From the Minds of Youth:

Exploring Inuit Youth Resilience within a Changing Climate and Applications for Climate Change Adaptation in Nunatsiavut, Labrador, Canada

by
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October 2014

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Arts in Geography

ABSTRACT

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The Canadian North is experiencing rapid social, cultural, economic, political, and environmental change that have direct impacts on the lives of Inuit living in this region, as well as serious implications for the future of the Inuit youth. Essential to facing this challenging context is a resilient youth population with the adaptive capacities and coping skills to respond to multiple stressors and pressures. This thesis considers the question of how to foster youth resilience and support youth protective factors that enhance youth well-being and can help young people deal with change, specifically climate change. To answer this question, a systematic literature review, a community-based, youth-led, cross-cultural participatory video project, and a regional community-based study were undertaken to explore youth-identified protective factors and examine challenges to these factors from youth perspectives and experiences. Specifically, this thesis characterizes the protective factors that influence Circumpolar Indigenous youth mental health resilience to climate change; explores participatory video as a process that can foster protective factors thereby demonstrating potential to be used in adaptation as a way to enhance youth resilience; documents youth-identified protective factors that support mental health and well-being amidst change (i.e. social, cultural, economic, or environmental); and examines how climatic changes and related environmental impacts challenge these factors throughout the region of Nunatsiavut from a youth perspective. The findings from this work highlight the importance of youth voices, perspectives, and involvement within research and practitioner communities, and contributes to the growing body of research on Circumpolar Indigenous youth resilience that can inform climate change adaptation efforts.

RÉSUMÉ

De l'esprit des jeunes:

Une exploration de la résilience de la jeunesse Inuit dans un climat changeant et applications pour l'adaptation aux changements climatiques au Nunatsiavut, Labrador, Canada

Le Nord Canadien éprouve présentement de rapides changements sociaux, culturels, économiques, politiques et environnementaux qui ont des impacts directs sur la vie des Inuits dans cette région, en plus de sérieuses implications pour le futur de la jeunesse Inuit. Afin d'affronter ce contexte difficile, il est essentiel pour la jeunesse Inuit d'éprouver de la résilience envers leur capacité d'adaptation et de développer les aptitudes nécessaires pour lutter contre les multiples sources de stress et de pression. Cette thèse se questionne sur la façon de favoriser la résilience des jeunes ainsi que sur le soutient des facteurs qui améliorent la protection de la jeunesse et de leur bien-être en plus d'aider les jeunes Inuits à faire face au changement, plus particulièrement les changements climatiques. Afin de répondre à cette question, un examen systématique de la littérature, un projet de vidéo participatif interculturel, établi dans la communauté et mené par les jeunes, ainsi qu'une étude régionale établie dans la communauté ont été entrepris afin d'explorer les facteurs de protection identifiés par les jeunes et d'examiner les défis de ces éléments à partir de perspectives et d'expériences de ces jeunes. Plus spécifiquement, cette thèse caractérise les facteurs de protection qui influencent la résilience de la santé mentale des jeunes Indigènes du cercle polaire aux changements climatiques; elle explore la vidéo participative en tant que processus qui peut favoriser les facteurs de protection pour ainsi démontrer le potentiel d'adaptation comme un moyen d'améliorer la résilience juvénile; elle documente les facteurs de protection identifiés par les jeunes qui supportent la santé mentale et le bien-être au sein du changement (ex : social, culturel, économique ou environnemental); et elle examine comment les changements climatiques et les ses impacts environnementaux mettent au défi ces facteurs de protection partout dans la région de Nunatsiavut, vu dans la perspective des jeunes; ainsi que les résultats de cette étude qui mettent en évidence l'importance de la voix, de la perspective et de l'implication des jeunes au sein de cette recherche et des communautés participantes, en plus de contribuer au nombre croissant de recherches sur la résilience des jeunes Indigènes du cercle polaire qui peuvent influencer les efforts d'adaptation aux changements climatiques.

NAITTUK UKAUSIK

Isumanginnit Inosuttuit:

Kaujisanningit Inuit Inosuttuit Piggagasuaningit Asianguvalliajumi Silami ammalu Kinugautet Silak Asianguvallianinganik Sungiutisagasuannimi Nunatsiavut Labrador, Canadami

Canadamiut Taggâni KaujisimalikKut tuavittumik inunni, ilikKusini, kenaujaliugutini, kavamani, ammalu avatet asianguvallianingit kajusijumik attuiniKadluni inosinginnik Inuit inilinni avittusimajuni, ammalu pimmagittumik sakKisimalittuk sivunitsanginni Inuit inosuttuit. Pimmagiujuk kamagiamut uKumaittumik ajunnamagittuk inosuttunut sungiusimagiamut iniujuni ammalu ilisimagialinginnik kamagasuagiamut uKumaittunik ajunnatunillu. Tamanna allatausimajuk isumatsasiugutaugialik apitsugiamut Kanuk atugajammangâta inosuttuit sungiutigiamut ikajutsilugillu inosuttut paigijaunitsangit uKumaittunit inosuttuit inosinginni ammalu ikajuttaugunnatut inosuttut kamagiamut asianguvalliajunik, piluattumik silak asianguvallianinganik. Kiujaunitsanga tâtsuma apitsotiup, piusiujuni allasimajut Kimiggugiamut, nunalinni, inosuttuit sivulittiunitsangit, ilikKusitigut ilauKatigellutik taggajâliuttaumajutigut suliatsausimajumi, avittusimajuni nunalet Kaujisallugit Kaujisagiamut inosuttuit ulinnaitaugiaKaningit paigijaunitsangit Kimiggulugillu uKumaittut pisimajut inosuttunit ammalu Kaujisimajanginnit. Piluattumik, tamakkua allataumajut paitsiutigigiangit atuttaujuni Silatsualimâmi NunaKakKâsimajut inosuttuit isumangit inositsiagittotigasuallugit kamagillugu silak asianguvallianinga; Kaujisannikut ilauKataugiamik taggajâni atuttaugajattuk piusiumitigiangit inosuttuit inosingit; allalugit inosuttuit ulinnaitaunitsangit paigijaugiamut uKumaittunit ikajutsigiangit inositsiagittotitsigasuannimut ammalu inosinginni asianguvalliajut (sollu, inunni, ilikKuset, kenaujaliugutet, ubvalu avatitigut); ammalu kamagillugit Kanuk silak asianguvalliamangât ammalu ilingajunik avatinut attaunigijanginnut uKumaittuit tamakkua sakKisimajut avittusimajuni Nunatsiavummi pisimajut inosuttuit isumagijanginnit. SakKisimajuit tamatsumangat suliagijausimajumit allatausimajut pimmagiujut inosuttuit nipanginnit, isumagijanginnit, ilauKatauninginnit Kaujisannikut ammalu ânniasiutinit nunalinni, ammalu ilauKatauningit piguvalliajuit timiujut Kaujisannikut Silatsualimâmi NunaKakKâsimajuni inosuttunut ilingajut Kaujimatitsigiamut silak asianguvallianingani sungiutisatsigiamut piggagasuannikut.

PREFACE & CONTRIBUTION OF AUTHORS

This thesis is written in manuscript-style and, therefore, consists of three stand-alone manuscripts. These manuscripts have been or will be published in academic journals. The following text outlines if and where the manuscripts have been published along with a list of co-authors and contributions of co-authors.

Manuscript #1: A review of protective factors and causal mechanisms that enhance the mental health of Indigenous Circumpolar youth

Authors: J. Petrasek MacDonald, Dr. James Ford, Dr. Ashlee Cunsolo Willox, and Dr. Nancy Ross

This review began as a course paper for a Health Geography course with Dr. Ross in fall 2012. Data collection, analysis, and writing were done by Joanna Petrasek MacDonald with guidance, feedback and editing from Dr. Ford, Dr. Cunsolo Willox and Dr. Ross. It was published in the *International Journal of Circumpolar Health* in December 2013.

Manuscript #2: Youth-led participatory video as a strategy to enhance Inuit youth adaptive capacities for dealing with climate change

Authors: J. Petrasek MacDonald, Dr. James Ford, Dr. Ashlee Cunsolo Willox, Konek Productions, 'My Word' Storytelling and Digital Media lab, Dr. Claudia Mitchell, Rigolet Inuit Community Government

This manuscript is currently being prepared for submission to the journal *Arctic.* This research was part of the IK-ADAPT (PI Dr. James Ford) and Inuit Mental Health Adaptation to Climate Change (PI Dr. Ashlee Cunsolo Willox) projects, in partnership with the Rigolet Inuit Community Government. The data collection, data analysis and writing were done by Joanna Petrasek MacDonald. Konek Productions, the 'My Word' Storytelling and Digital Media Lab, and the Rigolet Inuit Community Government were integral partners throughout the research process, especially in the fieldwork.

Manuscript #3: Youth-identified protective factors in a changing climate: Perspectives from Inuit youth in Nunatsiavut, Labrador

Authors: J. Petrasek MacDonald, Dr. Ashlee Cunsolo Willox**,** Dr. James Ford, Marilyn Baikie, Inez Shiwak, the IMHACC Team, and the Rigolet Inuit Community Government

This manuscript is currently being prepared for submission to *Social Science and Medici*ne. This research was part of the Inuit Mental Health Adaptation to Climate Change project co-led by Dr. Cunsolo Willox and the five Inuit community governments in each of the Nunatsiavut communities. Data collection was done by local research coordinators in the five communities of Nunatsiavut. Data analysis and writing was done by Joanna Petrasek MacDonald, with editing and revising support from Dr. Ford and Dr. Cunsolo Willox.

ACKNOWLEDGEMENTS

I would like to acknowledge the immense support and encouragement I have received from so many individuals and organizations throughout the past two years to complete this thesis. It was a tremendous privilege to have had the opportunity to join the Climate Change Adaptation Research Group at McGill University. I am especially grateful to have worked under Dr. James Ford, a supportive supervisor who always made time to talk things over, replied to my endless emailing at an unimaginable speed and always with thoughtful feedback, and welcomed all of my interests and ideas throughout the research process. In particular, I would like to acknowledge my Master's thesis committee who enriched my research and undoubtedly strengthened this thesis with their interdisciplinary contributions: Dr. Ford with his expertise in climate change, adaptation, and health; Dr. Ashlee Cunsolo Willox with her extensive experience and knowledge of climate change, mental health, and resilience; Dr. Claudia Mitchell with her in-depth background in participatory media methods and work with youth; and Dr. George Wenzel with his extensive work on Arctic anthropology. I am also grateful to Dr. Ashlee Cunsolo Willox and Dr. Sherilee Harper for their continuous belief in me during my undergraduate years and into my graduate studies. Thank you for setting me on the path to this Masters, and, in particular, for introducing me to the community of Rigolet in the first place.

I am forever grateful for the opportunity to have come to know and build a relationship with the wonderful community of Rigolet who welcomed me even before I stepped out of the Twin Otter plane for the first time. Thank you to Charlotte Wolfrey (AngajukKâk) and the Rigolet Inuit Community Government for their continuous support. Also, thank you to Tom Mugford and the staff and students at the Northern Lights Academy whose support for the participatory video project made for such an enjoyable experience. In particular, it was a privilege to work with seven amazing students in Rigolet. Thank you to those students who inspired me with their creativity and enthusiasm and spurred me on knowing that this thesis was important. In addition, I am very grateful for the wonderful hospitality of Sandi and Karl Michelin. Thank you for the bingo games, trips to the cabin, delicious meals, and wonderful company. And thank you to everyone in Rigolet who waved hello, invited me in for tea, and made me feel welcome. It was truly a pleasure to get to know you and your wonderful community!

It was a great privilege to have had the opportunity to collaborate with Inez Shiwak and Marilyn Baikie from the 'My Word': Storytelling and Digital Media lab in Rigolet as well as Jordan and Curtis Konek from Konek Productions. The participatory video project would not have been possible without these individuals with whom I laughed with and learned from along the way. Thank you all for making the participatory video project such a positive experience.

This project was part of two larger research projects and I'd like to thank all the research collaborators from the Inuit Traditional Knowledge for Adapting to the Health Effects of Climate Change project (IK-ADAPT) and the Inuit Mental Health Adaptation to Climate Change project (IMHACC). From the IMHACC team in particular I'd like to thank Juliana Flowers, Myrtle Groves, Greg Jacque, Noah Nochasak, Marilyn Baikie, Inez Shiwak, Nain Inuit Community Government, Hopedale Inuit Community

Government, Postville Inuit Community Government, and Makkovik Inuit Community Government.

I would also like to thank Adam Bonnycastle for making beautiful maps and Kirstie Booth for designing creative graphics that are used in the manuscripts. Thank you to Kevin Landry and Michelle Maillet for the French translation of the abstract and to Rita Andersen, translator for the Nunatsiavut government, for the Inuktitut translation. In addition, thank you to Julie Jones for assisting me with the first stages of the systematic literature review. To Nancy Secondo and Franca Mancuso, thank you for all your help with all the complicated expense reports over the past two years.

I'd like to thank the Social Sciences and Humanities Research Council, The Nasivvik Centre for Inuit Health and Changing Environments, The Royal Canadian Geographical Society, and the Department of Geography at McGill University for personally supporting me through scholarships. I am also thankful for funding from the Northern Scientific Training Program that supported my fieldwork. In addition, thank you to First Air, Air Labrador, and the Nunatsiavut Department of Health and Social Development for supporting the participation of Konek Productions in the fieldwork. Thank you to the Canadian Institutes of Health Research for their financial support for the IK-ADAPT project, to Health Canada for supporting the IMHACC project, and to the International Development Research Centre for supporting the Indigenous Health Adaptation to Climate Change project.

I am also very thankful to my colleagues in Burnside room 321 for the countless chats that helped me to mull things over and for inspiring me with their own work. I look forward to the future when our paths will cross again! I'd also like to acknowledge the incredible change-makers I have met through the Canadian Youth delegation, the Sierra Youth Coalition, and other initiatives, clubs, and groups whose passion, energy, and commitment to youth activism and advocacy around climate change inspires me every day.

And last, but most importantly, thank you to my family whose love and support are endless, who always know what to say to pick me up, who keep things in perspective, and who believe in me even when I doubt myself. Mom and Dad, your own life pursuits inspire me to challenge myself, dream up possibilities, and always ask 'why?' Julia, Megan and Marta, you are my fuel. Your phone calls, Skype chats, texting, Snapchats, and visits keep me grounded and sane. I can't imagine going through this process without you. Thank you.

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CHAPTER 1: INTRODUCTION

1.1 Background

Canadian Inuit have experienced and continue to face high rates of social, cultural, political, and economic change stemming from a history of colonization (Lehti et al., 2009; Richmond, 2009; Richmond and Ross, 2009; Ford et al., 2010b). Currently, compared to the rest of the country, the Indigenous populations in the Canadian Arctic experience greater health and economic disparities, which are exacerbated by the geographic remoteness and high cost of living in the North (Richmond, 2009; Kral et al., 2011). Climatic and environmental changes are an additional challenge that interacts and contributes to these various stressors and increases pressures on Northern communities, placing great urgency on the need for adaptation (Ford and Smit, 2004; Laidler, 2006; Prowse and Furgal, 2009; Ford et al., 2010a,b; Harper et al., 2011, 2012; Cunsolo Willox et al., 2012, 2013). Increasing attention is being paid to the Polar regions, which are projected to experience the greatest warming globally, leading to severe impacts on the lifestyles, livelihoods, and general health of Indigenous populations who rely on the natural environment for sustenance, cultural activities, and well-being (IPCC, 2014; Ford et al., 2006, 2008, 2010b; Cunsolo Willox et al., 2012).

Recent research with Canadian Inuit populations has identified significant impacts of climate change on mental health and well-being connected to changes in the land (Cunsolo Willox et al., 2012; Ford et al., 2006, 2008, 2010b; Ford and Pearce, 2010). Research focused on mental health and climate change is, itself, quite new having only originated in the last eight years with research in Northern Australia focused on the mental health implications of long-term drought (Morrissey and Reser, 2007; Hunter, 2009; Berry et al., 2011; Hart et al., 2011). This work, along with emerging research in the Canadian North mentioned above, is beginning to identify direct and indirect linkages between climatic and environmental change and mental health and well-being (Berry et al., 2011; Hart et al., 2011; Cunsolo Willox et al., 2012, 2013). Climate change-related mental health impacts are expected to be experienced most severely by people with pre-existing mental illnesses or issues, marginalized populations, communities dependent on the local ecosystems, and areas most susceptible to climatic changes and variability (Berry, 2009; Swim et al., 2010, 2011; Doherty and Clayton, 2011). Communities in the

Canadian North fit many of these characteristics and, not surprisingly, research in this region shows that the rapid changes in snow, ice, seasonal temperatures, and wildlife and vegetation currently experienced by Inuit are related to reported mental health challenges (Cunsolo Willox et al., 2012, 2013). One of the foci for further research that this work calls for is exploring the linkages between mental health and well-being and adaptive capacity to manage change, especially for at-risk populations such as Indigenous youth (Cunsolo Willox et al., 2013, 2014).

Indigenous youth across the North have been identified as an at-risk population within the context of climate change (Ford et al., 2008, Petrasek MacDonald et al., 2013a), as well as within the context of broader socio-cultural change (Lehti et al., 2009). The legacies of trauma from the history of colonization and exploitation, the struggle of balancing Western culture with traditional Inuit culture, and the necessity to adapt to social and economic changes exacerbated by climate change are contributing factors challenging Circumpolar Indigenous youth mental health and well-being (Lehti et al., 2009). Vulnerability to social, cultural, and environmental change is heightened by inequalities in education, income, and employment. Furthermore, Northern Indigenous youth populations in Canada, as well as across the Arctic, experience some of the highest rates of suicide worldwide (Allen et al., 2006; Wexler, 2006; Lehti et al., 2009, Kral et al., 2009, 2011). Health disparities such as these challenge adaptive capacity.

With over half (54%) of the Canadian Inuit population under the age of 24 and one fifth (20.1%) of the population between the ages of 15 and 24 (StatsCan, 2011a), Canadian Inuit youth represent a substantial and important part of the population. To date, youth voices have been generally absent in Canadian Arctic climate change research. This absence has been identified as a major research gap and a limitation for climate policy (Ford and Pearce, 2010; Petrasek MacDonald et al., 2013a). In other fields of research related to environmental change, such as disaster management, risk perception and communication, environmental stewardship, and natural resource management, research has emphasized the importance of engaging and empowering youth to be active in dealing with disasters and environmental issues (Ronan et al., 2001; Bartlett, 2008; Mitchell et al., 2008; Peek, 2008; Tanner et al., 2009; Tanner, 2010).

Considering the at-risk nature of the large and ever-growing Northern Indigenous youth population, attention to the dynamics of youth mental health and well-being, specifically within climate change research and affiliated policy development, is crucial. Youth represent a necessary and important source of knowledge, experience, and skills and these young people will be the future leaders and innovators of climate change adaptation in their communities (Petrasek MacDonald et al., 2013a). Building resilience and nurturing well-being of the youth population is crucial in helping young people be effective leaders and navigate social, cultural, economic, or environmental challenges into the future (Ford et al., 2008; Petrasek MacDonald et al., 2013a).

The research presented in this thesis is based on an understanding of resilience that includes cultural, geographic, social, and historical considerations (Kirmayer et al., 2011, Allen et al., 2014). Resilience involves dynamic processes of adaptation, growth, and development that can lead to positive outcomes in responding to challenges and stresses, both past and present (Kirmayer et al., 2011, Allen et al., 2014). This understanding of resilience is based on the work of Laurence Kirmayer, James Allen, Michael Kral, Lisa Wexler, and other leading academics in the Indigenous mental health field who work on mental health promotion with Circumpolar Indigenous populations and who emphasize the role of culture and shared heritage, collective wellness, family and kinship relations, and local context when approaching resilience.

1.2 Research Question and Objectives

This research aims to examine strategies for fostering youth resilience and support youth protective factors to deal with change, specifically climate change. The main objectives of this work are to:

1. Characterize the protective factors and causal mechanisms that enhance Circumpolar Indigenous youth mental health and resilience;
2. Pilot the use of participatory video as a youth-led data-gathering method to examine the potential of participatory video as a strategy to foster known protective factors identified to underpin youth resilience and adaptive capacities to a variety of stresses, including impacts of climate change;

3. Document youth-identified protective factors that support mental health and well-being amidst change (i.e. social, cultural, economic, or environmental), and examine how climatic changes challenge these factors throughout the region of Nunatsiavut.

These objectives provide information about climate-sensitive mental health implications and resilience factors from a youth perspective and contribute to identifying applications for youth-focused adaptation strategies and informing future adaptation research and policy.

1.3 Partner Community and Larger Research Projects

The fieldwork component of this Masters research took place in Nunatsiavut, Labrador, Canada. Nunatsiavut is located on the north coast of Labrador and is the newest Inuit Settlement region in Canada, formed in 2005 (Natcher et al., 2012). Approximately 2,600 Inuit live in the region, living in five small and geographically remote communities (StatsCan, 2011b): Nain, Hopedale, Makkovik, Postville, and Rigolet. The participatory video workshop that was part of this thesis project was facilitated in Rigolet, the Southern-most of the five Nunatsiavut communities. More detail about place and people is provided in the individual manuscripts.

Community perspectives and local knowledge are essential to the research process for climate change work in the Canadian Arctic (Pearce et al., 2009; Ford et al. 2010c). As such, this research was guided by a community-based participatory research approach, engaging the community at all stages of the research process. This work builds and expands on community-identified needs and priorities stemming from five years of collaborative research relationships in Rigolet and the region of Nunatsiavut.

This Masters research was part of two multi-year, community-engaged participatory climate change projects looking at climate change and health adaptation from a variety of perspectives: the *Inuit Traditional Knowledge for Adapting to the Health Effects of Climate Change* (IK-ADAPT) and the *Inuit Mental Health Adaptation to Climate Change project* (IMHACC). The IK-ADAPT project investigates the connection between Inuit knowledge and adaptation to the health effects of climate change across Northern Canada. The IMHACC project examines the impacts of climate

change on the mental health and wellness of Inuit in Nunatsiavut and explores community-identified resources and supports to address these impacts. Both projects emphasize youth engagement, and the project teams follow community-led and community-based participatory processes and have well-established relationships and on-going collaboration with the community of Rigolet. Furthermore, as this was a participatory endeavor, the local Inuit Community Governments and the Nunatsiavut Department of Health and Social Development, who are also currently working with the IMHACC and/or IK-ADAPT projects, were active partners.

