aspects of climate change are addressed? *(Prompts: adapting harvesting, adapting food preparation methods, safe storage of food, impacts of climate change on shipping store-bought food*

If no:

- If you wish to share, is there a reason why not?

5. **Are there other considerations beyond local perspectives, traditional knowledge and climate change that you think are missing in your department's current messaging promoting healthy food choices?**

6. **Is your department currently collaborating with community members who are communicating messages about healthy foods (e.g., local public health professionals, Elders) to develop messages?**

If yes:

- Who is your department collaborating with?
- What makes this process easier/harder?

If no:

- If you wish to share, do you know why this is not being done?
- Has this type of collaboration been done in the past?
    - If yes: what made the process easier/harder? Why is this no longer being done?

- Do you think your department would be interested in doing this in the future?
    - If yes: what would help you do so?

7. **Is there anything else you would like to add?**

Appendix Q: Storytelling Interview Participant Feedback Letter

University of Waterloo

[DATE]

Dear [INSERT NAME OF PARTICIPANT],

I would like to thank you for your participation in this study entitled ***"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".***

As a reminder, the purpose of this study is to understand whether you use traditional knowledge to make decisions about the quality and safety of country food, if you are changing the way you are harvesting or preparing country food because of climate change, if you share this traditional knowledge with your community, and if you think this knowledge should be included in future public health messaging promoting healthy and safe food choices to the public in Tuktoyaktuk.

The data collected during interviews will contribute to a better understanding of how public health dietary messages that guide food choice in the ISR are developed and communicated, and how local perspectives and Inuvialuit traditional knowledge about food and climate change adaptation can be further included in future dietary messaging to more effectively support healthy, safe and adaptive diets in the ISR.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [ORE#XXXXX - insert your ORE file # here]. If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Julia Gyapay by email at jgyapay@uwaterloo.ca or Kelly Skinner at 519-888-4567, ext. 38164 or by email at kskinner@uwaterloo.ca.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, we will work with our project partners at the Inuvialuit Regional Corporation and GNWT DHSS to develop appropriate knowledge sharing materials for your community, which could involve community presentations and reports. We also plan to publish academic papers and present at conferences that will share the knowledge from this study with other researchers, government, and community members.

If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by March 2021, I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email as noted below.

Yours sincerely,

[SIGNATURE]

Julia Gyapay
MSc(c) Public Health and Health Systems
School of Public Health and Health Systems, University of Waterloo
jgyapay@uwaterloo.ca

Appendix R: Talking Circle Participant Feedback Letter

University of Waterloo

[DATE]

Dear [INSERT NAME OF PARTICIPANT],

I would like to thank you for your participation in this study entitled ***"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".***

As a reminder, the purpose of this study is to document your knowledge and preferences related to public health messaging about healthy foods and traditional knowledge of food in Tuktoyaktuk.

The data collected during interviews will contribute to a better understanding of how public health dietary messages that guide food choice in the ISR are developed and communicated, and how local perspectives and Inuvialuit traditional knowledge about food and climate change adaptation can be further included in future dietary messaging to more effectively support healthy, safe and adaptive diets in the ISR.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [ORE#XXXXX - insert your ORE file # here]. If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Julia Gyapay by email at jgyapay@uwaterloo.ca or Kelly Skinner at 519-888-4567, ext. 38164 or by email at kskinner@uwaterloo.ca.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, we will work with our project partners at the Inuvialuit Regional Corporation and GNWT DHSS to develop appropriate knowledge sharing materials for your community, which could involve community presentations and reports. We also plan to publish academic papers and present at conferences that will share the knowledge from this study with other researchers, government, and community members.

If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by May 2021, I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email as noted below.

Yours sincerely,

[SIGNATURE]

Julia Gyapay
MSc(c) Public Health and Health Systems
School of Public Health and Health Systems, University of Waterloo
jgyapay@uwaterloo.ca

Appendix S: Follow-Up Key Informant Interview Participant Feedback Letter

University of Waterloo

[DATE]

Dear [INSERT NAME OF PARTICIPANT],

I would like to thank you for your participation in this study entitled ***"Supporting Inuvialuit food sovereignty in a changing climate: Characterizing and co-constructing culture-centered dietary messaging for healthy, safe and adaptive diets in Tuktoyaktuk, Northwest Territories".***

As a reminder, the purpose of this study is to understand whether your department's current messaging about healthy store-bought and/or country food choices include traditional knowledge, Indigenous perspectives about food, and/or climate change adaptation. We are also interested in understanding whether territorial and regional public health departments in the NWT wish to see further traditional knowledge included in dietary messaging, and how this can be done.

The data collected during interviews will contribute to a better understanding of how public health dietary messages that guide food choice in the ISR are developed and communicated, and how local perspectives and Inuvialuit traditional knowledge about food and climate change adaptation can be further included in future dietary messaging to more effectively support healthy, safe and adaptive diets in the ISR.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee [ORE#XXXXX - insert your ORE file # here]. If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Julia Gyapay by email at jgyapay@uwaterloo.ca or Kelly Skinner at 519-888-4567, ext. 38164 or by email at kskinner@uwaterloo.ca.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, we will work with our project partners at the Inuvialuit Regional Corporation and GNWT DHSS to develop appropriate knowledge sharing materials for your community, which could involve community presentations and reports. We also plan to publish academic papers and present at conferences that will share the knowledge from this study with other researchers, government, and community members.