1.4 Outline of Thesis

As a manuscript-based thesis, this thesis consists of three manuscripts, one to address each objective, that together answer the question of how to foster youth resilience and support youth protective factors to deal with change, specifically climate change. The first paper, Chapter 2, is a systematic literature review examining the protective factors and causal mechanisms that promote and enhance Indigenous youth mental health in the Circumpolar North, and has been published in the International Journal of Circumpolar Health (Petrasek MacDonald et al., 2013b). Chapter 3 narrows in on a geographic region focusing on one community in Nunatsiavut—Rigolet—and explores youth-led participatory video as a strategy to foster known protective factors that enhance resilience of Circumpolar Indigenous youth and as such looks at participatory video as an approach to enhancing youth adaptive capacities to challenges and stresses such as the impacts of climate change; this chapter will be submitted to *Arctic*. The third and final manuscript, Chapter 4, outlines youth-identified protective factors that enhance mental health and well-being in light of social, economic, cultural, and environmental changes across the region of Nunatsiavut, Labrador, Canada. This chapter will be submitted to *Social Science and Medicine*, and brings in a specific focus on climate change by examining how climatic and environmental change challenges youth-identified protective factors according to youth participants. As each manuscript stands on its own, some overlap and repetition will exists between manuscripts.

CHAPTER 2:
A REVIEW OF PROTECTIVE FACTORS AND CAUSAL MECHANISMS THAT ENHANCE THE MENTAL HEALTH OF INDIGENOUS CIRCUMPOLAR YOUTH

2.1 Introduction

Indigenous youth in communities across the Circumpolar North experience significant health disparities and poorer mental health, however measured, than non-Indigenous youth (Ribova, 2000; Wexler, 2006; Silviken and Kvernmo, 2008; Lehti et al., 2009; Ford et al., 2012; Allen et al., 2014; Wexler, 2014; Wexler et al., 2013, 2014). Inuit and Inupiat youth suicide, for instance, is at 'epidemic' levels, with communities experiencing some of the highest suicide rates globally (Kirmayer et al., 1996; Wexler, 2006; Kral et al., 2009, 2011; Decou et al., 2013; Spein et al., 2013). Between 1999 and 2003, Inuit communities in Nunavik, Northern Quebec experienced suicide rates 15 times higher than that of the Canadian average (181/100 000), while the region of Nunatsiavut had the highest suicide rate in Canada (239/100 000) (StatsCan, 2012). Suicide rates for 15-24 year old Alaska Native males are 14 times the national rate (Allen et al., 2006) and, in Northwest Alaska, suicide is the leading cause of death for 15-18 year old Inupiat youth (Wexler, 2006; Wexler and Goodwin, 2006). These Circumpolar regions have demographically young populations, which can lead to a higher burden on mental health (Lehti et al., 2009; Wexler et al., 2013, 2014). In the Canadian North, for example, over half of the Inuit population is under the age of 24 (Kral et al., 2011; ITK, 2008), a reality reflected in Circumpolar communities across Canada, Greenland, Norway, and Alaska (Allen et al., 2006; Silviken and Kvernmo, 2008; Kral et al., 2011; Ford et al., 2012).

Mental health issues must, however, be considered within a larger socio-cultural history (Kral et al., 2009; Wexler, 2009; Wexler et al., 2009, 2014). Arctic communities have experienced significant social and economic transitions and transformations over the last 50 years, stemming from rapid changes in lifestyles and livelihoods across the Arctic—events which today contextualize youth mental health (Nuttall, 2000; Ribova, 2000; Kral et al., 2009; Allen et al., 2014; Spein et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). Circumpolar communities also experience inequalities in housing, health care, education, and employment when compared to non-Indigenous populations

(Kirmayer et al., 2000; Ribova, 2000; O'Donnell and Tait, 2004; Young and Bjerregaard, 2008; Ford et al., 2010a; Knotsch and Kinnon, 2011; Kral et al., 2011; Parlee and Furgal, 2012; Allen et al., 2014; Wexler et al., 2013, 2014), which further impacts youth mental health. Many Arctic Indigenous youth are growing up in a context very different from their parents and grandparents and face unique challenges and have to navigate multiple and often competing worlds and value systems (Wexler et al., 2013). Environmental change is also having serious and often negative impacts in Arctic regions, with implications for lifestyle, livelihoods, culture, health, and well-being widely documented (Nuttall, 2000; Krupnik and Jolly, 2002; Hinzman et al., 2005; Ford et al., 2006; Bjerregaard et al., 2008; Ford et al., 2010a; Pearce et al., 2010; Kirmayer et al., 2011; Pearce et al., 2011; Ford, 2012; Parlee and Furgal, 2012; Petrasek MacDonald et al., 2013). Most research suggests a connection between deteriorating environmental conditions that disrupts livelihoods and ways of life, along with poor basic human infrastructure, as being major contributing factors to the poor mental health record (Kirmayer et al., 2000; Parlee and Furgal, 2002; O'Donnell and Tait, 2004; Lehti et al., 2009; Cunsolo Willox et al., 2013).

Most mental health research on Indigenous youth has focused on the prevalence of mental health challenges and outcomes, such as suicide rates, and their individual risk factors such as substance abuse, previous mental health disorders, and family conflict (Olsson et al., 2003; Lehti et al., 2009; Wexler, 2009; Zolkoski and Bullock, 2012). Over a decade ago, however, Kirmayer et al. (Kirmayer et al., 2000) recognized the need to address the lack of research on factors promoting well-being and resilience among Indigenous youth. Since then, a small but growing body of work has begun researching and identifying possible protective factors for Indigenous mental health. This research calls for further work to articulate the nuanced *mechanisms* and *pathways* through which protective factors may contribute to community and individual well-being (Wexler, 2009; Wexler et al., 2009; Wexler and Burke, 2011; Allen et al., 2014; Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014), and do so from the perspective of local perceptions of and approaches to mental health and well-being (Mohatt et al., 2004; c.f. Kral et al., 2009; Kral, 2012).

Given that mental health resilience will differ within and among communities, it is crucial to take into account the diverse cultural, geographic, political, economic, and social settings, contexts, and histories when considering resilience in an Indigenous context, particularly when considering the diverse Circumpolar Indigenous populations (Nuttall, 2000; Ribova, 2000; Kral et al., 2009; Bals et al., 2011a; Kirmayer et al., 2011; Allen et al., 2014; Spein et al., 2013; Wexler et al., 2014). For example, from an Inuit holistic perspective, health and well-being are just as much dependent on the physical, spiritual, and social environment as they are on individual circumstances (O'Donnell and Tait, 2004; Kral et al., 2009; Kirmayer et al., 2011). Although past meanings of resilience for Arctic Indigenous populations related to their resourcefulness and adaptability to the unpredictable Arctic environment, in the present day, the meaning of resilience has shifted to also encompass the ability to adapt to challenging and rapidly-changing physical, cultural, political and socio-economic environments, and includes an understanding of the importance of community cohesion, overall health, spiritual traditions, and cultural connectivity (Nuttall, 2000; Ribova, 2000; O'Donnell and Tait, 2004; Kral et al., 2009; Kirmayer et al., 2011; Parlee and Furgal, 2012; Wexler et al., 2014).

Despite the importance of and need for research on this topic, there has been, to our knowledge, no synthesizing review that identifies the protective factors specifically for Circumpolar Indigenous youth mental health or examines casual mechanisms and pathways. This is an important research gap that needs to be addressed if we are to enhance and develop appropriate and effective health programming and resources to deal with the mental health disparities in Circumpolar countries (Wexler, 2009; Bals et al., 2011a; Wexler and Burke, 2011; Allen et al., 2014; Decou et al., 2013; Wexler et al., 2014). In this context, this literature review asks the question, "*What are the protective factors that support and promote Circumpolar Indigenous youth mental health resilience and why do these factors enhance resilience?"*

2.2 Methods

This systematic literature review uses the PRISMA guidelines (Moher et al., 2009) and draws on components of a realist review (Pawson et al., 2005). Systematic

reviews provide a replicable, rigorous, and organized approach to evaluating and synthesizing research findings across studies, disciplines, and approaches (Sargeant et al., 2006; Liberati et al., 2009). Realist reviews delve further into the questions of why these protective factors work, how they work, for whom, and in what context (Pawson et al., 2005). Realist reviews extend systematic reviews by moving beyond reporting outcomes to explaining the underlying causal mechanisms for these outcomes (Pawson et al., 2005). The Circumpolar Indigenous youth population considered in this review lives in particular geographic contexts and, as such, a realist approach is especially appropriate as it places emphasis and importance on understanding context to explain how and why certain outcomes arise from specific places or within certain groups or environments (Pawson et al., 2005). This style of literature review (i.e. systematic realist review) is being consistently used within social sciences in areas such as climate change adaptation, food security, health geography, and international development (Thompson et al., 2010; Ford et al., 2011; deBono et al., 2012; Snilstveit et al., 2012; Sherman and Ford, 2013) and has been successfully employed in Circumpolar mental health contexts before (Lehti et al., 2009).

2.2.1 Search Strategy

Three electronic databases—PubMed, Web of Knowledge, and Medline—were used to search for English-language, peer-reviewed published literature to identify the protective factors that may promote resilience in Circumpolar Indigenous youth populations to mental health problems. Several test searches were conducted in the selected databases to experiment with various synonyms and refine the subject headings and search string to get the most relevant and comprehensive search results. Consultation with an academic research librarian also informed the final search terms. Once finalized, the initial literature search was conducted through a two-step process. First, Medical Subject Headings (MeSH) were used for the search in MedLine to get an initial sense of the literature in the field (Fig. 1). Second, a search string informed by the initial MedLine search was applied to the PubMed and Web of Knowledge databases (Fig. 2).

adaptation, psychological	indians, north american	Russia
Alaska	indigenous	sami
arctic regions	mental health	suicide
depression	native	suicide, assisted
emotions	Northwest Territories	suicide, attempted
Finland	Norway	Sweden
Greenland	Nunavut	yukon territory
happiness	resilience, psychological	yup'ik
Iceland	inuits	

Figure 1: Medical Subject Headings (MeSH) used for database search in MedLine

(youth* OR adolesc* OR teen* OR "young adult*" OR student* OR "school student*" OR "high school student*" OR "college student*" OR "university student*")

AND

(resilienc* OR "resilient factor*" OR "protective factor*" OR "resilien* determinant*" OR "adaptive capacit*" OR "adaptive abillit*" OR coping OR cope)

AND

("mental health" OR well-being OR suicide OR depression OR happiness OR wellness OR emotion*)

AND

(circumpolar OR polar OR "arctic Canada" OR Nunavut OR Nunavik OR Nunatsiavut OR Inuvialuit OR Yukon OR "Northwest Territories" OR Norway OR Greenland OR Alaska OR Russia OR Sweden OR Finland OR Iceland OR Arctic OR North*)

AND

(Native* OR indigenous OR aboriginal OR Inuit OR Sami OR Saami OR Eskimo* OR Inuq OR Yup'ik* OR Inuviat* OR Yupik* OR Yakut* OR Aleut* OR Inupia*)

Figure 2: Search equation used in PubMed and Web of Knowledge based on MeSH, test searches, and consultation with Research Librarian

All returned articles were uploaded to EndNote X5®, a reference management software program, and duplicates were removed. A two-stage screening process was then used to remove irrelevant articles, beginning by screening of titles and abstracts with reference to inclusion and exclusion criteria (Table 1), followed by in-depth review where necessary. If articles did not meet one or more of the inclusion criteria then they were not included for review (for example, if an article discussed Circumpolar Indigenous youth mental health with respect to risk factors and had no discussion on

protective factors then it was not included).[1] Many of the excluded references, however, were helpful to providing context and framing in the Introduction and Discussion. Before conducting the literature search, adding a criterion to the inclusion/exclusion criteria that would exclude empirical articles and provide more congruity between articles was considered. However, adding this criterion significantly limited the number of relevant articles and would have decreased the number of articles for review. In order to capture a reasonable and representative body of literature, both empirical and theoretical articles were included. Forward and backward citation tracking was then conducted to ensure all relevant articles were captured in the search. Finally, a snowballing technique was also applied, which involved emailing three key authors working in the field of Circumpolar youth resilience and mental health to inquire about their research and other relevant publications that may not have been found in the electronic search and to request clarification or full-text files of their publications if not available online. Snowballing and citation tracking confirmed that the database searches were thorough.

[1] Ideally, a systematic literature review involves two or more people independently conducting the literature search and assessing the search results according to the pre-established criteria. Results are then compared to arrive at a final list of articles to review. One limitation of this study is that the search and assessment of articles was conducted by one person.

Table 1: Table of inclusion and exclusion criteria used in determining which articles were applicable to review.

Inclusion Criteria	Exclusion Criteria
English language source	Non-English language source
Peer-reviewed journal articles (empirical or theoretical)	Books, reviews, editorials, conference proceedings, commentaries
Anything published to up until September 25th, 2013	N/A
Focus on (or distinction of) and Indigenous population (i.e. Inuit, Yup'ik, Inupiat, Sami, etc.)	Population included in the study is not Indigenous or there is no distinction between Indigenous and non-Indigenous populations
Include youth as only population of study or as a distinct group in study participants with specific discussion/coverage on youth	Youth are not included in study or are only briefly mentioned
Include at least one paragraph on resilience/protective factors that enhance mental health or make explicit reference to certain protective factors	Only focus on risk factors and no mention of resilience/protective factors
Circumpolar regions/countries only (Canada, Greenland, Norway, Russia, Finland, Iceland, Sweden, Alaska (USA))	Non-circumpolar countries
N/A	Duplicate of previously found article

2.2.2 Data extraction

A codebook was created to extract specific information from each article for synthesis. Information collected included general aspects of the study (e.g. first author, year, objective, and study design) as well as specific questions being asked of the literature (e.g. What are the protective factors identified? How are causal mechanisms or explanations about the protective factors described? What policy recommendations are made by the authors?) A section on methodology/study design, measure used, and other method notes was also included in the codebook to track the type of article (i.e. empirical or theoretical) and document the source of the information.[2] (Table 2).

[2] For those articles that were empirical in nature, we reported only the overarching findings (i.e. what protective factors and/or causal mechanisms were identified) rather than specific numbers or measures as the articles that gave empirical results used varying measures that were difficult to compare and synthesize.

Table 2: Categories of information extracted from articles including general aspects and specific questions.

Data extraction categories	Questions asked
Article information	First author, Year, Journal
Geographic	Study Site – Community, state/territory/province, Country
Methodology/Methods	Objectives Methodology/study design Measures used Other methods notes Timeframe of study
Study population	Indigenous group (Yu'pik, Sami, Inuit) Size of study population Age Gender considered
Protective Factors and causal mechanisms	What are the protective factors identified? Why? Pathways through which these factors protect/increase resiliency Mental health behaviours discussed (outcomes to avoid) Key results
Wording	Explicitly stated that these are protective factors? (wording) Is the word 'resilience' used in the article?
Recommendations and take home messages	Recommendations Intervention/prevention thoughts? Strategies, interventions, or best practices within communities that promote strong mental health in the younger generation? Are the recommendations based on protective factors? Lessons that can be applied to future indigenous youth-related mental health research and work?
Other	Other Notes Introductory material useful to setting the stage Weaknesses – what was not included?

Given the small sample size, the use of statistics to examine publication trends, resilience factors, and causal mechanisms was precluded. Instead, the analysis focuses in-depth on the factors enhancing the mental well-being of Indigenous youth. This is consistent with other realist and systematic review papers also based on a small sample of publications (e.g. Lehti et al., 2009; Thompson et al., 2010).

2.3 Results

2.3.1 Limited research has been conducted but is expanding

Of the 160 records collected from the database searches, 30 duplicates were removed leaving 130 articles for initial screening of title and abstract. From this screening, 108 articles were excluded (Table 3). Twenty-two had a full-text screening and twelve were excluded. Of these twelve, four did not focus on protective factors, three did not separate Alaska Natives from American Indian populations, one was not empirical, one did not make a clear distinction between the adult sample and youth sample, two focused on methodologies utilized to assess outcomes of prevention programs, and one was not focused on an Arctic Indigenous population. In addition to the ten remaining articles, five were added after citation mapping, which left a total of 15 articles to be reviewed (Table 4, Fig. 3). All reviewed articles cover only four of the Circumpolar countries (Canada, Norway, Greenland, and Alaska, USA) and only four Indigenous groups (Inuit (Greenlandic and Canadian), Sami, and Alaskan Natives) (Table 4).

Of the 15 included articles, several first authors are also co-authors for one or more of the other articles reviewed (e.g. L. Kirmayer, J. Allan, G. Mohatt, L. Wexler), while most papers cite at least one of the other eight first authors, with several instances where studies use the same dataset. For instance, all three of Bals' publications (Bals et al., 2010, 2011a,b) use the same data set, while Mohatt et al. (2004) and Allen et al. (2006) are reporting different aspects of the same project. The more recent research is intentionally building on what has already been done (for example, Decou et al.'s (2013) study utilizes the findings of Allen et al. (2006) to inform their research focus and interview questions). This illustrates the small number of researchers approaching Indigenous youth mental health from a protective factor and resilience lens.

Research in this field is also recent. Over half of the articles were published in the last four years with three published in 2013 and two published in 2014. Kirmayer et al. (1996) was the first to include protective factors in Indigenous youth mental health research in the Circumpolar North in the late 1990's, although this work still primarily focused on risk factors for suicide among Inuit youth in Canada. Mohatt et al.'s (2004) article focusing specifically on protective factors for youth resilience was published almost a decade later. Going further, the most recent work in this field recognizes and is pursuing the crucial identification and understanding of causal pathways and mechanisms and has begun to investigate locally-appropriate, youth-driven resilience strategies and initiatives in Circumpolar Indigenous communities (Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). As the articles in this review demonstrate, the transition to emphasizing resilience and supporting protective factors has been called for and is now occurring in emerging literature (Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014).

Table 3: Breakdown of articles excluded in title and abstract screening.

Inclusion criteria not met	Number of articles
Not youth	6
Not Indigenous	3
Not Arctic	35
Not youth or Indigenous	1
Not Arctic or Indigenous	6
Not youth or Arctic	9
Not youth, Indigenous, or Arctic	5
Not mental health	4
Not protective factors	4
Not Indigenous or mental health	1
Not at all related	14
Not Arctic, youth, or mental health	8
Not Indigenous, youth, or mental health	3
Not Arctic or mental health	7
Not youth or mental health	1
Not Arctic, Indigenous, or mental health	1

Table 4: List of final 15 articles included in literature review with the Indigenous group studied and the location of research.

Articles Reviewed	Indigenous Group	Location
Allen, J., G. V. Mohatt, et al. (2006). "The Tools to Understand." *Journal of Prevention & Intervention in the Community* **32**(1-2): 41-59.	Alaska Natives	Alaska (USA)
Bals, M., A. L. Turi, et al. (2010). "Internalization symptoms, perceived discrimination, and ethnic identity in indigenous Sami and non-Sami youth in Arctic Norway." *Ethnicity & Health* **15**(2): 165-179. **Bals**, M., A. L. Turi, et al. (2011). "The relationship between internalizing and externalizing symptoms and cultural resilience factors in Indigenous Sami youth from Arctic Norway." *Int J Circumpolar Health* **70**(1): 37-45. **Bals**, M., A. L. Turi, et al. (2011). "Self-reported internalization symptoms and family factors in indigenous Sami and non-Sami adolescents in North Norway." *Journal of Adolescence* **34**(4): 759-766.	Sami	Northern Norway (Finnmark, Troms, Nordland)
Decou, C.R., M.C. Skewes, et al. (2013). "Traditional living and cultural ways as protective factors against suicide: perceptions of Alaska Native university students." *Int J Circumpolar Health* **72**:20968.	Alaska Natives	Alaska (USA)
Ford, T., S. Rasmus, et al. (2012). "Being useful: achieving indigenous youth involvement in a community-based participatory research project in Alaska." *Int J Circumpolar Health* **71**(0): 1-7.	Alaska Natives	Southwest Alaska (USA)
Kirmayer, L. J., M. Malus, et al. (1996). "Suicide attempts among Inuit youth: A community survey of prevalence and risk factors." *Acta Psychiatrica Scandinavica* **94**(1): 8-17. **Kirmayer**, L. J., L. J. Boothroyd, et al. (1998). "Attempted suicide among Inuit youth: Psychosocial correlates and implications for prevention." *Canadian Journal of Psychiatry-Revue Canadienne De Psychiatrie* **43**(8): 816-822.	Inuit	Nunavik, Northern Quebec (Canada)

Table 4 (Cont'd): List of final 15 articles included in literature review with the Indigenous group studied and the location of research.

Articles Reviewed	Indigenous Group	Location
Kral, M. J., L. Idlout, et al. (2011). "Unikkaartuit: meanings of well-being, unhappiness, health, and community change among Inuit in Nunavut, Canada." *Am J Community Psychol* **48**(3-4): 426-438.	Inuit	Igloolik and Qikiqtarjuaq, Nunavut (Canada)
Mohatt, G., S. M. Rasmus, et al. (2004). ""Tied together like a woven hat:" Protective pathways to Alaska native sobriety." *Harm Reduction Journal* **1**(1): 10.	Alaska Natives	Alaska (USA)
Spein, A.R., C.P. Pedersen, et al. (2013). "Self-rated health among Greenlandic Inuit and Norwegian Sami adolescents: associated risk and protective correlates." *Int J Circumpolar Health* **72**:19793.	Inuit and Sami	Greenland and North-Norway
Wexler, L. and B. Goodwin (2006). "Youth and adult community member beliefs about Inupiat youth suicide and its prevention." *Intl J Circumpolar Health* **65**(5): 448-458. **Wexler**, L., K. Jernigan, et al. (2014). "Lived Challenges and Getting Through Them: Alaska Native Youth Narratives as a Way to Understand Resilience." *Health Promotion Practice* **15**(1):10-17 **Wexler**, L. (2014). "Looking across three generations of Alaska Natives to explore how culture fosters indigenous resilience." *Transcultural Psychiatry* **51**(1)73-92. **Wexler**, L., L. Joule, et al. (2013). ""Being responsible, respectful, trying to keep the tradition alive:" Cultural resilience and growing up in an Alaska Native community." *Transcultural Psychiatry* DOI: 10.1177/1363461513495085.	Inupiat	Alaska (USA)

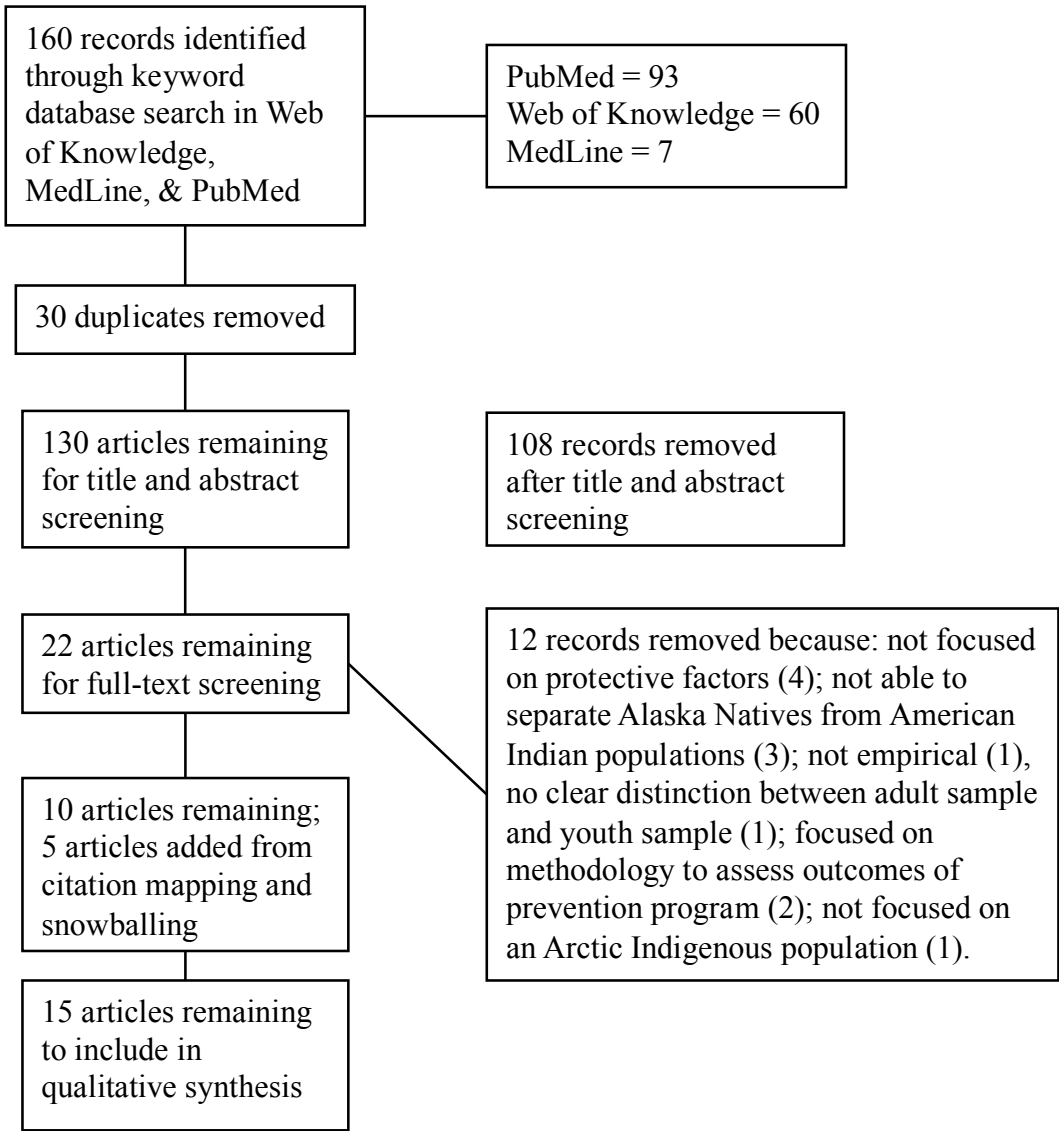

Figure 3: Search strategy and results

2.3.2 Protective factors are key to youth resilience

There are over 40 protective factors that are catalogued as community level (Table 5a), family level (Table 5b), and individual level (Table 5c). Most protective factors are reported by multiple studies, including community factors, such as positive role models within the community, and traditional knowledge and practice; family factors such as kinship; and individual factors such as belief in self and desire to be useful/contribute (Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Bals et al., 2010, 2011a,b; Kral et al., 2011; Ford et al., 2012; Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). The categorization in the three levels and some of the reported protective factors are similar to results from resilience research with youth (both Indigenous and non-Indigenous) in other regions, such as the individual factors of belief in self, academic achievement, and feeling useful; family factors in terms of the quality of the parent-child relationship; and community factors including supportive environment, extracurricular opportunities and participation, and role models, (Kirmayer et al., 1996; Olsson et al., 2003; Mohatt et al., 2004; Ford et al., 2012; Zolkoski et al., 2012; Decou et al., 2013; Spein et al., 2013; Wexler et al., 2013, 2014). Factors that are specific to the Indigenous Circumpolar context include continuous communication and interaction, cultural revitalization, ethnic socialization at home, kinship structure, traditional knowledge, ethnic pride, and mindfulness and awareness of the consequences of one's actions.

Table 5a: Community-level protective factors identified in literature review

Protective Factors	Authors that identified the protective factor
Positive role models	Allen et al., 2006; Mohatt et al., 2004; Wexler and Goodwin, 2006; Wexler et al., 2013
Sense of collective responsibility and community connectedness	Allen et al., 2006; Ford et al., 2012; Mohatt et al., 2004 Wexler, 2014; Wexler et al., 2014
Sense of belonging in community	Wexler, 2014
Meaningful opportunities to be involved within community or school community	Allen et al., 2006; Ford et al., 2012; Mohatt et al., 2004; Decou et al., 2013
Community-wide limits/standards/expectations	Allen et al., 2006; Mohatt et al., 2004
Safe places	Allen et al., 2006; Mohatt et al., 2004
Supportive, caring, encouraging, cohesive communities that show concern and reach out to youth	Mohatt et al., 2004; Wexler and Goodwin, 2006; Decou et al., 2013; Wexler et al., 2014
Strong relationships with community members (peers or other adults)	Kirmayer et al., 1998; Wexler and Goodwin, 2006; Decou et al., 2013; Wexler et al., 2013, 2014
Mentorship from older generations	Wexler et al., 2013, 2014
Continuous communication, talking, and interaction	Kral et al., 2011; Wexler and Goodwin, 2006
Regular church attendance (women)	Kirmayer et al., 1996, 1998
Community control	Kral et al., 2011
Cultural revitalization	Bals et al., 2010
Community recognition, respect, and appreciation	Wexler et al., 2014

Table 5b: Family-level protective factors identified in literature review

Protective Factors	Authors that identified the protective factor
Close relationship with parents	Allen et al., 2006; Mohatt et al., 2004; Spein et al., 2013
Affection and praise	Allen et al., 2006; Mohatt et al., 2004; Wexler et al., 2014
Models of sobriety and safe/protective family environment	Allen et al., 2006; Mohatt et al., 2004
Transmission of expectations and values	Allen et al., 2006; Mohatt et al., 2004
Family history of having received treatment for psychiatric problem	Kirmayer et al., 1996
Parental approval of friends	Bals et al., 2011b
Sense of being treated as special/being valued	Allen et al., 2006; Mohatt et al., 2004
Kinship structure (i.e. family connectedness and importance of extended family and adopted kin)	Bals et al., 2010, 2011b; Kral et al., 2011; Mohatt et al., 2004; Wexler et al., 2013, 2014
Native language learned at home and competence in native language	Bals et al., 2010, 2011b
Ethnic socialization at home	Bals et al., 2010, 2011b

Table 5c: Individual-level protective factors identified in literature review

Protective Factors	Authors that identified the protective factor
Belief in self	Allen et al., 2006; Bals et al., 2010; Mohatt et al., 2004
Sense of purpose	Wexler, 2014
Physically being in home community	Wexler, 2014
Wanting to contribute, be useful to others, take care of others, and give back to the community (i.e. to be a role model)	Allen et al., 2006; Ford et al., 2012; Mohatt et al., 2004; Wexler et al., 2013, 2014
Mindfulness and awareness of the consequences of one's individual actions upon the community	Allen et al., 2006; Mohatt et al., 2004
Reflection	Mohatt et al., 2004
Sense of responsibility to oneself, family, and/or community	Allen et al., 2006; Mohatt et al., 2004; Wexler et al., 2013, 2014
Learning values of harmony & co-operation as well as autonomy & hardiness	Bals et al., 2011a
High level of academic achievement	Kirmayer et al., 1996; Spein et al., 2013
Ethnic pride	Bals et al., 2011a; Ford et al., 2012; Wexler et al., 2014
Cultural/ethnic identity and/or affiliation	Wexler et al., 2013; Wexler, 2014
Traditional knowledge, cultural values, and practice (e.g. eating country foods, being out on the land, doing subsistence activities, attending tribal events, listening to traditional stories)	Bals et al., 2010, 2011a; Kirmayer et al., 1998; Kral et al., 2011; Decou et al., 2013; Wexler et al., 2013, 2014; Wexler, 2014
Systems of reciprocity and reciprocal bonds	Wexler et al., 2013; Wexler et al., 2014
Physical activity and active lifestyle	Spein et al., 2013; Decou et al., 2013
Staying busy	Wexler et al., 2014
Self-reliance (e.g. seeking support from a friend, keeping a journal, creatively handling problems)	Wexler et al., 2013, 2014
Being committed to community and culture	Wexler, 2014

Adults and youth differ in their perspectives on youth suicide prevention (Wexler and Goodwin, 2006). Adults feel that the most effective prevention is to offer activities and education, and create a sense of culture; youth highlight the need for adults to simply talk to them about their everyday lives and their futures, and offer guidance, support, and companionship (Wexler and Goodwin, 2006). The benefit of voluntary, informal interactions between youth and adults was also echoed by other authors (Kral et al., 2011).

Many protective factors overlap the three categories of individual, family, and community levels and many are directly connected to other factors (Mohatt et al., 2004; Bals et al., 2011b; Kral et al., 2011; Decou et al., 2013; Wexler et al., 2013, 2014). For example, the Inuit practice of hunting is a community activity, but directly links to sharing and eating country food, which are family and individual factors respectively (Kral et al., 2011). Other individual protective factors that are fostered through hunting and spending time out on the land include belief in self, self-reliance, mindfulness and awareness of the consequences of one's actions, self-confidence, and sense of purpose (Mohatt et al., 2004; Bals et al., 2011b; Kral et al., 2011; Wexler et al., 2013, 2014). Participating in subsistence activities also provides opportunities to be involved in the community, receive mentorship from older generations, and build relationships that contribute to community connectedness—all examples of the ways in which community factors can foster other community factors (Mohatt et al., 2004; Allen et al., 2006; Ford et al., 2012; Decou et al., 2013; Wexler et al., 2013, 2014). Another example is kinship, which is intertwined with cultural identity and may create a sense of security and strong cohesive families and communities; this, in turn, may provide a strong social support network and individual sense of belonging (Mohatt et al., 2004; Bals et al., 2010, 2011b; Wexler, 2014; Wexler et al., 2013, 2014). In this sense, protective factors work together in complex relationships to foster or enhance other protective factors to create an environment that supports healthy youth development, promotes feelings of competence, and fosters a positive attitude towards problem solving and pursuing meaningful and realistic strategies to enhance well-being (Wexler, 2014; Wexler et al., 2013, 2014).

2.3.3 Identifying causal pathways and protective mechanisms is essential

Several authors identified the lack of nuanced insight on the causal pathways or mechanisms through which protective factors enhance mental health (Mohatt et al., 2004; Allen et al., 2006; Bals et al., 2011a; Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). These authors point to three main reasons that protective factors exert a positive influence on mental health: they contribute to developing a supportive social environment; they enhance self-esteem and self-confidence and foster self-reliance; and they enable individuals to participate in their land-based culture (Table 6a,b,c) (Mohatt et al., 2004; Allen et al., 2006; Bals et al., 2011a; Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014).

First, the importance of youth having opportunities to participate in a range of social activities within supportive environments is recognized as key to mental health resilience. For example, Kirmayer et al. (1996) identify that regular church attendance acts as a protective factor, not because of adherence to the beliefs or practices of the religion, but rather because attending weekly services is an opportunity to strengthen social ties and engage with the members of the church community. He generalizes this explanation to include other community activities or involvement (Kirmayer et al., 1996). Other authors also emphasize the importance of community connectedness and a sense of belonging (Mohatt et al., 2004; Allen et al., 2006; Ford et al., 2012; Wexler et al., 2014). Broadly, family and community protective factors create, and subsequently impact, a larger cohesive social environment that supports youth, protects against trauma, and promotes reflection (Mohatt et al., 2004; Wexler, 2014). The strong relationships, support, and role models that create this social environment also interact with individual protective factors and are influential during times of personal reflection and when making important life decisions (Mohatt et al., 2004; Wexler et al., 2013). For example, youth who have more relationships with friends, extended family, and other community members have more access to resources providing more opportunities to navigate challenges (e.g. accessing a skidoo to get out on the land) and thus increases adaptability (Wexler et al., 2013, 2014). The relationships and resources available to youth structure and shape not only their approaches to problem solving, but also mediate other protective factors such as mentorship and opportunities to be involved (Decou et al., 2013).

Table 6a: Causal pathways identified for protective factors around one's social environment including family, peer, and community relationships.

Protective Factor	Causal Pathway	First Author(s)
Kinship	Extended family can provide support in the event that the immediate family cannot, sense of connection to others beyond the immediate family. Spending time with family and kin allows for opportunities to learn culture.	Bals (2010, 2011b) Kral (2011)
Close relationship with peers	Allows opportunity for youth to take on adult-like roles and offer support, be dependable, responsible, and responsive to others. Provides a chance to develop awareness of others and to also receive support from peers.	Wexler (2013) Wexler, Jernigan (2014)
Social Network (Includes relationships with family, peers, and community members)	Relationships and friendships can mediate access to cultural and material assets and thus increase one's capacity (e.g. kin, adopted kin, or friends can provide support resources like a skidoo available to get out on land). These relationships also provide a platform for youth to build/construct their identity and resilience.	Wexler (2013) Wexler, Jernigan (2014)
Mentorship from older generations	Source of support and guidance in how to handle problems. Provides examples to youth of how to get through difficulties while instilling belief in youth that they can also get through difficulties like their mentors and ancestors.	Wexler, Jernigan (2014)

Second, belief in oneself is identified as a protective factor and as a mechanism through which other protective factors function (Mohatt et al., 2004; Allen et al., 2006; Bals et al., 2011a). For example, high academic achievement and learning, and practicing culturally-significant activities are both documented to lead to greater self-confidence and self-esteem. Self-esteem, in turn, enhances mental health and well-being (Kirmayer et al., 1996; Bals et al., 2011a; Kral et al., 2011). Similarly, traditional knowledge and the ability to practice cultural activities have also been identified as mechanisms that promote a sense of self and self-esteem (Mohatt et al., 2004; Allen et al., 2006; Bals et al., 2010, 2011a; Kral et al., 2011; Decou et al., 2013; Wexler et al., 2013, 2014). For example, Bals et al. note that speaking the Sami language leads to feeling accepted by other Sami people and contributes to a sense of self as part of the Sami population (Bals et al., 2010). The ability to hunt and knowledge of the land were also described as factors that enhance Indigenous youth self-esteem and well-being (Allen et al., 2006; Kral et al., 2011).

Table 6b: Causal pathways identified for various protective factors. Note that not all protective factors were linked to a causal pathway.

Protective Factor	Causal Pathway	First Author
Regular church attendance	Participation in a community activity, engage in community and family networks, strengthens social ties, and builds strong social support. Also may offer consolation and hope in difficult times.	Kirmayer (1998)
High academic achievement	Source of self-esteem, builds problem-solving skills, presents hope for future.	Kirmayer (1996)
Awareness, mindfulness, and reciprocity of action	A mechanism in and of itself – Individuals who are socialized in this context are more sensitive to the effects of their behaviours on the whole, and draw strength from the whole.	Mohatt (2004)
Sense of being treated as special/important	Encourages youth to live up to high standards and be responsible for themselves and others.	Mohatt (2004)
Opportunities (in the community, at school, with research project)	Opportunities to be involved with research as co-researchers engages and empowers youth, giving them sense of control and ownership. Praise from adults and Elders gives youth pride. Research process offers space to talk to peers, reflect on mental health problems, and learn about oneself. Youth-researcher partnerships also increase egalitarian relations between young people and adults. Some activities, such as sport teams, provide incentive to do well in school (e.g. must do well in classes in order to participate in sport team).	Ford (2012) Wexler, Jernigan (2014)

Table 6b (Cont'd): Causal pathways identified for various protective factors. Note that not all protective factors were linked to a causal pathway.

Protective Factor	Causal Pathway	First Author
Self-reflection	Often leads to a conscious decision (i.e. to not drink or to drink responsibly)	Allen (2006)
Being responsible	Through activities like fixing something, doing homework, watching siblings, raising money for community, or doing chores, youth have a chance to contribute in a meaningful way and gain a sense of purpose and personal well-being. Also demonstrates autonomy and community connectedness.	Wexler, Jernigan (2014)
Being useful	Leads to feeling responsible and creates systems of reciprocity and availability to help one another which leads to young people having someone to talk to in difficult times such as times of loss. Reflects Indigenous values.	Wexler, Jernigan (2014)
Physical activity	Positively influences self image, family, and peer relationships, and general well-being among youth.	Spein (2013)
Sense of belonging in home community	Through a sense of belonging in one's home community youth feel more connected to their culture.	Wexler (2014)

Third, the importance of learning and participating in one's culture is acknowledged by all authors as a protective factor, but is perhaps best exemplified through the Sami in Norway. Like all Circumpolar Indigenous populations, the Sami have a history of colonization, which began in 1830, and included assimilation through residential schools, language prohibition, and loss of cultural practices (Nuttall, 2000; Bals et al., 2010, 2011a,b; Spein et al., 2013). The suicide rates for Sami youth were higher than the non-Sami average in the 1980's. Since then, however, the situation has improved substantially, and recent research indicates that currently, there are little to no disparities in health and well-being between Sami and non-Sami in Norway (Bals et al., 2010). This can, in part, be explained by the past 30 years of explicit and conscious political, cultural, and language revitalization efforts in Norway, which includes the development of many Sami institutions (i.e. schools, hospitals, a Parliament, and a University), a high degree of self-governance, good living conditions, increased socio-economic status, and positive socio-cultural development (Kvernmo and Heyerdahl, 2003; Silviken and Kvernmo, 2008; Nuttall, 2000; Bals et al., 2010; Spein et al., 2013). These efforts and developments have contributed to supporting the Sami lifestyle and culture allowing Sami youth more opportunities to learn and participate in their culture, as well as to assisting in improving health outcomes for this population (Spein et al., 2013).

Table 6c: Causal pathways identified for protective factors around culture including practicing traditional activities and having a positive ethnic identity.

Protective Factor	Causal Pathway	First Author
Learning and practicing culture (e.g. Traditional practices and subsistence activities)	Strengthens self-esteem, ethnic identity, and self-regulation skills. Sharing cultural knowledge enhances in-group cohesiveness and support through experience of shared meaning-making. Provides an opportunity to participate in the passing down of traditional knowledge and cultural values thus creating feeling of keeping culture alive. Enhances relationships between youth and the land and between youth and their families. Facilitates and creates context for important mentoring relationships and connection to older generations leading to youth feeling supported. Promotes healthy living, facilitates involvement and creates opportunities for sharing. Gain new skills (e.g. hunting, camping, riding) and knowledge. Develops sense of ethnic pride. Provides a meaningful way for youth to contribute and give back to the community, earn respect for skills, and feel appreciation from community (e.g. through sharing kill). Subsistence skills demonstrate strength and survival and are associated with ability to respond and to be resilient in face of hardship. Being out on the land requires youth to act selflessly, be responsible and less petty, show respect, rely on others, and distinguish between what is essential vs. trivial. Meaningful engagement in traditional activities also contributes to sense of purpose, feeling more self efficacious, and staying busy. Traditional activities associated with fulfillment, sense of calm, and sense of being special. Shows cultural continuity with one's heritage and connects youth to sense of how life used to be. Provides time with parents to learn skills and how to be in the world. Ability to practice culture is source of pride and well-being.	Bals (2010, 2011a) Decou (2013) Wexler (2013) Wexler, Jernigan (2014) Kral (2011)

Table 6c (Cont'd): Causal pathways identified for protective factors around culture including practicing traditional activities and having a positive ethnic identity.

Protective Factor	Causal Pathway	First Author
Positive cultural/ethnic identity and shared heritage	Leads to and increases self-esteem, feelings of self-worth, self-efficacy, connectedness, commitment, and purpose. Provides sense of belonging. Offers perspectives to draw from to overcome challenges and be well. Evokes sense of strength and capability. Creates larger shared context in which youth can situate themselves and their struggles in relation to others, to their history, and to a collective. Provides a means to structure one's understanding and ideas of their role in the world (e.g. as a youth, as Inuit/Sami/Inupiat)	Wexler (2013) Wexler (2014) Allen (2006)
Ethnic socialization	Influence on interpersonal and intra-psychic processes, increases self confidence, develops positive attitudes toward ethnic identity, teaches self-regulation and coping skills.	Bals (2010, 2011b)
Native language	Personal and relational significance – important part of ethnic identity that strengthens in-group cohesion, personal pride, and sense of history and culture.	Bals (2010, 2011b)

Considering the limited literature exploring causal pathways and mechanisms through which protective factors enhance resilience, many authors called for more research and exploration into how protective factors enhance resilience (Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). These authors point to the importance of this knowledge and understanding for developing relevant and effective intervention and prevention programming (Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). Some authors were quite specific about where future research needs to be directed; Decou et al. (2013), for example, call for further research to explore the pathways through which traditional activities and subsistence living can contribute to suicide prevention.

2.3.4 Community and culture are at the heart of youth mental health

The importance of community and culture in enhancing and expanding mental health are two key themes of all the articles in this review. All authors place emphasis on establishing and maintaining healthy relationships with family and community members, while simultaneously nurturing culturally-specific relationships with the land, animals, and plants, and developing culturally-based skills and activities (Kirmayer et al., 1996, 1998; Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Bals et al., 2011a; Kral et al., 2011; Ford et al., 2012; Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). More specifically, a sense of belonging to caring and supportive communities and families is crucial to making good decisions and to leading a healthy life (Mohatt et al., 2004; Bals et al., 2011a,b). Physically being in one's home community emerged as a protective factor from one of the most recent articles in which Indigenous youth who were studying outside of their home community participated (Wexler, 2014). These youth felt that they had to return home in order to feel better or heal from bad experiences while living away from their community (Wexler, 2014). Although Elders interviewed in the same study described their experiences away from home as similar to the experiences described by the youth, the difference between the two generations was that Elders used their cultural identity to situate themselves in a larger shared context and collective, which led to feelings of support and belongingness when away from home (Wexler, 2014).