If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by June 2021, I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email as noted below.

Yours sincerely,

[SIGNATURE]

Julia Gyapay
MSc(c) Public Health and Health Systems
School of Public Health and Health Systems, University of Waterloo
jgyapay@uwaterloo.ca

Appendix T: Mangilaluk School Traditional Food Cookbook Project

I co-created a traditional food[7] cookbook, *Mamaqtuq* ("a good taste" or "delicious") in Tuktoyaktuk in partnership with the Mangilaluk school students and staff between January and March 2021 (see Figure 10). The cookbook features a collection of local traditional recipes selected and prepared by the Mangilaluk school students through photos, art and stories, promoting the intergenerational exchange of traditional knowledge between students and their community. *Mamaqtuq* is dedicated in memory of Mabel Noksana (August 2, 1941-February 27, 2021).

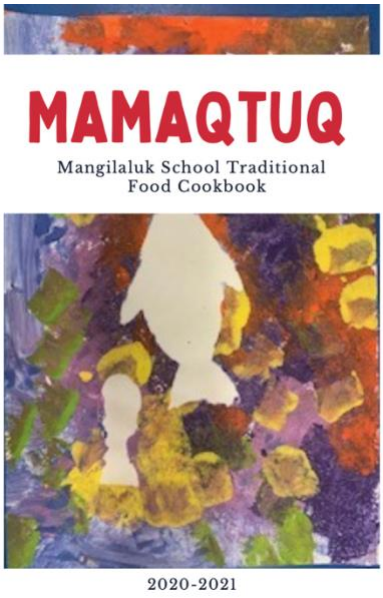

Figure 10: Cover of "Mamaqtuq—Mangilaluk School Traditional Food Cookbook"

This project was a way for me to give back to the community during my time as a graduate student working on the C4FS and CFGH projects and was therefore not a research component of my thesis. During my initial meeting with the TCC in February 2020, I was told about the importance of involving youth and giving back to the community beyond my research. Throughout my visit I also heard about the community's interest in including more country food recipes in community cooking programs. Inspired by this feedback, I received a small grant from Ecology North through my involvement in their Youth Climate Action Training program and additional funds were generously provided by the Inuvialuit Regional Corporation and the Mangilaluk School to create a traditional food project with youth in Tuktoyaktuk. I presented my project idea (a traditional food recipe project created in a format desired by

[7] 'Traditional food' was the preferred term used by the cookbook project partners, therefore I am using 'traditional food' rather than 'country food' when referring to the cookbook.

the school) to the TCC in September 2020 to demonstrate my response to their feedback and to receive their input. The goals of the project were: 1) to promote the intergenerational exchange of knowledge about traditional foods between students and their families in Tuktoyaktuk; 2) to promote the physical, mental and cultural health benefits of preparing and consuming traditional foods; and 3) to support Inuvialuit food sovereignty. I met with Kendra Tingmiak (IRC Inuit Research Advisor) in October to ensure the project was culturally appropriate and to determine who to partner with at the school. Once I received support from Kendra to begin the project, I made further modifications based on her feedback, and connected with the Vice Principal and high school teacher, Michèle Tomasino, and Student and Family Support Worker, Meeka Steen, at the Mangilaluk School to determine their interest in partnering on this project. Guided by their interest in creating a cookbook, the project aimed to share the community's traditional recipes, art, stories and Inuvialuit knowledge through a book created by students. Together we developed a school-wide project which launched mid-January 2021. Each class chose one traditional food recipe to contribute to the cookbook, provided by relatives or Elders in the community. Two students per class received grocery kits with ingredients to prepare the recipes at home with their families. Throughout the project students had the opportunity to learn about how traditional foods were harvested, prepared and cooked in the past and learn Inuvialuktun words for traditional foods with their families, teachers and classmates. Students took photos of their recipes and prepared artwork and stories about these traditional foods. Their teachers collected the recipes, stories, photos and art and I organized them in a digital book. Printed copies were provided to all students at the school, and more are being printed to share with the community and other ISR communities, in response to overwhelming interest. Similar projects are now being planned across the ISR. To request a digital copy of the cookbook, please contact Dr. Kelly Skinner (kskinner@uwaterloo.ca).

Overall, this project further strengthened my relationship with the community during my Master's research, which I was especially grateful for given my inability to travel to Tuktoyaktuk during the pandemic. This project also helped me learn about Inuvialuit culture, language, diet, local food realities and community updates while not being physically present in Tuktoyaktuk. I am honoured to have been part of this project as I was able to directly support Inuvialuit food sovereignty through community-led and -driven work, producing a non-academic resource that was desired and valued by the community.