All authors note the important role that culture plays in the lives of youth in Circumpolar Indigenous communities; however, some simply identify 'Indigenous culture' as a protective factor in and of itself (Bals et al., 2011b), while others note specific aspects of the culture that have protective features (Kral et al., 2011; Decou et al., 2013; Wexler et al., 2013, 2014). For example, in Norway, Bals et al. (2011b) suggest that the Sami culture provides socialization, pride, and support, and creates a resilience to protect Sami youth from depression and anxiety. In Canada, Kral et al. (2011) give several examples of culturally-specific protective factors: kinship structure, the tradition of visiting, going out on the land with family and friends, hunting and trapping, and sharing and eating country food. These individual protective factors are part of Inuit culture and associated with wellness, happiness, health, and healing (Kral et al., 2011), as well as contribute to a sense of belonging, a basic human need, and a cross-cultural resilience factor for coping in times of stress (Maslow, 1943; Antonovsky, 1987). Furthermore, in the articles by Mohatt et al. and Allen et al., the authors indicate that some of the more general protective factors, such as affection and praise, are important because they function within culturally-specific contexts (i.e. certain ways of showing praise and affection can be culturally-specific and lend a sense of connection and cohesion) (Mohatt et al., 2004; Allen et al., 2006).

A few of the studies reviewed indicated that the youth felt their culture is being lost (Decou et al., 2013; Wexler, 2014). Several reasons behind these feelings expressed by participants included loss of native language, changing relationships with the land, changing relationships between families, diminishing traditional activities in daily life and decreased knowledge transmission between generations, a decline of traditional values, and less cultural participation (Decou et al., 2013; Wexler, 2014). Youth reported that the feeling of losing culture may be attributed to apathy or time constraints, but authors speculated that it may go deeper and be connected to the way youth are defining and understanding culture (i.e. as a defined set of activities and knowledge rather than a larger shared context and collective) (Wexler, 2014), or may stem from comparisons with today's way of life to that of Elders and ancestors who lived off the land (Decou et al., 2013; Wexler, 2014).

2.4 Discussion: Circumpolar Youth Mental Health and Well-Being

This review intentionally focuses on literature examining mental health protective factors and resilience, rather than on articles that solely discuss risk factors. While research on the prevalence of mental health problems and risk factors is important, it is equally valuable to identify what makes individuals resilient to these mental health problems in order to inform prevention strategies and foster healthy youth populations (Wexler et al., 2009; Kirmayer et al., 2011; Wexler and Burke, 2011; Decou et al., 2013; Wexler et al., 2014). A focus on resilience also captures physical, mental, emotional, and spiritual characteristics of both individuals and communities, which is more reflective of Indigenous communities' approaches to and understandings of health in the Circumpolar North (Nuttall, 2000; O'Donnell and Tait, 2004; Silviken and Kvernmo, 2008; Kral et al., 2009; Kirmayer et al., 2011). Despite the serious mental health issues facing Indigenous youth throughout the Circumpolar North, there is only a small and relatively recent body of research focused on understanding how to foster resilience to address these mental health disparities (Wexler et al., 2014).

Mental health is not only an outcome in and of itself, it is also a determinant for overall community health and cohesion, and is directly and intimately tied to other aspects of community health and well-being (Friedli, 2009). For example, in some Arctic communities, researchers have pointed to the profound effect of high suicide rates on community life (Kirmayer et al., 1996; Wexler, 2006; Kral et al., 2009, 2011; Spein et al., 2013). Many, if not most, people in these communities have lost one or more family members or friends to suicide and, as such, it is difficult to remain positive and supportive of others during times of grief and mourning (Kirmayer et al., 1996; Wexler, 2006; Kral et al., 2009, 2011;). The high rate of suicide also creates an environment within these communities where few are untouched by suicide, and in some cases, where suicide becomes almost normalized (c.f. Wexler, 2006).

It is noteworthy to mention here that some Sami populations are an exception to the high suicide rate that is characteristic of many Circumpolar Indigenous populations (Silviken and Kvernmo, 2008; Lehti et al., 2009). The low levels of suicide in many of these communities have been attributed to good living conditions and socio-economic status, positive socio-cultural development, a high degree of self-governance and support

for the Sami culture, the preservation of traditional language, and overall cultural revitalization that has occurred in Norway over the past 30 years (Nuttall, 2000; Silviken and Kvernmo, 2008; Bals et al., 2010, 2011a; Spein et al., 2013). The mechanisms through which, and extent to which, cultural revitalization has been protective to Sami youth requires further research, and more importantly, an understanding of why the mental health disparities in the youth population have almost disappeared in Norway (Bals et al., 2010). Work with other Indigenous and cultural groups may provide some insights to answer these questions. Wexler (2009) and Wexler et al. (2009) draw from experience and research with Northern Canadian Aboriginal youth and Bosnian and Palestinian youth who experienced war, and proposes that cultural identity and cultural affiliation create protective factors such as self-efficacy and connectedness while at the same time create collective meaning and offer a larger context within which youth can situate their personal experiences thus enhancing resilience (Chandler and Lalonde, 1998; Barber, 2008a,b).

Individual experiences of mental health problems can also create undercurrents of grief, anger, frustration, and worry that can decrease the resilience of a population to cope with further mental health challenges (Wexler, 2006; Kral et al., 2009, 2011). If trouble with youth reflect problems within their families and communities (Kirmayer et al., 2000; Wexler, 2006; Kral and Idlout, 2012), then the individual youth-level mental health problems may be indicative or reflective of community-level problems. Conversely, community-level problems can also be indicative of individual mental health issues, and can highlight areas of mental health challenges. The overlap and connectivity across and between individual, family, and community levels aligns with the holistic perspective of well-being held by many Circumpolar Indigenous populations, in which important aspects of life and health are viewed as intertwined (Nuttall, 2000; O'Donnell and Tait, 2004; Silviken and Kvernmo, 2008; Kral et al., 2009, 2011). This overlap and connectivity also reinforces the important role of community in the design and implementation of preventative strategies and interventions to enhance youth mental health (Kirmayer et al., 1998; Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Kral et al., 2009, 2011; Kral and Idlout, 2012).

The research reviewed here consistently identifies the importance of culture and community in enhancing youth mental health. Other related research also reports this relationship (c.f. Wexler, 2009; Wexler et al., 2009; Wexler and Burke, 2011). For example, even when Indigenous youth are living away from their home communities, cultural identity and pride, a desire to contribute to their community, and community connectedness and relationships remain important to youth success in a different context (Wexler and Burke, 2011). Although the ways in which culture was defined varied between authors and within study groups, and despite the difficulty that youth often experienced when trying to explain how culture enhances resilience, youth from all the studies were certain about the importance of culture for their overall well-being. In addition to the ambiguity of these terms, within these two themes, there are also gaps in understanding. For example, while this review illustrates that a supportive, caring, and connected community can act as a protective factor and have a positive effect on individuals (Kirmayer et al., 1998; Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Kral et al., 2011), it is less clear how an individual's mental or emotional situation can impact the community or how communities can build strength in difficult conditions. The only mention of the impact of youth on communities comes from Decou et al. (2013) who state that positive and healthy youth will strengthen communities, but no further elaboration is provided. Considering the challenging social and economic context of many Northern communities (Nuttall, 2000; Ribova, 2000; Wexler, 2006; Silviken and Kvernmo, 2008; Kral et al., 2009; Spein et al., 2013), attention to the interaction between individual mental health and overall community wellness is also necessary.

Exploring the role communities can play in shaping youth resilience and adaptive capacities is a new trend that has emerged in the past year in published resilience research (Decou et al., 2013; Wexler, 2014; Wexler et al., 2013, 2014). Among this emerging work is research with youth living away from home (Decou et al., 2013; Wexler et al., 2013). Despite wanting to stay in one's home community, leaving is viewed as essential to accessing more opportunities and feeling successful and capable while staying at home can lead youth to feel stagnant or limited because certain opportunities are only available in larger urban centres and not in one's home community (Wexler, 2014; Wexler et al.,

2013). Researchers are beginning to address this by partnering with communities to create opportunities for youth to be co-researchers and increase opportunities for youth to gain experience and learn new skills in their home community (Mohatt et al., 2004; Allen et al., 2006; Kral et al., 2011; Ford et al., 2012; Allen et al., 2014; Wexler, 2014; Wexler et al., 2013).

Suicide was also highlighted by many of the authors as an important consideration when examining youth resilience, yet differing perspectives on youth suicide prevention emerged (Wexler and Goodwin, 2006). From the adult perspective, formalized, culturally-based programs and activities are most effective for youth suicide prevention, while youth perceive informal interaction, guidance, support, and companionship from adults and Elders as the best way to prevent youth suicide (Wexler and Goodwin, 2006). These findings provide valuable information on which to build prevention programs that incorporate youth ideas of appropriate resources and support, such as fewer structured programming pieces and more informal interaction between youth and adults. Some of Wexler's more recent work with Inupiat in Alaska indicates that older people struggle with knowing how to promote and support healthy and positive youth development in a modern context (Wexler, 2006; Wexler et al., 2013). Future research on youth mental health and resilience, then, should not rely solely on adult perspectives of youth needs to inform mental health services; rather, research should intentionally and meaningfully include youth perspectives, narratives, values, ways of knowing, ideas, and experience to provide accurate and holistic understandings of individual and community mental health issues and appropriate and relevant intervention and prevention programs (Allen et al., 2014; Wexler et al., 2014). Some of the more recent research in this area highlight youth narratives (Wexler et al., 2013), youth identified protective factors (Decou et al., 2013), and self-rated health and perceptions of well-being reported by young people (Spein et al., 2013) as providing useful examples of integrating youth perspectives into resilience research and work.

A concentration on the opportunities for youth to develop and foster healthy and positive relationships with adults in order to enhance their mental health resilience and adaptive capacities was another trend in the literature (Kirmayer et al., 1998; Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Kral et al., 2011). While having

healthy adult role models to provide care, guidance, and cultural insight and skills is no doubt of great importance, it is interesting that these articles do not discuss or examine peer-to-peer support or the effects of having strong peer support on youth mental health. Further research examining the impacts of peer support networks on youth mental health, and analyzing the effects of mental health challenges within peer groups on overall group mental health and well-being, would be of interest to the Circumpolar regions.

Many of the articles illustrate the importance of youth feeling connected to their culture through relationships with Elders and seniors, which also points to the protective nature of informal communication, mentorship, and of having positive role models (Wexler and Goodwin, 2006; Kral et al., 2011; Wexler et al., 2013, 2014). Kral et al. (2011) strongly emphasize that relational life is at the core of Indigenous identity (c.f. Briggs, 1998) and, as such, meaningful, daily interactions and communication between youth and adults is critical to well-being. The need for communication is only discussed in the literature as a face-to-face activity (Wexler and Goodwin, 2006; Kral et al., 2011), overlooking the emergence of new technology and social media and the role it can play in building social networks, sense of identity, or community cohesion. One example of the use of technology is from Allen et al. (2006) who created a successful multimedia program on sobriety with Alaska Native youth, which includes audio and visual narratives on CD-ROM with an accompanying booklet containing life history sketches of individual sobriety stories from research participants. However, with the rapid adoption of social media within many Circumpolar communities, the impact of this type of communication on mental health and well-being is important to explore. For example, could Facebook, Twitter, or Google+ act as social support networks that could enhance youth mental health and resilience? Social networks such as Facebook have gained tremendous use in the North in recent years as important communication tools for families and friends, as well as a way to connect people across Northern communities (Gearheard, 2005; Eisner et al., 2012; Hamel et al., 2012; Kral and Idlout, 2012). The use of these social networks is certainly very complex, with multiple potential positive and negative effects (Steinfield et al., 2008; Grieve et al., 2013; Johnston et al., 2013; Kross et al., 2013; Sweet, 2013). The possibility of these tools to connect to others, share support, and enhance one's mental health and well-being, however, is important to

investigate from social network and mental health perspectives. An understanding of the ways young people communicate as well as youth perspectives of mental health programs is also crucial to the development of appropriate and beneficial mental health support programs (Wexler and Goodwin, 2006; Kral et al., 2011).

The most recent work on Arctic Indigenous youth resilience has begun to tie research to practice and provide tangible and concrete recommendations for communities and health services working on promoting healthy youth development (Wexler et al., 2014). For example, many of the articles from 2013 and 2014 point to the importance of culturally-relevant opportunities that create and foster protective factors in youth such as participating in traditional activities, being responsible, developing self-reliance, and feeing useful to the community (Decou et al., 2013; Wexler et al., 2013, 2014). Research findings of protective factors such as the desire of youth to be useful and contribute to their communities as well as the importance of cultural practices and traditional activities should inform the priorities of resilience programming and intervention or prevention efforts (Decou et al., 2013; Wexler et al., 2013, 2014). Research with non-Arctic Indigenous populations has also reported relationships between cultural identity and traditional practices for enhancing mental health (Chandler and Lalonde, 1998). In some Arctic communities, the opportunities to participate in traditional activities, share knowledge, and learn new skills has decreased in the last 50 years (Wexler et al., 2013) and, as such, Wexler (2014) states that increasing opportunities for subsistence activities could be a point of focus for intervention strategies. This overlaps with other scholarship calling for such programs, albeit in different contexts (e.g. climate change adaptation) (Ford et al., 2010b, 2014).

Several authors identify the importance of incorporating cultural histories and stories of resilience from the various Indigenous cultures that may serve to connect youth to a shared context from which they can draw strength, resources, and skills, and in which they can situate themselves and their struggles in relation to others, to their history, and to a collective sense of culture and identity (Wexler, 2014; Wexler et al., 2013). A strong understanding of the past can help to link youth to both the suffering and the strength of their ancestors, thereby providing a collective experience with which youth can relate and identify (Wexler, 2014). Being culturally grounded can also promote flexible and

versatile resilience strategies; resilience strategies, therefore, should support youth in connecting to their cultural past and present and encourage youth to feel part of a larger collective with shared values and traditions to draw from in times of struggle and difficulties (Wexler, 2014; Wexler et al., 2013).

Despite the challenges and risk factors facing Arctic Indigenous youth, authors who have focused on resilience indicate that the majority of youth in their study communities are resilient (Decou et al., 2013; Wexler et al., 2013, 2014). Indeed, Arctic Indigenous populations have legacies of adaptability, creative responsiveness, and resilience to past struggles and to emerging challenges (Decou et al., 2013). As discussed in the Introduction, many Arctic communities have very high suicide rates, histories of colonization and oppression, and currently live with inequalities in housing, health care, education, and employment (Kirmayer et al., 2000; Ribova, 2000; O'Donnell and Tait, 2004; Young and Bjerregaard, 2008; Ford et al., 2010a; Knotsch and Kinnon, 2011; Kral et al., 2011; Parlee and Furgal, 2012; Allen et al., 2014; Wexler et al., 2013). Despite these challenges, historical trauma, and experiences of loss due to suicide of friends or family members, many youth have shown ingenuity, innovation, and creativity in coping and a desire to be useful and appreciated by their families and communities (Decou et al., 2013; Wexler et al., 2013, 2014). Far from being passive victims, youth in the Circumpolar North have demonstrated adaptability and active participation in advocating for themselves and dealing with their problems by using resources available to them and seeking guidance when needed to navigate their problems and difficulties (Wexler et al., 2014).

This review finds no homogeneity among Indigenous communities in the Circumpolar North around communication or cultural norms for dealing with mental health issues. For example, in Canadian Inuit culture, personal emotions are often kept private and aggression or confrontation is not usually how people express themselves (Briggs, 1970; Kral et al., 2011; Kral and Idlout, 2012). In contrast, another study indicated that in the Inupiaq (Alaskan Native group) culture, it is more common for people to be encouraged to share deep feelings with others in a public context (Wexler and Goodwin, 2006). This points to the diversity between Circumpolar Indigenous groups and highlights the importance of ensuring that mental health programming and

support is sensitive to and reflective of local culture and needs (c.f. Berman, 2009), and ensuring the participation of local health care providers, stakeholders, and mental health experts in the creation of mental health resources (Kral et al., 2009).

Also connected to the need for contextually-nuanced mental health programs is the importance to develop mental health resources that are appropriate and relevant to youth and reflective of local perspectives of mental health and well-being (Kirmayer et al., 2000; Kral et al., 2009; Kirmayer et al., 2011; Kral and Idlout, 2012). In addition to bringing local values, perceptions, and priorities to the forefront of mental health programming, it is equally important to provide the space and the opportunity for youth to bring their cultural values, skills, and practices into their daily lives in ways that are meaningful for them and reflect their daily realities (Mohatt et al., 2004; Wexler and Goodwin, 2006; Kral et al., 2009; Wexler, 2009; Ford et al., 2010a; Kral and Idlout, 2012; Decou et al., 2013; Wexler et al., 2014).

2.5 Conclusion

Current rapid rates of socio-cultural, political, and economic change, combined with rapid rates of environmental change, underscored by a history of colonization and current living conditions, creates a context of compounding stressors that increase youth susceptibility to mental health problems and contribute to rising negative health outcomes and disparities (Nuttall, 2000; Wexler, 2006; Kral et al., 2009; Wexler, 2009; Allen et al., 2014, Spein et al., 2013; Wexler, 2014; Wexler et al., 2013). Indigenous youth in the Circumpolar North are influenced by these broad spatial and historical processes which shape their experience of and response to social, spiritual, physical, cultural, political, economic, and environmental stressors and transformations (Nuttall, 2000; Kral et al., 2009; Parlee and Furgal, 2012; Allen et al., 2014; Spein et al., 2013). Consequently, it is crucial to create the opportunities and environments where youth can successfully and positively navigate challenges and enhance and expand their resilience and adaptive capacities—all of which could help to foster healthy, thriving Circumpolar communities.

There is a need for future studies on Circumpolar Indigenous youth mental health to focus on resilience and protective factors to ensure that research advances in a positive manner and is reflective of local needs and understandings of mental health. The

pathways and processes through which these factors protect is understudied and poorly understood and, as such, it is crucial that this research goes beyond identifying protective factors central to resilience and seeks to understand the pathways and processes through which these factors create and enhance individual and community resilience. This research will also need to be expanded to include the emergence of new technologies, social media platforms, socio-economic status, unemployment, housing, the quality of health care services, and the education system. This additional information will assist communities and health care providers to enhance and expand understanding of how youth resilience and adaptive capacities to mental health challenges are developed and sustained. Enhancing this understanding may also help to further identify important resilience factors and appreciate the interactions between and among protective factors.

It is imperative that these research results also be translated into action through culturally-relevant community-level health and wellness programs. For example, several authors from this review have created youth committees, youth action-groups, or regional youth councils that are fully involved in the research process, from setting objectives to facilitating research dissemination (Mohatt et al., 2004; Allen et al., 2006; Kral et al., 2011; Ford et al., 2012). These opportunities provide youth with a chance to gain knowledge, skills, and training that can help them problem solve and navigate challenges. Young people have the potential to become leaders within their respective communities and, in order to foster healthy communities and strong resilience, healthy and resilient youth must also be fostered and supported. This can be achieved with the creation of youth-focused mental health resources and programming that are reflective of local norms, values, customs, and understandings of mental health, and that focus on enhancing and expanding the protective factors identified in this review through meaningful involvement of youth (Mohatt et al., 2004; Allen et al., 2006; Kral et al., 2011; Ford et al., 2012).

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CHAPTER 3:
YOUTH-LED PARTICIPATORY VIDEO AS A STRATEGY TO ENHANCE INUIT YOUTH ADAPTIVE CAPACITIES FOR DEALING WITH CLIMATE CHANGE

3.1 Introduction

Climate change adaptation research has evolved substantially over the past decade in the Canadian North, as the region has experienced significant change in climatic and environmental conditions (Ford and Furgal, 2009; Ford et al., 2010; Ford and Pearce, 2012; IPCC, 2014). An increase in temperatures, thawing permafrost, and reduced sea ice quality, stability, and extent have been widely documented, with implications for the livelihoods and well-being of Inuit who maintain an intimate connection with and reliance on the natural environment for subsistence and cultural activities (Krupnik and Jolly, 2002; Ford et al., 2006; Nickels et al., 2006; Ford et al., 2008; Ford, 2008, 2009; Prowse et al., 2009; Cunsolo Willox et al., 2012b, 2013a; Harper 2012). Inuit are experiencing this environmental change in the context of rapid and extensive social, cultural, political, and economic change that stems from the history of colonization (Lehti et al., 2009, Richmond, 2009; Ford et al., 2010; Cameron, 2012). Despite being faced with multiple and interconnected pressures and changes, Inuit communities have demonstrated significant resilience to current and past change, and continue to proactively work towards supporting and maintaining healthy communities and cultures (Krupnik and Jolly, 2002; Ford et al., 2006; Nickels et al., 2006).

Considering the dynamic social, cultural, political, and economic landscape in the North, the involvement of Inuit communities in research is critical in understanding the potential future vulnerabilities and for adaptation planning (Cunsolo Willox et al., 2012b; Ford and Pearce, 2012; Pearce et al., 2012; Cunsolo Willox et al., 2013a; Ford et al., 2014). Involving community partners in the research process can also bring awareness and respect to the culture and context of the partner community, facilitate capacity development, and highlights local knowledge, voices, and experience that advance research in a way Western science cannot do alone (Bird et al., 2009; Castleden et al., 2012; Cunsolo Willox et al, 2012a; Smith, 2012). In this context, human dimensions of climate change research in the Canadian North has seen increasingly meaningful

partnerships with and leadership by Inuit communities using a diversity of approaches, premised on active community participation through all stages of the research process (Harper et al., 2012; Pearce et al. 2012; Peace and Myers, 2012), including PhotoVoice (Healey et al., 2011), and digital storytelling (Cunsolo Willox et al., 2012b).

Despite the increase of Inuit participation, youth voices and involvement remain largely absent in climate change research and adaptation planning—an absence which has been identified as an important research gap (Ford and Pearce, 2010; Petrasek MacDonald et al., 2013a). Because Inuit youth are an important and growing population and are already having to adapt and cope with environmental and climatic changes among other challenges facing their future (Petrasek MacDonald et al., 2013a), adaptation research, policy, and practice can be more representative, effective, and sustainable by mobilizing a younger generation that is invested in and can advocate for these changes. Indeed, the younger generation offers perspectives, experiences, and skills and who, if given a chance to participate in adaptation research through meaningful and innovative methods, have the potential to make important contributions.

Digital methods, such as PhotoVoice, digital storytelling, and participatory video, are examples of participant-centered, youth-focused research methods that have been used successfully across a wide range of academic disciplines and spanning multiple geographic regions (Stewart et al., 2008; Foster-Fishman et al., 2010; Iseke and Moore, 2011; Cunsolo Willox et al. 2012b; de Lange and Geldenhuys, 2012; Hung et al., 2012; Jardine and James, 2012; Ohashi et al., 2012; Alrutz, 2013; Chonody et al., 2013; Genuis, 2013). Specifically in Northern Canada there is a long history of using digital media, particularly film, in research and to share Inuit life and culture with broad audiences (e.g. *The People's Land* (Brody, 1976)*, Atanarjuat: The Fast Runner* (Kunuk, 2001)*, Qapirangajuq: Inuit Knowledge and Climate Change* (Kunuk and Mauro, 2010), *People of a Feather* (Heath and the Community of Sanikiluaq, 2012), *Attutaunijuk Nunami/Lament for the Land* (Cunsolo Willox and the Communities of Nunatsiavut, Labrador, 2014). Also see www.isuma.tv). Youth-led filmmaking is also well-established in the North, with groups such as The Arviat Film Society, Conversations with the Earth, and Konek Productions leading the way for digital communications. Building on this history, and recognizing the need to encourage and increase youth participation in climate

change scholarship, this paper analyzes if the process of youth-led participatory video has the potential to support known protective factors, leading to enhancing adaptive capacities and contributing to building youth resilience within the context of climate change adaptation research.

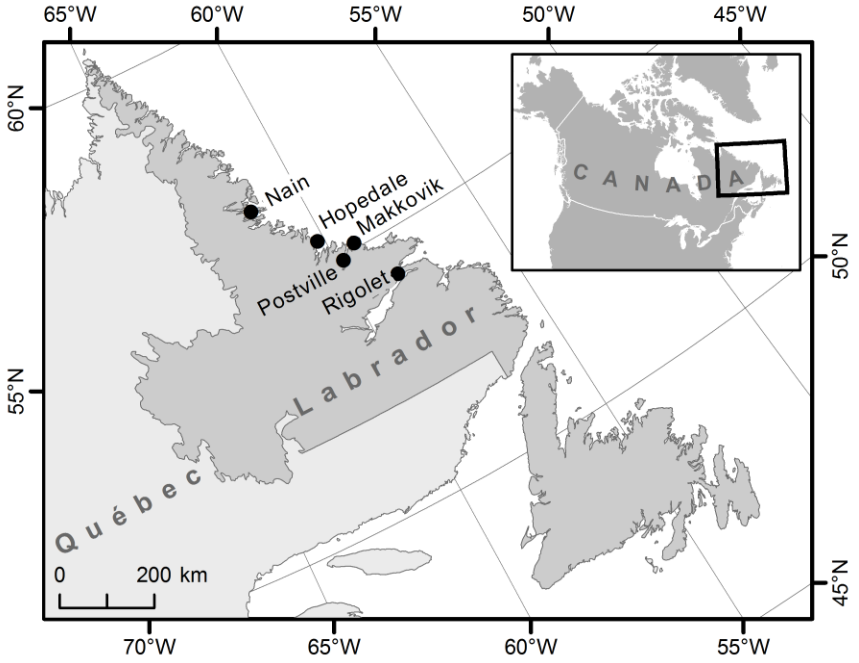

Figure 1: The community of Rigolet is the Southern-most community in Nunatsiavut. Labrador, Canada (54°N, 58°W)

3.2 Methods

3.2.1 Partner Community

This project took place in Rigolet, Nunatsiavut, Canada (54°N, 58°W, Fig. 1). Nunatsiavut is part of Inuit Nunangat (Inuit Homelands), was formalized through the Labrador Inuit Land Claims Agreement in 2005, and encompasses a wide range of landscapes including subarctic tundra, coastal barrens, and boreal forest. This landscape supports and sustains people who live in five coastal communities, with Rigolet the southern-most community. The small, remote coastal settlement is on the Northeast coast of Labrador, and of the 306 community members, 85% identify as Inuit (Statistics Canada, 2011a,b). Rigolet is a young and growing community with children and youth (ages 0-25) representing 31% of the population, over half of them being youth (ages 12-

25) (Statistics Canada, 2011b). Northern Lights Academy, the local school from Kindergarten to Level III, has a total of 50 students.

Inuit in Rigolet continue to rely on the land, which is a vital part their lives and culture (Cunsolo Willox et al., 2012a,b; Harper et al., 2012; Cunsolo Willox et al., 2013a). Traditional cultural activities valued and practiced throughout the year include fishing, hunting, trapping, berry-picking, and trips to a family cabin. Land activities, such as hunting, also contribute to the mixed economy of the region in which people participate in both wage employment, such as public administration or resource based extraction, and subsistence-based harvesting. Along with other needs for transportation in and around the community, cultural activities on the land and subsistence-based harvesting rely on adequate ice and snow conditions in the winter for the snowmobile. As there are no roads in or out of Rigolet, it is only accessible by boat in the summer or year-round by plane, both of which depend on good weather conditions. Environmental and climatic changes and variability have been and will continue to be experienced by the community of Rigolet and link to a wide range of impacts on lives and livelihoods of community members (Table 1) (Cunsolo Willox et al., 2012a, 2013b).

Rigolet also houses the 'My Word': Storytelling and Digital Media Lab, which was established in 2009 as a participatory multi-media lab with computer and media equipment, resources, and support available to the community. The 'My Word' Lab has worked with Inuit youth and adults throughout Nunatsiavut on digital stories around various themes, including climate change, and has on-going media projects using a variety of research and digital media strategies.

This project partnered with the 'My Word' Lab, along with Konek Productions, an Inuit youth-led film company based Nunavut, to provide filming and editing training and assistance in facilitating a participatory video workshop. Working with the 'My Word' Lab and Konek Productions united local digital media experts and Inuit youth filmmakers to create a facilitation team with technological skills and experience working in partnership with researchers and youth.

Table 1: Summary of the current and projected climatic and environmental changes documented in Nunatsiavut and associated impacts and risk factors for the community of Rigolet (Cunsolo Willox et al., 2012a, 2013b)

Climatic and environmental changes in Nunatsiavut	Impacts and risk factors in Rigolet
• Increased seasonal temperatures • Increased frequency and intensity of storms and rainfall • Decreased show quality and amounts • Changes in snowfall patterns • Decreased ice stability, thickness, and extent • Later freeze-up in the fall and earlier ice break-up in the spring • Rising water levels and decreasing coastlines • Changes in wildlife behaviour and migration • Changes in vegetation growth patterns	• Increased risk in foodborne and waterborne diseases • Increased susceptibility to mental and emotional health challenges • Disruptions to the ability to practice harvesting and land-based activities (e.g. hunting, fishing) that hold cultural and social importance, that are relied upon for subsistence, and that are important for intergenerational knowledge transfer • Safety concerns for traveling on the snow and ice, especially in spring and fall • Challenges to food security from dependence on plane or boat to transport market foods • Impacts on community connectedness and overall community mood and well-being

3.2.2 Participatory Video

Participatory video (PV) is a digital media research method with roots in community activism and social development work that aims to shift power dynamics by having participants direct and control the creation of a film connected on a topic of research and community interest (Kindon, 2003; Lunch, 2007; Garrett et al., 2012; Blazek and Hranova, 2012; Milne et al., 2012). The method prioritizes community perspectives, place-based knowledge, and local narratives in research (Lunch, 2007). Focus is on the *process* of filmmaking, and on discussions, relationships, and opportunities for knowledge sharing and learning that arise (Lunch, 2007; Blazek and Hranova, 2012). In addition, PV has proven to be an effective strategy for sharing knowledge and information with diverse audiences including policy-makers and other communities (Ferreira, 2006; Lunch, 2007).

Participatory video has been applied by a variety of users including youth, women, and Indigenous communities, and used in a diverse array of contexts (Table 2). In the context of climate change adaptation, there are examples of PV projects in Malawi,

the Bahamas, Argentina, and Indonesia that have been organized and supported by non-governmental organizations (Suarez et al., 2008). Furthermore, initiatives such as Conversation with the Earth (http://conversationsearth.org) focus on Indigenous voices within the context of environmental and cultural change around the world from Canada to Peru to Kenya. As Suarez et al (2008) argues however, research has yet to seriously engage PV in climate change adaptation research.

Table 2: Five examples of research from around the world that have used the approach of participatory video in diverse disciplines, with a variety of participants, and in very different contexts.

Journal Article	How participatory video was used
Blazek, M. and Hranova, P. (2012). Emerging relationships and diverse motivations and benefits in participatory video with young people. Children's Geographies 10(2): 151-168.	Worked with a youth in a challenging neighbourhood in Bratislava, Slovakia to explore youth perspectives of neighbourhood violence.
Moletsane, R., et al. (2009). What can a woman do with a camera? Turning the female gaze on poverty and HIV and AIDS in rural South Africa. Int J Qual Stud Educ 22(3): 315-331.	Used PV with women in a rural community in South Africa to explore their perspectives and understandings around challenges and solutions related to issues facing their community such as poverty, gendered-based violence, and the AIDS pandemic.
Parr, H. (2007). Collaborative film-making as process, method and text in mental health research. Cultural Geographies 14(1): 114-138.	Investigated the social geographies of mental health using PV to explore the connections between arts and social inclusion of people with severe mental health problems.
Mistry, J. and Berardi, A. (2012). The challenges and opportunities of participatory video in geographical research: exploring collaboration with indigenous communities in the North Rupununi, Guyana. Area 44(1): 110-116.	Used PV in Guyana to investigate how social memory develops and influences natural resource management practices and resilience in the midst of significant social and ecological events/challenges.

Lomax, H., et al. (2011). The politics of performance: methodological challenges of researching children's experiences of childhood through the lens of participatory video. Int J Soc Res Methodol 14(3): 231-243.	Explored how the process of PV can shed light on children's experiences and relationships by examining the nature of participation, politics within the project context and also within the community, and broader ethical considerations of doing research with children using a PV project done with children in a disadvantaged neighbourhood.

3.2.3 Data collection

The fieldwork was carried out over 3 phases: scoping trip, participatory video workshop, and data-gathering phase (Table 3). The main data that informed this work emerged from in-depth interviews in which questions were centered on the experiences and perceptions of the process of PV to explore the use of this digital media method as a tool to connect to known protective factors, and enhance adaptive capacities and youth resilience within the context of climate change.

Table 3: Summary of the phases of fieldwork.

Phase	Activity	Timeframe
Phase 1: Scoping Trip	Meeting with town council, principal, and students to discuss project	5 days, one month prior to Phase 2
Phase 2: Participatory Video Workshop	Planning and training	Week 1 - Day 1
	Filming	Week 1 - Day 2-4
	Editing	Week 2
	Community Screening	Weekend evening after Week 2
Phase 3: Data-gathering	Interviews with youth participants, parents, teachers, community members	Week 3

3.2.3.1 Phase 1: Scoping Trip

During a scoping and consultation trip in March 2013, the idea for the project was presented to students in Grades 7-12 (ages 12-17), with students being invite to participate. Seven youth, two males and five females, between the ages of 12 and 16

joined the project. All participants were familiar with video technology and many had existing skills in the use of film equipment and editing software that was used in the workshop, although individual-specific media training was provided to all youth in the workshop, so they could enhance and expand their skills.

3.2.3.2 Phase 2: Participatory Video Workshop

The workshop took place in spring 2013 and was structured over the course of two weeks for two hours every weekday. The first week consisted of deciding on a film topic, planning content, training in camera equipment, and filming. During the second week the youth learned about and used iMovie and Final Cut Pro X editing software to edit short clips with the footage they recorded. Using these clips and incorporating other footage, the facilitators from Konek Productions edited the film with direction from the youth. At the end of the workshop a well-attended community screening took place where the youth could share their film and celebrate the end of the project.

The resulting production, *Life in Rigolet,* is a 17-minute video that tells the story of what it is like to be a youth in the community of Rigolet in the winter (https://www.youtube.com/watch?v=efzp2gvZQvc). While the research interest in approaching this project was on youth priorities and perspectives of community climate change adaptation, the focus and content of the film was left up to participants as per the principles of PV. At the beginning of the workshop youth decided that they wanted to showcase their community, tell a story about their lives, and create a film about the activities that fill their time in the winter. The youth chose to film various winter activities such as sliding (i.e. tobogganing down a hill), going on a boil-up (i.e. a traditional cultural practice of going out on the land for a campfire), being on a snowmobile, spending time at the youth center, and playing games in the school gym. As such, information about climate change adaptation was not included in the film.

3.2.3.3 Phase 3: In-depth Interviews

Following the workshop, one week was spent conducting in-depth, semi-structured and open-ended interviews (n=21) to examine if and how participatory video can support known protective factors that have been identified to underpin youth

resilience to a variety of stresses, including impacts of climate change. The interview schedule for youth participants consisted of 37 open-ended questions under three sections—film content, film process, and film evaluation—with a fourth section on protective factors which had 32 statements to be answered using a Likert scale with categories of 'strongly agree', 'agree', 'disagree', and 'strongly disagree' along with 'I don't know' or 'Refuse' (Table 4). The protective factor section of the interview was developed based on a systematic literature review on the protective factors that enhance Circumpolar Indigenous youth resilience to a range of stresses (Petrasek MacDonald et al., 2013b). The community member interview schedule consisted of 12 open-ended questions (Table 5).

Table 4: Example of questions asked under each of sections in the youth participant interview guide. In the last section youth answered each statements on a scale from strongly agree to strongly disagree with options of 'I don't know' or 'Refuse'.

Section	Examples of questions
Film content	Tell me about the video you made. Tell me about the footage that you wanted shot and included? What is the main message you wanted the film to convey?
Film Process	How would you describe the experience of making the film? Is there anything you would change about the film? Did you feel you had enough skills, knowledge, and support to make the film you and your peers wanted to make? Would you make a film again if you had another chance?
Film Evaluation	What do you think about your film? Do you think the film is a good way to teach people from Rigolet and from other communities about this community? Why or why not? How did you feel when your film was screened for the community?
Protective Factors	The project made me feel useful in my community. I developed deeper relationships throughout the process with my peers. I received a lot of praise from my community throughout the process. I felt ownership over the project.

Table 5: Example of questions asked in the community member interview guide.

Interview Questions
- Have you heard of the participatory video project that was taking place in Rigolet with the students at the Northern Lights Academy? If so, where did you hear about it? - Did you think the video was an effective way to connect with the community and culture of Rigolet? Why or why not? - Do you think that video is a good teaching tool to illustrate the concerns perceived by youth? Why? - Do you think video is a good discussion started about ways to respond and adapt to the changes felt by the youth and/or community? - Can you think of other ways this video can be used?

Interviews were conducted with youth participants (n=7), parents (n=4), teachers (n=4), youth center staff (n=1), community members (n=2), a council member (n=1), and project team (n=4). The interviews were conducted in a conversational manner to engage participants in dialogue and allow interviewees to direct conversation, and with space for the interviewer to pursue interesting comments (Kvale, 1996). All interviews were conducted in person, in English, at a location chosen by the participant and audio recorded with permission of the participants.

3.2.4 Data Analysis

The interviews were qualitatively analyzed using a constant comparative method in which continuous comparison of codes between and within interviews was conducted (Bradley et al., 2007). Analysis consisted of creating project memos for each interview to document quotes, common words, and emerging ideas and relationships which were then reviewed collectively to group key quotes, words, and ideas under descriptive nested open codes (Miles and Huberman, 1994; Denzin and Lincoln, 2005). Concept maps were created to illustrate relationships and overlap between codes to identify and compare key concepts and overarching codes. This resulted in expanding and collapsing the list of codes continuously as new ideas emerged until key themes that best reflected the data were identified. Likert scale data were analyzed using frequency counts. Participant verification was done in February 2014 through meetings with youth participants and

community members to ensure that the findings were reflective and representative of the local and cultural context from which they emerged.

3.3 Results

Upon reflecting on certain aspects of the PV workshop, as well as the process as a whole, youth participants, parents, teachers, and other community members described experiences, feelings, and observations that are synonymous to known protective factors that enhance Indigenous Circumpolar youth resilience, as summarized by Petrasek MacDonald et al. (2013b), and, as such, can be connected to fostering adaptive capacities to climate-related challenges. Six of these documented protective factors strongly emerged:

3.3.1 Autonomy and Empowerment

Six out of seven youth either strongly agreed (n=2) or agreed (n=4) that participating in the participatory video workshop enhanced their self-esteem throughout the process, while the other youth participant ranked this aspect as disagree. All participants either strongly agreed (n=5) or agreed (n=2) that they felt a sense of ownership over the project. When describing what contributed to developing feelings of ownership, youth noted various pathways such as feeling in control at all stages of the filmmaking process, feeling that their interests and ideas directed the project, and being trusted with the equipment. As one female participant described,

> It was fantastic! There's a lot of fun activities to do in the film…like sliding…it's like you take control of the camera…you just like film anything. Well first you have to work it out. But then you're like 'Oh if we want to go play outside' then [the facilitators] will be like 'Yah ok let's try it!'

Parents and teachers observed and commented on autonomy as one of the important benefits from the workshop. For example, one teacher voiced the view that the greatest impact of the project for the youth participants was

> getting them to make the video and to know they did it. Not something done for them or thrown together or handed to them. They worked on it and they did it and then got to show everyone what they did and they got good feedback. I think that's the biggest thing out of it.

Beyond feeling ownership, the project also fostered empowerment. As one of the facilitators from Konek Productions said, "My main goal here was to let the younger people know [and understand] that as long as you stick with something you want to do, it's something you can do if you work on it." The ability of the project to empower youth was also noted by teachers who saw the students taking charge of the project. One teacher said that the project "Gets the kids saying 'OK, I can do this' and they did do it very well."

3.3.2 Pride in Self

All participants strongly agreed (n=6) or agreed (n=1) using the Likert scale that participating in the project made them feel proud and strongly agreed (n=3) or agreed (n=4) that participating in the project made them feel special. When asked if they received a lot of praise throughout the process from teachers and friends, all participants strongly agreed (n=2) or agreed (n=5). With respect to receiving praise from family and the community, the Likert results were similar where one youth disagreed (n=1) and the rest agreed (n=2 for family, n=5 for community) or strongly agreed (n=4 for family, n=1 for community). These findings from the Likert questions connect to other feelings and experiences youth described. For example, many students said they developed more confidence in making videos, in using a camera, and in themselves. One female participant described how her confidence in her filmmaking skills has grown noting, "I've learned more to technology now so I won't be like 'I can't do this' and now I'll be like 'Oh I know what to do!'"

Parents and teachers recognized confidence and pride fostered in the youth participants, particularly at the screening, with comments such as, "There was great pride. They stood tall. You could see…cause I tend to watch them as they watch themselves on the screen as well…so just observing them you could see the smiles." The self-pride fostered through the process was recognized as one of the key benefits of the project. As one teacher commented, "If you talk those kids today then I think they'll say 'I'm proud of what I've done, what we've done'. Individually and as a group – which is important…affirmation of that."

In addition to learning and enhancing skills and filmmaking knowledge, and gaining self-confidence, other pathways that led to feeling pride in self included the continuous communication with peers, family, and teachers throughout the process, having a tangible, visual product of the effort and time that went into the project, and having an opportunity to showcase skills, talents, and knowledge that received praise and recognition by a well-attended screening. Indeed, there was widespread community representation at the screening with grandparents, parents, siblings, friends, teachers, and other community members coming to support the youth and watch their video. The praise and affirmation that the youth received at the community screening was a particularly important pathway that contributed to fostering pride in their work and in themselves throughout the process.

3.3.3 Connecting Generations

Using the Likert scale, the majority of the participants strongly agreed (n=2) or agreed (n=3) that the project gave them a chance to interact with people in the community in a different way than usual while the other participants disagreed (n=1) or chose the option 'I don't know' (n=1). While some youth strongly agreed (n=2) or agreed (n=2) that they developed deeper relationships throughout the process with other community members, other youth disagreed (n=3). It is worth noting that all youth disagreed (n=7) that they had a lot of opportunity to communicate and interact specifically with Elders throughout the process. Rather, the communication and interaction with older community members reported by youth was with middle-aged adults such as parents and teachers.

Sharing the film at the screening and having conversations about the film afterwards—particularly with older community members such as parents, teachers, and other middle-aged adults — provided an opportunity for the youth to connect with adults in their community. For example, one female participant recounted a conversation with an older community member after the screening, "He was asking if it was fun to make, how you made it, what did you do, what parts did you cut out." Many of the older audience members said that having the film come from the voices of some of the youth in their community made the resulting video all the more interesting to them.

Creating opportunity and space for conversations between the youth and older generations in the community was recognized and appreciated as one of the benefits of the film, but was also reported as a benefit of the process. For example, youth spoke to teachers and parents about the progress of the film throughout the project. While the communication and interaction with older generations as part of the project was limited to the community screening, the youth expressed great interest in having more opportunity to connect with adults and Elders in particular through video formats in the future. The option of interviewing adults or Elders as part of another youth-led video was suggested by youth and parents.

3.3.4 Community Pride

Community pride largely stemmed from feeling support from the community, which extended into the participatory video process as all the participants strongly agreed (n=7) on the Likert scale that the community was supportive of the project. These findings from the Likert questions were supported when the youth discussed the attendance at the screening and the free use of space and equipment as examples of the pathways through which support is expressed. Feeling support from the community in general was vocalized by youth participants in their film and interviews (e.g. See time 3:00-3:15 in the film).

The expression of community pride was at the core of the film's story and message. Reflecting on community support, sharing experiences of living in the community, and expressing community pride and pride in place to disprove negative stereotypes of small, remote, Northern communities are pathways through which community pride was fostered. When asked what message they hoped people would take away from the film, participants said things like, "I'd like people to see how good our town is and how nice the people are around here", and,

> How life in Rigolet turns out to be. Usually like when you tell someone about Rigolet, and it's just like a small community, they'll be like 'Oh that sounds so boring. There's like nothing to do. You don't have parks or restaurants or anything like that.' And when you watch the video you learn that there's actually so much to do.

In particular, youth felt great pride in sharing the tradition of going out for a boil-up (e.g. See time 3:53-5:00 in the film) with the out-of-town facilitators and with the audience, and as one audience member remarked "[The] intimacy of boil-up seemed to be a focal point for a lot of the kids, what they take pride in and what they enjoy doing." Seeing the community pride expressed by youth in the film fostered community pride in the audience. After seeing the film, one mother and Rigolet resident who has lived in town her entire life said that it was great to see "our little community" highlighted in the film and that she enjoyed it because, "it's your own children there, your own community."

3.3.5 Communication and Reflection

Opportunities for communication, interaction, and discussion occurred both throughout the process and via the film. When asked to rank on a Likert scale whether there were lots of opportunities to communicate and interact with family, all youth participants strongly agreed (n=1) or agreed (n=6) and six out of seven participants strongly agreed (n=5) or agreed (n=1) that there were lots of opportunities to communicate and interact with their peers throughout the project, while the other participant chose the option 'I don't know'.

Both youth and adults recognized the film as an interesting and effective method for communicating youth perspectives, knowledge, and experience. After viewing the final film, parents, teachers, and community members commented on the ability of the video to provide insight into the lives of their children and other youth in Rigolet. As one mother commented, by watching the video she "[got] a chance to see the things they like to do and hear from them and see the way they interact." This demonstrates the ability of a youth-led film to share insight into the lives, perspectives, skills, and capabilities of its young creators; such information, that otherwise might not be available, could greatly enhance adaptation research.

Youth-led video in particular was cited as a useful knowledge-sharing tool that could inform youth programming in Northern communities. For example, one participant said, "The film explains what we do in Rigolet when it's boring;" this information was of particular interest to one of the parents who has reflected on the activities available for

her children and other young people in Rigolet: “I thinks to myself there isn’t much for them to be doing.” One youth participant commented that video is a fun alternative itself if you cannot go out on the land or if you are bored.

The ability of the filmmaking process and the final film to inspire reflection was also noted by participants. For example, one participant said, “A lot of people are going to see it and then they’ll start thinking about [the information in the film].” The process and film also provided an opportunity for participants themselves to reflect. As one parent commented, “For them [the youth participants] it was a learning experience, gave them a chance to think about things they do in the community.”

3.3.6 Meaningful Opportunities to be Involved

Parents noted the ability of video technology to involve and engage their children in a meaningful activity. For example, one parent felt that incorporating her daughter’s interest in filmmaking with land activities might encourage her to get outside more: “If [my daughter] were to make a video about [the cabin] she would be more interested in going.” Based on the success of video engaging youth in the community, many adults saw potential of youth-created video as a means of promoting youth participation, involvement, and input in local or regional issues. Both of the community facilitators noted that video is a good way to get youth to open up about their thoughts, opinions, ideas, and feelings: “[It’s a] good way to get youth talking about things they wouldn’t normally talk about.”

When discussing the use of video to highlight the youth voice, a parent who was also one of the community facilitators emphasized that video is a meaningful way to involve youth and address the lack of youth inclusion in community issues,

> [Making a video] would be a chance for them to talk about things they might always think about or talk about together and then it would make everyone think about it, because we don’t always think that the kids even know anything let alone that they’d have something valuable to offer, you know what I mean? Which is really bad on our part but that’s just the way society is I guess. And then it would help other kids to think about it if they see their peers talking about this.

In particular, community members also saw great potential in doing video to get youth involved around the issue of climate change. When asked about youth and climate change in the interviews, many community members pointed out that climate change is not at the forefront of the minds of youth, one teacher said,

> I think if you spark the conversation [about climate change] then you will get the results…I don't know that they've been challenged or empowered enough to take [climate change] on as a cause, there's not been a call to action but they would certainly respond to a conversation.

Parents and teachers think climate change is "something important for them to start thinking about" and "be empowered to take on as a cause" and, as such, this can be an appropriate issue to address with youth. Community members also had ideas about the ways in which participatory video could be used with youth on climate adaptation work such as sparking discussion and conversation about changes, impacts, and responses in a fun and positive way, and translating knowledge by youth filming interviews with grandparents or Elders about their childhood and how their activities have changed. As one parent commented, "I think [video] would be a good way to initiate their thinking to climate change. A good way to bring it up in not such a serious or daunting way and it would get the kids thinking about the issues."

3.3.7 Pathways to Protective Factors

Not only was the participatory video project itself cited as a pathway to various protective factors experienced or observed by participants and community members, but within the process there were multiple pathways that emerged. Figure 2 illustrates the various protective factors and the corresponding pathways (i.e. aspects of the process) that were reported or observed.

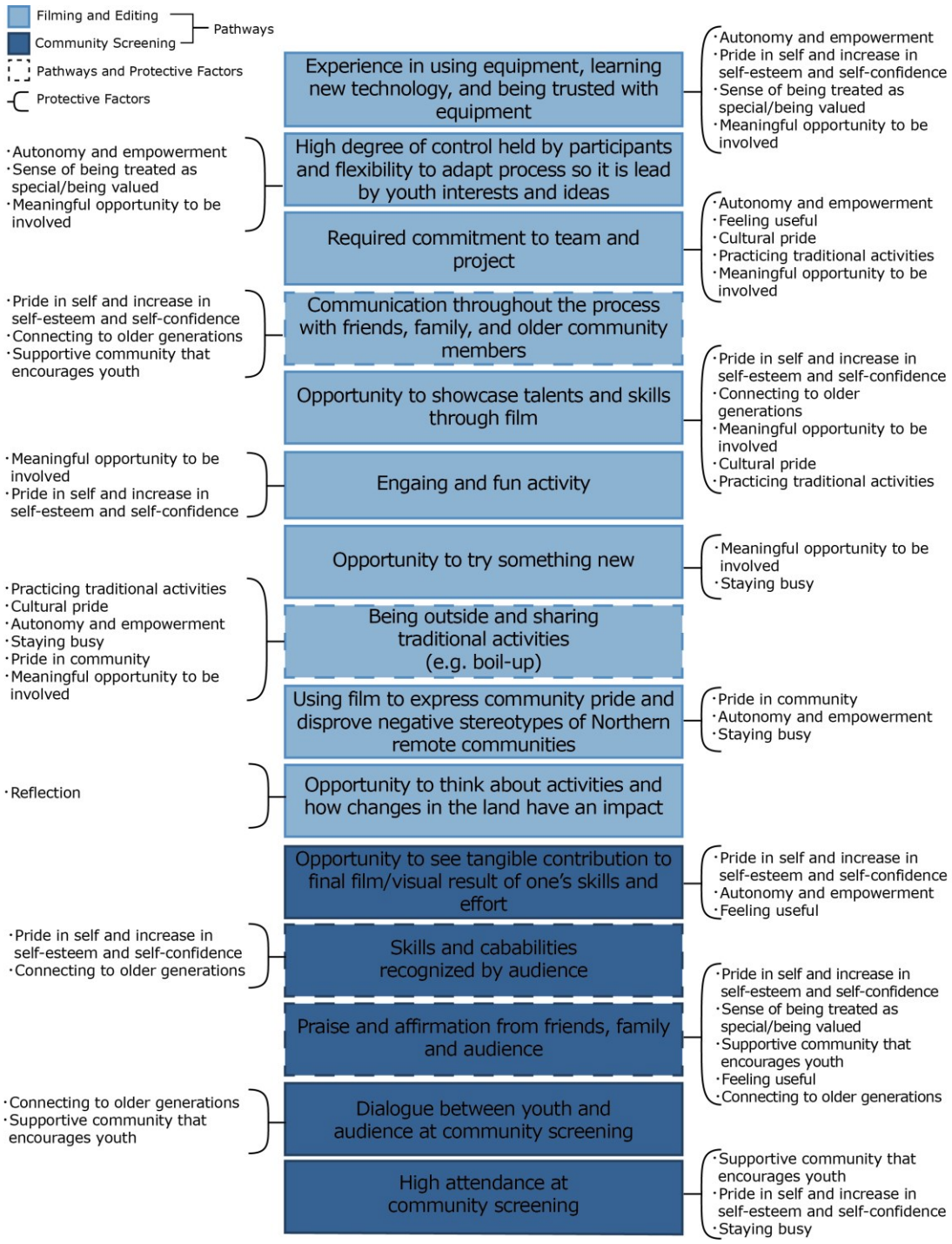

Figure 2: The various pathways within the PV process reported to foster protective factors. Lighter boxes are pathways that occurred during filming and editing while the darker shaded boxes are pathways that emerged from the community screening. The pathways with a blocked border represent pathways that were also reported as protective factors in and of themselves.

3.4 Discussion and Conclusion

Participatory video is an important method for engaging youth in research and educational processes. It resonates with the interests of young people and uses technology with which they connect to access, explore, and vocalize their thoughts and feelings and showcase their skills, interests, knowledge, perspectives, ideas, experience, and capabilities (Allan, 2012). This method also provides training and capacity development benefits by offering a learning and communication platform that creates opportunities for collaboration with youth in a research setting and encourages the participation of young people in planning and decision-making (Lunch, 2007; Milne et al., 2012). As this case study demonstrates, one important characteristic of participatory video is its ability to connect to known protective factors that may have the potential to also foster youth resilience and enhance adaptive capacities.

Embedded in the process of participatory video are pathways to known protective factors that underpin Circumpolar Indigenous youth resilience to a variety of stresses, including climate change challenges (Petrasek MacDonald et al., 2013b). For example, the conversation, learning, and relationship-building present throughout the process of creating a participatory video (Ferriera, 2006) can serve to further connect youth with adults or elderly community members, a known factor that is important for Circumpolar Indigenous youth resilience in general (Kirmayer et al., 1998; Wexler and Goodwin, 2006; Kral et al., 2011; Decou et al., 2013; Wexler et al., 2013a,b). Through connecting generations, PV has the capacity to build upon and strengthen existing social networks, including kinship, that continue to be of great importance in Inuit communities. More specifically, connecting youth with older community members is essential for sharing traditional knowledge between generations, which, in turn, can increase resilience to climate change impacts (Ford et al., 2006, 2010; Pearce et al., 2011).

Indeed, social connectedness is crucial for promoting resilience and adaptability to climate change, facilitating the engagement of multiple expertise in adaptation planning, ensuring that concerns are represented and addressed, and increasing local capacity for community action on adaptation efforts (Ford et al., 2006; Ebi and Semenza, 2008; Ford et al., 2010). Furthermore, a disconnect between generations has been observed and experienced in the North, and has been associated with a breakdown of

knowledge transfer, weakening of land-based skills, and enhanced vulnerability among younger generations to climate change impacts (Ford et al., 2006, 2008, 2010; Kral et al., 2011; Pearce et al., 2010, 2011; Heyes, 2011). One of the priorities for enhancing adaptive capacity outlined by Ford et al (2010), for example, is "supporting the teaching and transmission of traditional skills" (p.187) and this priority, along with developing strong social networks can be addressed using PV. As this case study demonstrates, PV can create opportunities that foster intergenerational relationships by having youth share their film with older generations. Participants in this study also identified potential for PV to include older community members in the process by having youth do film interviews with adults or Elders which could also provide opportunities for knowledge sharing.

Having meaningful opportunities to be involved within one's community is another protective factor known to enhance Circumpolar Indigenous youth resilience by strengthening relationships in the community and providing opportunities for praise and feeling ownership (Mohatt et al., 2004; Allen et al., 2006; Ford et al., 2012; Decou et al., 2013). In addition, community involvement is one way of increasing social capital and strengthening social networks, important determinants of adaptive capacity for climate change as described above (Ebi and Semenza, 2008). Participatory video not only provides an opportunity for youth involvement in and of itself, but can also be a means of engaging youth to be involved in other community issues such as adaptation planning. Suarez et al. (2008) describe participant-led video as an "ideal mediation space to bring together the multiple stakeholders needed to address climate change" (p.96). Youth are important stakeholders in adaptation discussions, and youth-led PV can be a way to communicate perspectives to inform priorities, harness the innovation and creativity of youth for developing adaptation strategies, and act as a gateway for discussion between youth, community leaders, researchers, and government representatives. Providing opportunities for young Inuit to be meaningfully involved in community issues using PV demonstrates recognition and appreciation for youth that can lead to autonomy and foster community pride and self-pride, other protective factors that have been documented to enhance Circumpolar Indigenous youth mental health and well-being (Bals et al., 2011a; Wexler, 2013; Wexler et al., 2013a) and as such may contribute to enhancing resilience and adaptive capacities for dealing with climate change impacts.

Throughout the process of participatory video, there is opportunity for continuous communication and interaction with peers, family, and community members through collaborating with peers on creating the film, involving others in the filming, and discussing the project with friends, family, and community members. While communication and interaction within one's family and community are known protective factors (Mohatt et al., 2004; Wexler and Goodwin, 2006; Kral et al., 2011), whether this protective nature extends to communication and interaction *between* communities is less clear, but may be likely. For example, in an adaptation context, despite great variability across Northern communities with respect to the changes being experienced, the existing challenges faced, and the ways in which people can best adapt, there is still much that can be learned from one another about best practices in adaptation (Ford and Pearce, 2012). Inuit youth in communities across the North could be engaged in creating videos to document adaptation ideas, programs, and success stories that could foster opportunities for sharing, reflection, and consultation on community initiatives, promote action at a local and regional level, and, perhaps most importantly, connect youth across the North to other people who face similar challenges.

Sharing videos could also provide an opportunity for youth to advocate for their communities and express community pride (Suarez et al., 2008). Indeed, communities play a crucial role in fostering youth resilience and adaptive capacities (Decou et al., 2013; Wexler 2013; Wexler et al., 2013a,b). Specifically, feeling a sense of belonging to a supportive, caring, and connected community is at the core of Indigenous cultural values and greatly enhances Circumpolar Indigenous resilience (Mohat et al., 2004; Wexler and Goodwin, 2006; Decou et al., 2013; Wexler, 2013; Wexler et al., 2013a) and cultivates strong communities that support participation and cooperative, community-led action which has been identified as important to building adaptive capacity (IPCC, 2014). Not only can the process of PV foster these feelings, the video itself can be used to express the support youth feel from their community as was the case in this study.

At the same time, it is important to recognize there were several challenges faced and lessons learned along the way in this exploratory project. For example, the two-week timeframe limited opportunities for in-depth planning, training, reviewing footage, and developing deeper relationships between and among participants, as well as among youth

and facilitators. Furthermore, a higher degree of facilitation and guidance was required than initially was anticipated. While the participants were the directors of the process, the amount of flexibility versus direction was constantly shifting. Working with flexibility led to another challenging aspect—one which has been discussed by other researchers using participant-led methods—which was the struggle of maintaining research interests while using a method controlled by participants (Evans et al., 2009; Lomax et al., 2011). An intentional project goal and the substance of PV is to shift power dynamics in order to ensure participant control; however, this can lead to a substantial shift away from the original research topic. In this case our interest was in gathering youth priorities and perspectives on community climate change adaptation but the final film that emerged was not related to climate change but rather showcased the lives of youth in Rigolet, specifically their winter activities. Although in the follow-up interviews, especially with the teachers, it was possible to pursue some of the reasons why this might be the case, the project demonstrates how the challenges of managing people and losing control are important aspects of the PV experience that can open interesting research avenues and lead to rich knowledge-sharing opportunities that might otherwise not be accessed (Evans et al., 2009; Milne et al., 2012).

Although this case study shows promise for using PV to engage youth in Northern adaptation research in a way that connects with protective factors important for youth resilience and adaptive capacities, the work is preliminary and more research is needed to further investigate the application of participatory video in adaptation research and planning. As the need for targeted adaptation planning and research increases with the rapid rate of change in the North and globally, encouraging the participation and leadership of youth is crucial (Petrasek MacDonald et al., 2013a). By meaningfully engaging youth and consciously connecting to known youth protective factors, such as through the use of PV, adaptation research can incorporate youth voices and perspectives while fostering youth that are resilient, motivated to adapt, and capable of dealing with the socio-economic, cultural, physical and/or mental health impacts of climate change. Developing a healthy, actively involved, and resilient youth population can contribute to fostering healthy communities and a healthy future.

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CHAPTER 4:
PROTECTIVE FACTORS FOR MENTAL HEALTH AND WELL-BEING IN A CHANGING CLIMATE: PERSPECTIVES FROM INUIT YOUTH IN NUNATSIAVUT, LABRADOR

4.1 Introduction

The Circumpolar North has been warming in excess of twice the global average since the 1980s, with some regions experiencing warming >3°C (IPCC, 2014; Warren and Lemmen, 2014). Consequent impacts on ice conditions, snow, weather, wildlife, and vegetation have been profound, and are affecting the livelihoods and lifestyles of Indigenous peoples who maintain close connections to the environment (Arctic Council, 2013; IPCC, 2014). Climate change is also occurring within a context of rapid political, economic, social, and cultural transitions and transformations associated with globalization and state-led policies of assimilation (Lehti et al., 2009, Richmond, 2009; Ford et al., 2010b; Cameron, 2012). Together, these changes will have potentially significant impacts on mental health and well-being, with studies identifying that Indigenous communities will face more serious challenges from climate change given their often-high dependence on the natural environment, experience of historical trauma associated with past colonial practices, and inhabitance in areas highly susceptible to climate change (Berry, 2009; Swim et al., 2010; Doherty and Clayton, 2011; Swim et al., 2011, Ford, 2012, Cunsolo Willox et al. 2012a, 2013a,b, 2014).

An emerging body of research with Inuit communities in the Canadian North has identified direct and indirect linkages between reported mental health challenges and the rapid changes in the land and environment (Cunsolo Willox et al., 2012a, 2013a,b, 2014). This scholarship has identified potentially heightened risk to climate change impacts in general and mental health in particular among youth; a large and rapidly growing segment of the Canadian Inuit population (Ford et al., 2006, 2008; Cunsolo Willox et al. 2012a, 2013a,b; Petrasek MacDonald et al., 2013a; Cunsolo Willox et al., 2014). Recent research has demonstrated that Inuit youth have observed changes in snow, ice, water, weather, wildlife, and vegetation and are aware of the impacts these changes have on their lives (Petrasek MacDonald et al., 2013a). However, the effect of these observations

on their mental health and well-being and, subsequently, the effect on youth adaptive capacity and resilience, has yet to be examined.

The impact of climate change on mental health will not occur in isolation. Several compounding stressors shape and challenge Inuit youth mental health including rapid acculturative change, housing overcrowding, low educational attainment, and high rates of poverty (Kirmayer et al., 2000, Lehti et al., 2009, Kral et al., 2011; Cunsolo Willox et al. 2014). Indeed, some of the highest rates of youth suicide globally have been documented among Inuit youth (Kirmayer et al., 1996; Kral et al., 2011). Given such high rates of psychological distress, it is important to understand the protective factors for youth mental health that can support resilience and adaptive capacity. This information, especially from a youth perspective, within the context of climate change could offer new pathways to resilience. Responding to this need, this paper identifies and characterizes youth-identified protective factors that enhance mental health and well-being, focusing on factors that are challenged by climatic and environmental change.

4.2 Methodology

4.2.1 Case study region: Nunatsiavut, Labrador, Canada

Nunatsiavut is the homeland of the Labrador Inuit. Located on the North coast of Labrador, Canada, it is the newest Inuit Settlement region in Canada, formed in 2005 (Natcher et al., 2012). Approximately 2,600 Inuit live in the region, living in five small and geographically remote communities (StatsCan, 2011a): Nain, Hopedale, Makkovik, Postville, and Rigolet (Fig. 1, Table 1). Geographically, the region covers a diverse range of landscapes from subarctic tundra to Northern boreal forest.

Inuit in Nunatsiavut and their ancestors have lived in the region for thousands of years and have experienced rapid social, cultural, economic, and political transitions linked to a history of colonization that involved forced relocation and residential schooling (Lehti et al., 2009; Richmond and Ross, 2009; Ford et al., 2010b, Natcher et al., 2012). However, having been settled by Moravian missionaries, French traders, and Norwegian explorers between 1735 and 1860, Nunatsiavut has a much longer history of European contact compared to other Inuit regions of Canada (Natcher et al., 2012). In all communities, subsistence hunting and trapping is practiced year-round on the land and on

the water, with trips to the family cabin and seal hunting occur year round, while the fall brings the berry-picking season along with the hunting season for ducks and geese. Ice fishing and trapping for fox, wolf, martins and other small animals is practiced throughout the winter. These activities collectively form part of 'being on the land,' and are a key part of life for Inuit in the region, and indeed across the North.

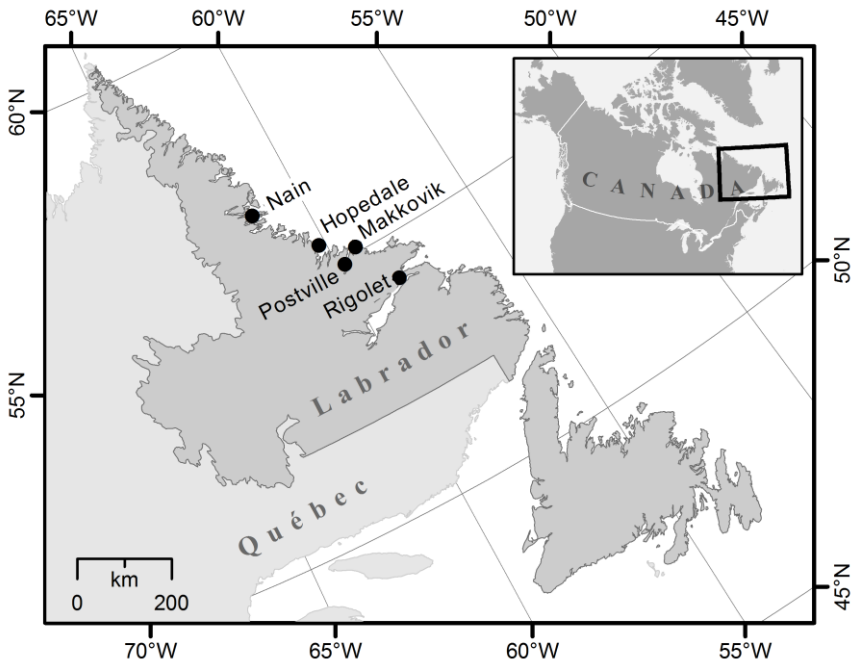

Figure 1: The five communities of Nunatsiavut, Labrador, Canada

Table 1: Geographic coordinates, populations, percentage of population that identify as Inuit, and percentage of population between ages of 15 and 24 for all five communities in Nunatsiavut (StatsCan 2011a,b)

Community	Geographic Co-ords	Population	% that identify as Inuit	% between ages 15 and 24
Nain	56°N, 61°W	1185	90%	19%
Hopedale	55°N, 60°W	555	90%	20%
Makkovik	55°N, 59°W	365	85%	15%
Postville	54°N, 59°W	205	90%	17%
Rigolet	54°N, 58°W	306	85%	13%

The regional economy also depends on wildlife harvesting, as do the people who rely on subsistence hunting and trapping (ITK, 2008; Natcher et al., 2012). Most available wage-employment in Nunatsiavut is within the government or service sectors. More recently, a nickel mine has become a source of employment. However, the issue of unemployment is felt strongly in all communities and many youth do not feel that there are adequate opportunities for wage employment that would allow them to stay and support themselves in their home community.

While there are no roads into or out of any of the communities, people can travel between communities in the winter by snowmobile, in the summer by ferry, and year-round by plane, but all these modes of transportation rely on good weather conditions. Furthermore, both travel on snowmobile and plane come at a high cost, which can further restrict mobility. Lack of access to the land can cause boredom and potentially promote alcohol and substance abuse, which pose a threat to individual and community mental health (Cunsolo Willox et al., 2013a,b). Although each community has an office for the Department of Health and Social Services, the smallest communities do not have regular access to mental health professionals and experience limited access to healthcare services in general, similar to communities across the North (Cunsolo Willox et al., 2014). In addition, as food must often be flown into the community, especially during the winter, the high cost of transportation influences the price of food, which challenges food security in the region.

Nunatsiavut has a large and rapidly growing youth population, with >40% under the age of 24 and 18% between the ages of 15-24 (StatsCan, 2011a). In addition to the extensive social changes, climate change has been emerging as an additional stressor, and youth in Nunatsiavut have been observing and experiencing climatic and environmental changes that connect to changes in vegetation, wildlife, travel, food security, and land-based activities, leading to concern for their Elders, challenges to cultural activities, knowledge transmission, hunting identity, connection to the land, and community connectedness, which has serious implications for emotional and mental health and well-being (Petrasek MacDonald et al., 2013a). The need for a regional study involving all five coastal communities in Nunatsiavut addresses the emphasis placed on mental health

as a priority for the Nunatsiavut Government and emerged from previous research conducted in specific communities (Cunsolo Willox 2012a, 2013a,b).

4.2.2 Data gathering methods

All data were gathered by Local Research Coordinators (LRC) in each of the five communities. The presence of the LRCs was imperative to providing local context and understanding in each community, and further embedded the project in the communities, building additional research capacities and ownership. All LRCs received training in data management, organization, and interview techniques by participating in a two-day workshop in Rigolet.

Between November 2012 and March 2013, the LRCs conducted in-depth, semi-structured interviews with 17 youth (ages 15-25). The small sample size is consistent with qualitative approaches where in-depth research is done to gain perspectives on place-based knowledge, understandings, and perspectives in climate change scholarship as well as in health and youth resilience literature (Stake, 2005; Allen et al., 2006; Ford et al., 2010a; Wexler et al., 2013, 2014). Furthermore, the small sample size allows for in-depth interpretation and analysis (Creswell, 1998). Important to this study was emphasis on rich, in-depth narrative data that allowed individual stories, wisdom, feelings, and experiences around community change and mental health to emerge. Therefore, semi-structured interviews, conducted in a conversational format, were used to gather data in a way that engaged participants in in-depth discussion and conversation that respected participant experiences, created a safe space for dialogue on sensitive issues such as mental health struggles, and offered opportunity for the interviewer to follow up and go into more detail on points of interest (Kvale, 1996).

In each community, between two and five males and females participated in an interview. These youth were students, town workers, hunters, carpenters, radio and TV producers, childcare workers, and parents. A random sample was not attempted; rather participants were chosen by the LRCs based on their connections to topics covered in the interview guide such as experience ‘going off’ on the land, participation in other cultural activities, and experience with land-based activities. Interviews were conducted in a location chosen by the interviewee, often in their home. All participants had the choice of

being interviewed in English or Inuktitut and all chose English. The LRC's used an interview guide that included 60 open-ended questions about time spent out at the cabin and on the land, observed changes including social, cultural, economic, and environmental, with a final section on health and mental health (Table 2). Demographic and personal information was collected at the end. The interview guide was based on previous research in Rigolet (see Cunsolo Willox et al., 2012a, 2013a,b) but the content and scope of the guide were expanded to be appropriate for a regional study and to focus on mental health indicators, based on psychological literature and protective factors. The interview guide was pre-tested on three different occasions, including with the project leads and LRCs, with health professionals, and with community members. All interviews were audio recorded with consent and then transcribed.

Table 2: Example of questions for the key themes covered by the interview guide.

Key Themes	Examples of Interview Questions
Land activities	Do you have a cabin? How does being out on the land make you feel? What does the land *mean* to you?
Mental health in your community	What do you *need* to be healthy? What does mental health mean to you? What do you think increases or supports mental health? What do you think are the biggest mental health challenges for your community?
Changes in your community	Have you noticed any changes in the ways that people interact or have relationships in your community throughout your lifetime? Have you noticed any changes in your traditions or ways of living in your community throughout your lifetime? Have you noticed any changes in the snow or ice throughout your lifetime? Of all the social, economic, cultural, and environmental changes we have just discussed, which do you think are *the most significant changes* for your community?
Emotional responses to changes in the environment	How do you *feel* about changes in the environment you mentioned above? What do you think these changes will be like in the future in your community? Do you think there is anything that can be done to *cope* with these changes? From what you know about climate change, do you think it could impact your mental health?

4.2.3 Data analysis

To qualitatively analyze the interviews, a constant comparative method was used to continuously compare emerging concepts and codes between and within interviews (Bradley et al., 2007). This involved first listening to the audio recordings of the interviews while reading the transcripts. During this initial review, transcripts were checked for accuracy and reflective memos were taken to record initial ideas, thoughts and observations about emergent concepts and relationships. A second review of interview transcripts involved identifying key quotes, developing detailed lists of descriptive concepts, and creating concept maps (Miles and Huberman, 1994; Denzin and Lincoln, 2005). Following this second review, the lists of codes and concept maps were expanded and condensed to best represent the data and then combined to identify major themes. Although the sample size is small, there was consistency among the youth responses, themes, and ideas that emerged, reaching saturation among responses and narratives. In February 2014, result-sharing workshops and open houses were hosted in each of the five communities to discuss and validate emergent themes and preliminary findings with participants, community members, and the LCRs.

4.3 Results

Five major themes emerged from the analysis that characterize interrelated protective factors that enhance mental health and well-being from a Nunatsiavut Inuit youth perspective: being on the land, connecting to Inuit culture, strong communities, relationships with family and friends, and staying busy (Fig. 2). While challenges to these protective factors were identified as various types of changes in communities, such as cultural change, economic change, social change, and environmental change, this paper focuses primarily on the environmental changes.

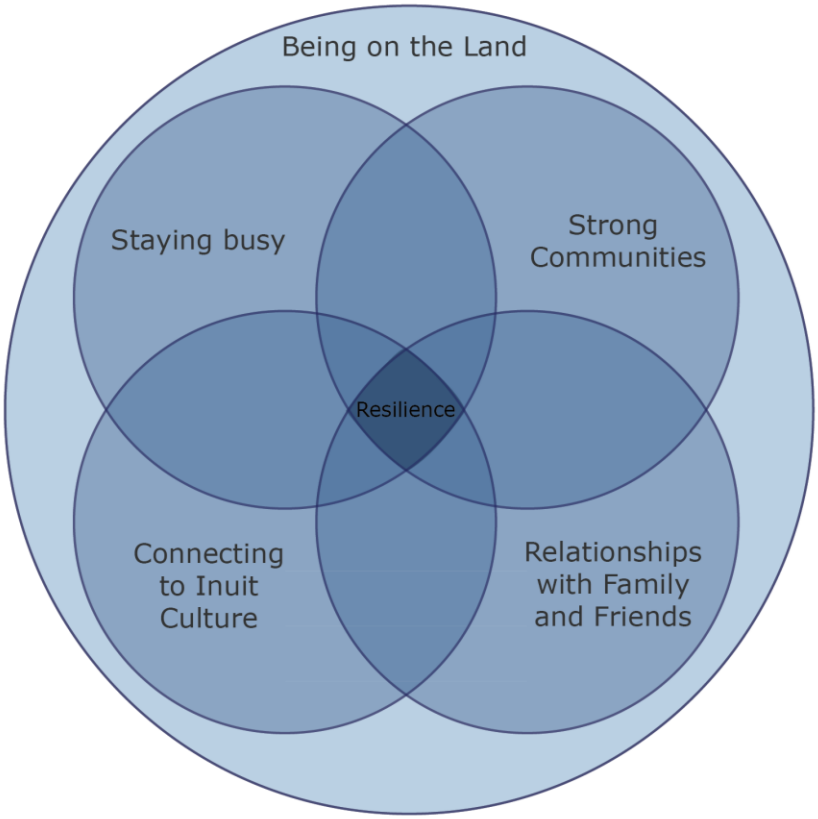

Figure 2: The five overarching protective factors that enhance resilience as identified by youth participants across Nunatsiavut. These protective factors are also pathways to one another.

4.3.1 Being on the land

Whether described as "going off", "getting away", "going out", or "on the go", youth participating in this study described being on the land as part of their identity and as one of the most important protective factors for youth mental health and well-being. As one young male hunter said, "It's always been part of my life being out on the land… it is pretty much a part of me." Another young male who works as a carpenter said, "It's where you grew up, and what you take in as a young person…It's not recreational; it's something you have to do." Multiple benefits of being on the land—their "second home"—were mentioned and associated with physical, spiritual, emotional, and mental health and well-being (Fig. 3). From a mental health and well-being perspective, youth here explained that the land is a healing and nurturing place where they can connect with

nature, with themselves, and with their ancestors. One young man in his late teens explained,

> Oh yes, [the land] can help you. It can soothe you and help you take things off your mind. You can go off wooding or something like that. And take your frustrations out on a junk of wood. Or you can go out hunting and fishing…I would rather be out on the land any day rather than being in the community. It makes me feel as good as I ever feel I think.

Both young men and women involved in this study described positive feelings fostered on the land. One young woman noted that, "At the cabin, if the weather is bad, it don't really matter. It don't bother you," suggesting that being out on the land can act as a defense against negative emotions that one would otherwise feel if they were in the community. A young man in his early twenties from another community said, "It's like restarting…restarting of life. Because when you go out and get that relaxation back and all this busyness off your back, you're ready to start over again."

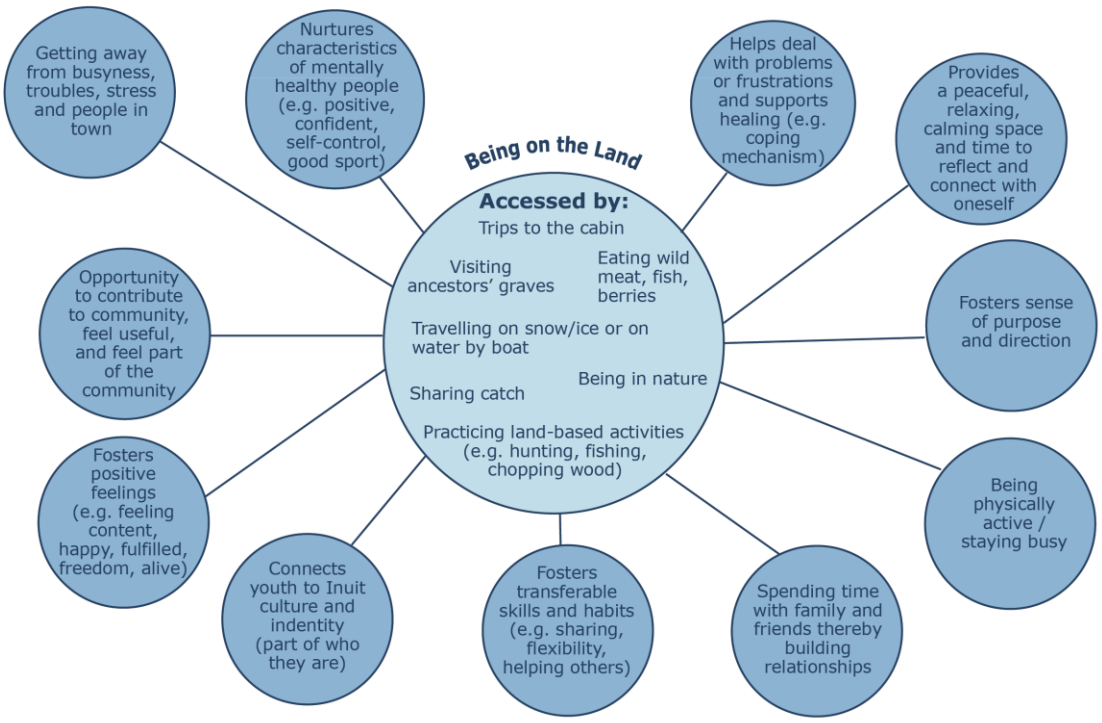

Figure 3: The protective factor of being on the land. The center circle describes specific pathways with which youth reported to access this factor. The smaller circles describe the specific ways through which being on the land enhances resilience and mental health and well-being.

One young woman mentioned the difference in behavior on the land compared to in town, pointing out that bad habits in the community, such as drinking, are not brought out on the land: “When we used to go out in boat from morning to night, there was no drinking, but as soon as you get back to [town], you started drinking.” She also noted that, “When we goes off to the cabin and stuff, we don’t take beer out there.” On the positive side, other participants explained that good habits and transferable skills like sharing and preparedness more often are learned and practiced on the land than in town. As one young male hunter said, “That’s another thing about [being on the land], makes you feel good too like, you know, sharing [my catch] with [my Grandfather] and stuff and other kids.”

Many of the characteristics that youth interviewed here affiliate with mentally healthy people, such as confidence and self-control, were characteristics that youth reported could be fostered and enhanced from time on the land. Youth also felt that the positive mental health benefits that they derive from being out on the land could extend to people not from the area. One participant said that a visitor to his community expressed that “they feel more in touch with themselves and nature here.”

In addition to being a protective factor itself, being on the land is a pathway that connects to several other youth-identified protective factors for mental health and well-being. Being on the land is an opportunity to be with and learn from parents and grandparents, practice important cultural and traditional activities, and connect to ancestors who lived on the land and, therefore, is a pathway to connecting to culture, spending time with family and friends, and staying busy. One young mother described the various protective factors she accesses from being on the land saying,

> [Being on the land] is important to me because, well as a small child I’ve always been out on the land with my family, so one thing why it’s important is that it’s almost like tradition to do things as a family out. It’s also important to me because it’s part of my culture, and it’s also important because the way you feel when you’re out on the land. It feels good.

4.3.2 Connecting to Inuit culture

Feeling connected to Inuit culture was identified as another protective factor for youth participants in Nunatsiavut because the culture encompasses important traditions, practices, and knowledge that connect youth to their ancestors, a collective, and an identity (Fig. 4). As one 15 year old said, "[Being on the land is] how people used to live before, so it's important to still do those things sometimes." Being on the land is one of the most important ways that youth interviewed here reported connecting to Inuit traditional culture and identity and "Keep[ing] the tradition alive" is important to Inuit youth in Nunatsiavut as their traditions and culture shapes memories, relationships, and identities, fosters important shared values like family, and promotes positive feelings. Many youth participating in this study stressed the importance of maintaining the traditional knowledge of the land by passing it on to younger generations. As one young mother said, "It's one of my biggest priorities is going off, and I wants to teach my girls too, so I wants to pass on our culture because it's something big, for me anyway, where [and] how I grew up."

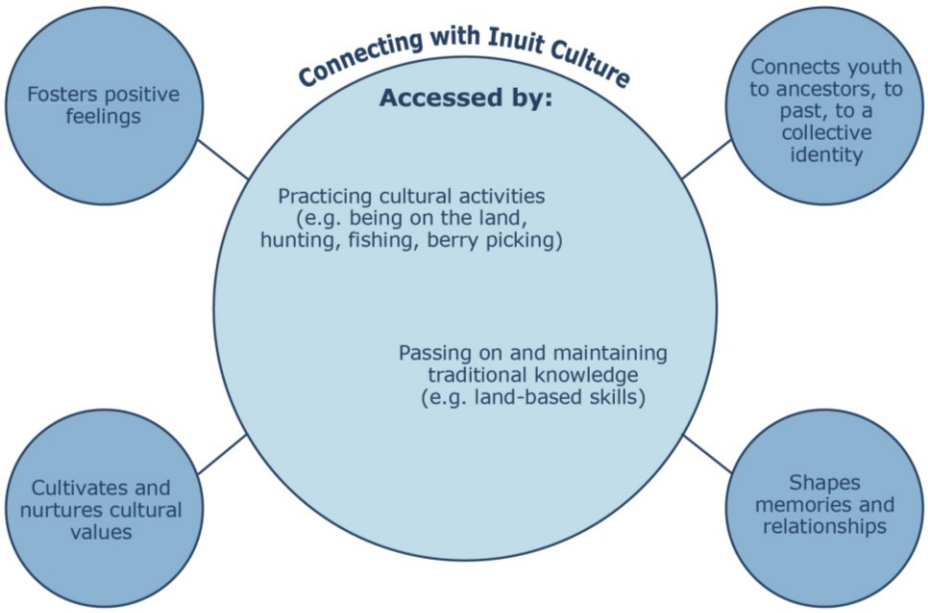

Figure 4: The protective factor of connecting with Inuit culture. The center circle describes the specific pathways with which youth reported to access this factor. The smaller circles describe the specific ways through which connecting to Inuit culture enhances resilience and mental health and well-being.

4.3.3 Strong communities

From the perspective of youth participants, community plays a particularly central role in Inuit health (Fig. 5); connectedness to others along with feeling part of a collective is of great importance to Inuit. As one young mother described,

> Inuit people have been a collective people, and families are huge and very important, so I think that our Inuit people need more support peoples, or they needs more connectedness to other people, and that just stems from history. I mean 'Inuit' means 'people' or 'the people'.

Close-knit communities where members are active, friendly, involved, helpful, caring, and considerate, where there are lots of opportunities for youth to connect with older generations, where there is visible interaction and socializing around town, and where children spend time outdoors with one another are considered features of strong, connected communities. According to youth here, strong communities offer a trusted support network, provide good role models, create a sense of belonging, and contribute to a sense of security and safety, all of which are key factors for dealing with mental health challenges and fostering good mental health from a youth perspective. One specific example of a coping mechanism supported by a strong community was informal visiting. One young mother explained, "I just, ah, take care of [my own mental health problems] by maybe go for walks, take my boy out to someplace, go visiting or stuff like that…".

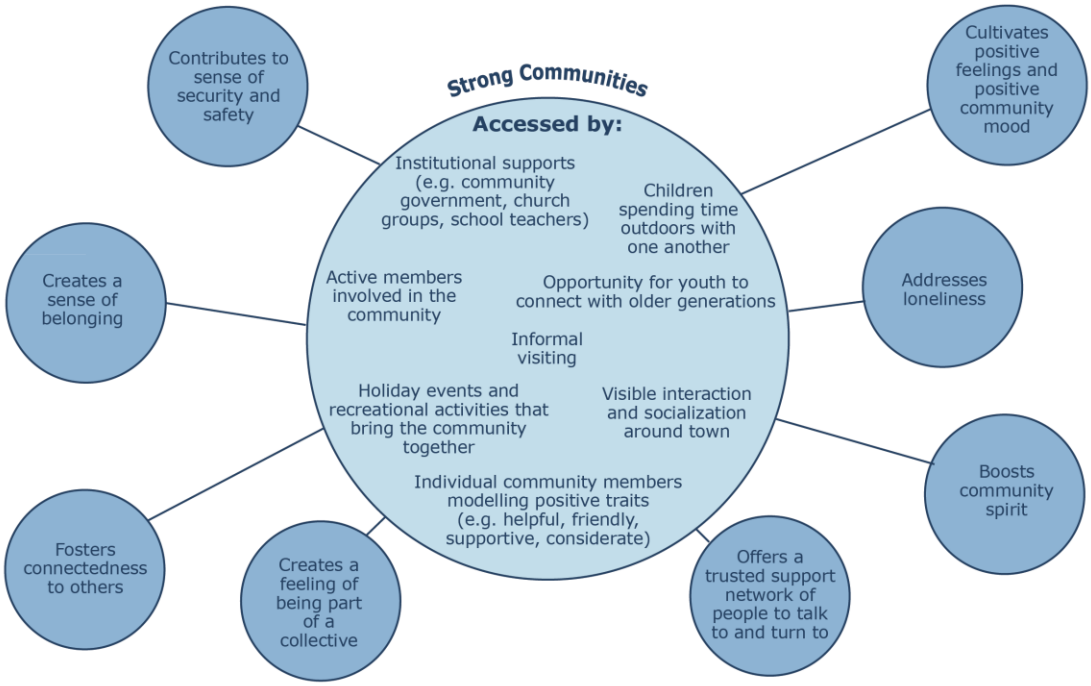

Figure 5: The protective factor of strong communities. The center circle describes the specific pathways with which youth reported to access this factor. The smaller circles describe the specific ways through which strong communities enhance resilience and mental health and well-being.

Many youth involved in this study expressed feeling community support, making comments such as, "Everybody is so nice all the time, you can talk to anybody, like if you're ever feeling upset or anything like that, they're there to help you." In addition to supportive individual community members, youth listed various institutional sources of support, such as the community government, church groups, and teachers at the school and gave examples to demonstrate community support such as the community freezer program. Activities that bring the community together such as holiday events or recreation activities were also highlighted as particularly important for maintaining a supportive community and promoting community wide well-being. As one high school student commented, things "like square dances when everyone comes together, we definitely feel better, like just being around people." Another youth explained that community get-togethers "boosts the community spirit, and everybody is together and really happy."

4.3.4 Relationships with family and friends

Parents, siblings, grandparents, and friends play a key role in contributing to positive mental health by being role models for youth and the people youth spend time with out on the land (Fig. 6). As one of the youngest youth in this study explained, "Loving others and having others care for you is part of what makes you healthy." Making jokes, and laughing with friends was also identified as central to well-being by creating a positive and happy atmosphere. "I'm always laughing, that's probably the best thing in the world, it's good for you and good for your soul too isn't it?"

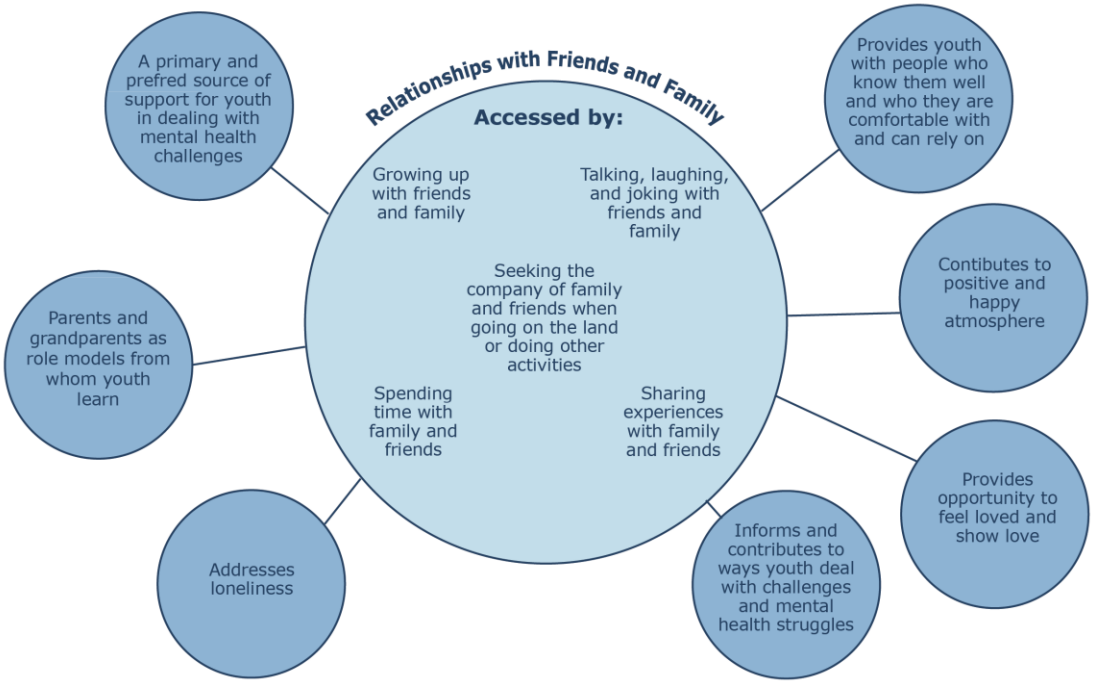

Figure 6: The protective factor of relationships with friends and family. The center circle describes the specific pathways with which youth reported to access this factor. The smaller circles describe the specific ways through which relationships with friends and family enhance resilience and mental health and well-being.

Kinship, sharing experiences, and feeling connected to others are embedded in the Inuit culture and many of the traditional activities are collective. For example, when explaining the seal hunt, one participant illustrated the importance of having a friend who is "my main person" to go with: "He's the gunner and I'm usually the driver like because it's a lot easier to hunt seals when you've got two people because like you've got to be

driving and like trying to shoot at the same time." A female hunter shared memories of going out with her group of friends:

> All summer, me and my friends would be hunting everyday…We'd be gone every day, and on the weekends we'd leave in the morning and we wouldn't come back until night, and if we weren't hunting, we were just riding around in the boat.

Beyond supporting positive mental health and well-being, family and friends also inform and contribute to the ways that youth deal with mental health struggles and challenges. One of the main coping strategies identified by youth participating in this study was spending time with family and friends. Youth here reported that they seek support from people they grew up with, who they are comfortable and close with, who know them well, who they trust to open up with, and who can be relied on as a familiar source of support. As one young male explained about his group of friends, "we've been buddies since we were young" and "They're like always supportive…they know they've got me there, I know I've got them there so it's like that." One of the youngest male participants who is still a student explained that important for his mental health is

> [to] have somebody who I can really trust to go to when I have problems…where it's actually deep, passionate [conversation] and you get to let lose and talk to them like everything that's going on currently and like what really eats you up inside and stuff and you get to let that out.

4.3.5 Staying busy

Staying busy and keeping active was described as a protective factor linked to increasing mental health and well-being for many reasons (Fig. 7). As one young student described,

> People who are out on the go usually seem to be more happy than people who just shut themselves away. I just know when I'm on the go, for myself, I'm more happy. When I'm like, I'm alone, you know, it just, it gets to you that you feel…loneliness."

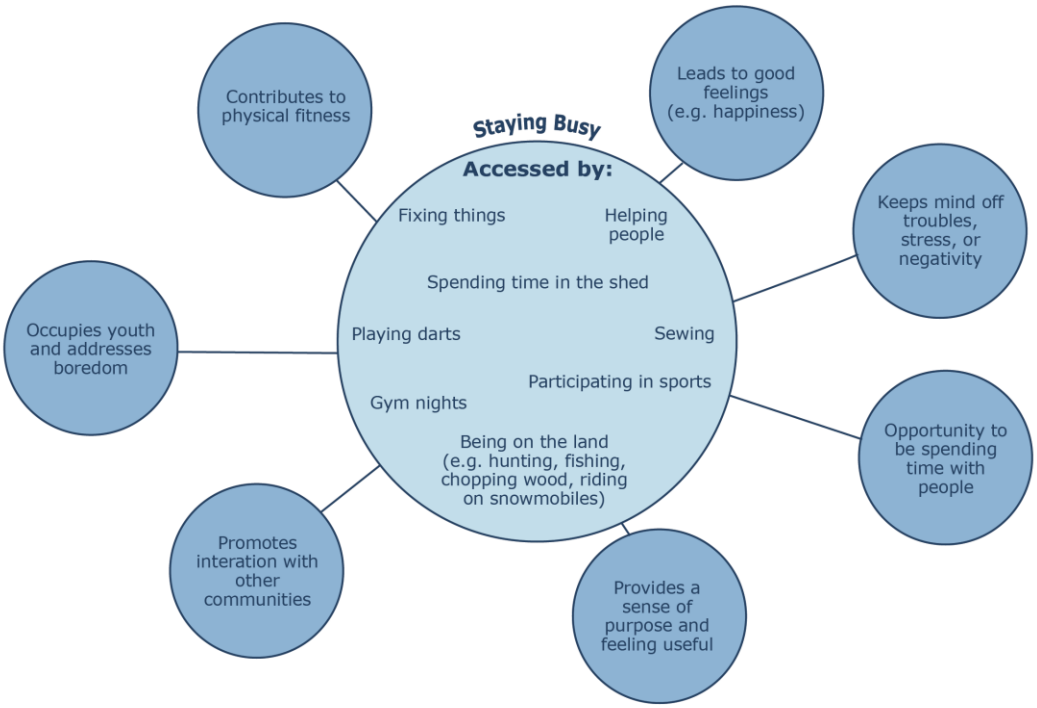

Figure 7: The protective factor of staying busy. The center circle describes the specific pathways with which youth reported to access this factor. The smaller circles describe the specific ways through which staying busy enhances resilience and mental health and well-being.

Being busy and active occupies youth and helps to keep one's mind off of troubles, stress, or negativity, leads to good feelings, provides a sense of purpose, addresses boredom and loneliness, and contributes to physical fitness. Youth interviewed here spoke about their parents or grandparents as role models for staying busy. One young male mentioned that his grandfather is always "fixing things, helping people, whatever he can do."

Most of the activities youth listed that keep them busy are social activities, such as sewing nights, gym nights, playing darts, or going to the cardio room, ball field, and outdoor rink. Being on the land and playing sports were particularly emphasized as the most common activities to occupy time. Being on the land to chop wood was mentioned several times by young male participants in comments such as, "I go out and get a load of wood with Dad, just cut down a few trees…The part of going away and doing something and coming back, fills you with like a real sense of you know, direction." This example

demonstrates how certain activities are also pathways to other protective factors such as feeling useful and a sense of purpose.

When youth can't be on the land, playing sports is the next preferred activity to keep youth busy, highlighted especially by the youth participants in Postville: "One thing we always do here is play sports, we play sports a lot…sports here can be a way of life." Sports in the communities also provide an opportunity to interact with youth from other communities through sports meets. Another important alternative to being on the land, specifically for men, is finding other ways to keep busy, such as doing maintenance or repairs of their snowmobiles, preparing furs, making snow shoes or komotiks (sleds to pull behind skidoos), or maintaining equipment for hunting and trapping. And a young woman from the same community noted that, "You see more men in the community, busy when the weather is [bad and they] can't get out. I think that men do find something else to do."

4.3.6 Challenges to protective factors posed by climate change

As one young hunter explained, "If the land changes, then everything else will change. The land affects people just as much as the people affect the land." Environmental and climatic change have been observed and experienced by youth in Nunatsiavut and are reported to challenge protective factors and their pathways. For example, a serious climate-change-related impact noted was restricted travel, especially in the spring and fall when safe access to the land is decreased due to changing snow and ice conditions (an observation also noted elsewhere – see Cunsolo Willox et al. 2012a, 2013a,b; Petrasek Macdonald et al., 2013a). This impact directly challenges opportunities for being out on the land, which jeopardizes other protective factors accessed by being on the land, such as staying busy, relationships with family and friends, and connecting to Inuit culture.

As one young male hunter explained, "You can't do the same things as you used to do before at the same time." For example, hunting and trapping schedules have had to change based on ice and snow conditions, trick-or-treating with friends on skidoo is no longer possible in October due to a lack of snow, and in the past few years trips to the family cabin at Easter have more frequently been cancelled due to poor ice conditions for

travel. These disruptions to outdoor activities and traditions that bring people together exemplify how climate change is challenging the protective factor of relationships with family and friends. Although it is possible to stay busy in town, youth interviewed here were concerned that younger generations, including their peers, are less likely to seek healthy alternatives when they cannot be on the land. A young female participant used her father and brother as an example explaining that her brother gets depressed when he is unable to go out on his snowmobile; if her father cannot go out to check his traps, he will find other ways to stay busy such as chopping wood. Youth here also worry that traditional cultural knowledge and land-based skills will not be maintained if youth are not able to be out on the land with older generations, which challenges the protective nature of connecting to Inuit culture.

Worry was one of many negative emotions fostered when protective factors are challenged by changes in climate and environment, along with boredom, loneliness, isolation, restlessness, fear, sadness, anger, frustration, stress, and anxiety. As one of the youngest youth commented, "Changes in weather hurts people because they feel helpless about something they care about, which makes them feel sad." Some of these negative feelings like boredom were associated with negative behaviours, such as alcohol and substance abuse. As one young woman commented, "That's what everyone who's drinking says – they drink 'cause there's nothing else to do. A lot of people smokes dope because it makes the day go faster. That's crazy, man. One of my friends always says that he smokes dope so that the day don't seem so long." Furthermore, many participants noted the impact of limited access to the land on families and the community. For example, one young woman described family impacts saying, "Sometimes I gets mad at my Dad [when I cannot get out on the land]." Other participants noted the impact of weather and land accessibility on the community mood with comments such as, "The mood was good in the community that winter [with a lot of snow] cause they could get where they wanted to go."

While youth participants directly recognized the mental health impacts of a changing climate, they also acknowledged that mental health impacts are only one of may interrelated effects of climate change:

> within climate change, there's all these other things changing – lifestyles changing, your food, your diet's changing, the way you interact with people. What if you always go to the cabin every weekend with your family? -- like that's changing if you can't get out. Like, climate change along with, like, so many other things in with it – interwoven in all that."

4.3.7 Adaptability

In response to the recognized challenges that environmental changes are having and will have on their lives, youth in Nunatsiavut show a great willingness to adapt and creative thought around how to respond. As a 16 year old male explained, "The way you cope with things really makes you who you are." As such, youth here felt that people with good mental health have strong coping and problem solving skills. Furthermore, a strong attitude of accepting change surfaced through comments such as "There's always going to be change…the world ain't going to stay the same forever," and "There are just some things where you have no control over; you can't control weather, like you have to make the best of it and adapt." Youth felt that their culture and communities embody a mentality of preparedness, adaptability, and resilience, characteristics that stem from a deep connection and respect for nature. As a young man in his early twenties explained,

> I think people in Nunatsiavut, we have kind of like a reputation for being a people that can adjust to whatever happens. Like, whatever happens, we just learn to deal with it. We kind of just move on to whatever's, you know. Like, we're not gonna…I guess the saying is 'cry over spilled milk'. Like, you know, if things get a little bit tougher or stuff like that, then we learn to deal with it.

Some of the adaptation strategies suggested by youth involved in this study to address impacts of environmental and climatic change included finding new places to go that are safely accessible, changing the timing of certain activities to correlate with good ice conditions (e.g. hauling more loads of wood over a shorter amount of time), hunting and trapping "in different ways or different times," providing support programs to get younger generations out on the land (e.g. land camps), and increasing activities in town. One young woman demonstrated creativity in adapting: "When I was desperately wanting to go on the land, to go off last time, I just put a tent on back of the house and had tea."

4.4 Discussion

Being on the land, connecting to Inuit culture, relationships with friends and family, strong communities, and staying busy are five protective factors that may, from the perspective of some youth in Nunatsiavut, enhance mental health and well-being as well as provide coping mechanisms for Inuit youth dealing with mental health struggles. Despite a small sample size, the findings from this research provide an important preliminary analysis of perspectives and ideas about key protective factors, and these identified factors resonate with and reflect known protective factors that have been documented to enhance and expand Indigenous youth mental health and well-being in communities across the Circumpolar North (Kirmayer et al., 1998; Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Bals et al., 2010, 2011a,b; Kral et al., 2011; Ford et al., 2012; Decou et al., 2013; Petrasek MacDonald et al., 2013b; Spein et al., 2013; Wexler, 2013; Wexler et al., 2013, 2014) (Table 3), adding further verification to the results. That said, given the sample size, caution should be used in generalizing these findings as these results may not be representative of all youth in Nunatsiavut or Indigenous youth across the Circumpolar North.

Table 3: Documented protective factors within Circumpolar Indigenous youth resilience literature that support and connect to the youth-identified protective factors in Nunatsiavut

Youth identified protective factors in Nunatsiavut	Documented protective factors in other literature from across the Circumpolar North
Being on the land	• Traditional knowledge, cultural values, and practice (e.g. eating country foods, being out on the land, doing subsistence activities)
Connecting to Inuit culture	• Native language learned at home and competence in native language • Ethnic pride • Cultural/ethnic identity and/or affiliation • Traditional knowledge, cultural values, and practice (e.g. eating country foods, being out on the land, doing subsistence activities, attending tribal events, listening to traditional stories) • Being committed to culture

Strong communities	• Sense of belonging in community • Sense of community connectedness • Positive role models and safe places • Supportive, caring encouraging, cohesive communities that show concern and reach out to youth • Strong relationships with community members • Continuous communication, talking, and interaction • Being committed to community
Relationships with family and friends	• Close relationship with parents • Role models • Transmission of expectations and values • Kinship structure (i.e. family connectedness and importance of extended family and adopted kin)
Staying busy	• Sense of purpose • Physical activity and active lifestyle • Staying busy

One example is the importance of strong communities, which is widely supported by Circumpolar research that identifies informal interaction as a youth-identified coping mechanism and protective factor, both broadly and within the context of suicide intervention and prevention (Mohatt et al., 2004; Allen et al., 2006; Wexler and Goodwin, 2006; Kral et al., 2011; Decou et al., 2013; Wexler, 2013; Wexler et al., 2013, 2014). Strong social networks, community connectedness, and relationships help to create and shape opportunities for youth to access other protective factors, such as staying busy, and are essential to creating positive environments that allow youth to feel part of a collective and nurture their relational beings (Allen et al., 2006; Wexler et al., 2014).

When discussing youth mental health and wellness, protective factors were often documented in the context of the challenges that they address. For example, when highlighting the importance of staying busy, being on the land, or spending time with family and friends, youth in this study often referred to these factors as coping mechanisms for loneliness and boredom. These feelings were widely discussed by youth herein as mental health challenges of living in small, remote communities and connected to issues such as alcohol and substance abuse. The challenge of boredom and its potential relationship to substance abuse is not unique to Nunatsiavut. Indeed, boredom has been identified as a struggle for youth in other Circumpolar regions such as Alaska (Wexler and Burke, 2011; Wexler et al., 2013, 2014) and drug and alcohol addictions have been

found to be increasingly and negatively impacting the social environment within Northern communities (Richmond and Ross, 2009). While youth struggles with boredom may be a function of age (i.e. younger people desire to be more active), another aspect that might amplify this challenge may be the changing expectations and interests of youth who seek to maintain traditional practices and lifestyles while also holding a western mentality (Wexler et al., 2013).

Environmental and climatic change is another compounding stressors challenging youth well-being and resilience (Cunsolo Willox et al., 2012a, 2013a,b; Petrasek MacDonald et al., 2013a). One impact of these changes is not being able to travel on the ice. All of the youth-identified protective factors that connect to, and in some cases depend on, accessibility to the land and as such, restricted land access greatly impacts protective factors and pathways to enhancing youth mental health and well-being as well as coping mechanisms for those struggling with existing mental health challenges. For some factors such as being on the land, there may be a period of time where this factor is not at all accessible due to poor travel conditions. In other instances, youth can still seek alternatives. For example, although being on the land is the preferred option of staying busy, other options such as playing sports exist and are not as dependent on weather or land conditions. The main gender difference in the data was in relation to how men and women stay busy when in town. Both male and female youth, particularly in Postville, commented on how men occupy themselves in their sheds by fixing things, chopping wood, doing snowmobile maintenance or repairs, or preparing equipment for hunting or trapping if they cannot be out on the land. The ways in which women occupy themselves in town was not discussed in the interviews. Alternative activities to being on the land are especially important during the spring and autumn seasons when sea ice is forming or breaking up and challenges to land-dependent factors are particularly prominent.

While healthy alternatives to being on the land exist, the participants in this study described the importance of the land for youth resilience, and research with people of all ages in Rigolet, Nunatsiavut supports this finding and has shown a deep connection to place and nature held by people in the community nurtured by spending time on the land (Cunsolo Willox et al., 2012a, 2013a,b). The land is also an important for Inuit cultural heritage and expression; indeed, youth participants identified that they gain fulfillment

and a sense of direction, among other benefits, from subsistence and cultural activities and this importance of culture and cultural identity has been identified in other Circumpolar youth resilience research (Lehti et al., 2009; Kirmayer et al., 2011; Wexler and Burke, 2011; Wexler et al., 2013). Specifically, youth recognize the importance of teaching and learning traditional knowledge and land-skills, but are concerned that less intergenerational knowledge transfer is occurring because of environmental and social changes facing their communities (Pearce et al., 2010, 2011). Therefore, one important component of support programs from a youth perspective is providing culturally relevant opportunities. Although the youth in this study can identify other ways of connecting to culture, limiting access to the land is viewed as a large challenge to practicing culture and thus a barrier to accessing an important protective factor.

Rapid environmental and climatic change in the North is projected to continue and, as such, youth will continue to interact with stresses and changes, both climatic and non-climatic, (IPCC, 2014). However, as change becomes more normalized and anomalous conditions become more common, the stress from these changes on youth mental health and well-being may be reduced. Indeed, research with Inuit hunters in Nunavut has demonstrated significant social learning and acceptance of new norms, underpinning adaptive capacity to manage change (Ford et al., 2009). Considering the temporal dynamics of resilience and change, as well as the importance of the land for youth protective factors, key questions from an adaptation perspective that arise from this work are: can land based activities be continued in light of inevitable changes in climate and if so how? If not, what transformative change is required and what are the implications of such change on the lives of youth? Furthermore, if land activities cannot be maintained, is promoting land-based activities such as youth-Elder land camps ultimately maladaptive?

When discussing anticipated impacts of climatic and environmental changes, youth participants demonstrated great confidence in their culture and communities to deal with change. Youth highlighted the longstanding resilience and adaptable nature of Inuit culture and communities. While adaptability was not mentioned in the context of enhancing mental health or well-being, and as such is not a *youth-identified* protective factor, flexibility is an important aspect that has been observed to contribute to adaptive

capacity among Inuit communities (Ford et al., 2008; Laidler, et al., 2009; Wenzel, 2009; Pearce et al., 2011) and, therefore, the flexibility and willingness to adapt shown by youth in Nunatsiavut may be considered a protective factor that enhances youth mental health and resilience, specifically in the context of climate change.

These five youth-identified protective factors are among other important attributes that can individually and collectively contribute to fostering resilience and building adaptive capacities to assist Northern youth in responding to or coping with the rapid environmental changes facing their communities. Indeed, three key determinants of adaptive capacity that have been documented by climate change adaptation work in the Canadian Arctic include traditional knowledge and land-based skills, strong social networks, and flexibility to respond to change (Ford et al., 2008; Laidler et al., 2009; Wenzel, 2009; Pearce et al., 2010, 2011). These determinants are directly supported by, and supportive of, youth-identified protective factors and therefore building adaptive capacities can occur at the same time as promoting protective factors. For example, traditional knowledge and land-based skills are supportive of connecting to Inuit culture and are supported by being out on the land.

Developing programs, services, and interventions within adaptation research and planning that incorporate and support one or more of the youth-identified protective factors, such as being on the land, developing relationships with friends, or connecting to Inuit culture, can provide youth more opportunity to access these factors which can lead to enhancing youth mental health and well-being in these communities as well as build adaptive capacities. However, as access to the land continues to be threatened by climatic and environmental change, creative alternatives that support protective factors will be needed. For example, more activities available in town, such as sports opportunities or learning cultural skills like sewing with seal skin or moosehide, making snow shoes and komotiks, or learning Innutitut, could provide youth with opportunities to stay busy and develop relationships with friends and community members (c.f. http://www.youtube.com/watch?v=EAulcH3uXnc).

In order to ensure that programs and services are responding to youth-identified challenges such as diminished community connectedness, and in order to equip youth with the necessary skills, resources, and strategies to access protective factors and deal

with change, adaptation efforts need to consider, respect, and incorporate youth thoughts and take direction from youth through meaningful and engaging approaches such as school programs, youth councils, youth-created digital media projects, or youth-focused workshops where young people are asked what matters most to them, what they want to see in their communities, and how programs and services can be developed to address their needs and desires. Only when youth are meaningfully engaged in such discussions can programs be developed that truly reflect their values and perspectives. Collaboration from diverse stakeholders including school staff, town workers, researchers, health professionals, and community members, both young and old, is also necessary to mobilizing multiple ideas, skills, and resources (e.g. infrastructure, funding) that can contribute to shaping positive and productive youth programs and opportunities.

Interestingly, there was little age, gender, or community variation in the responses. This lack of difference is indicative of the importance of these factors and shows strong resonance for the youth in this study across the region. Furthermore, while we cannot say that the protective factors that emerged in this research are representative of all youth in Nunatsiavut (or Inuit youth across the North), the Nunatsiavut identified protective factors resonate with other places and strongly tie into resilience research and protective factors identified in other communities in the Canadian Arctic (Kral et al., 2011; Kral, 2012) and Alaska (Wexler et al., 2013, 2014) continuing research that shows a strong set of protective factors for Circumpolar Indigenous youth.

As this work and research advances, it must recognize and consider the context that is shaping youth mental health and well-being including the changing socio-cultural context of communities as well as the health and economic disadvantages and inequities facing Northern residents among other pressing issues (Richmond and Ross, 2009). Understanding and focusing attention on youth-identified protective factors and how they are interconnected can contribute to informing and creating effective, robust, and sustainable adaptation and resilience strategies, programs, research and policies that directly incorporate elements to foster youth resilience, enhance adaptive capacity, and support youth protective factors to deal with current and future change. Resilient youth contribute to building strong communities and at the same time communities shape youth resilience. As human dimensions of climate change research moves forward and

continues to examine and evaluate adaptation responses, researchers should intentionally aim to support the protective factors described here through interventions that address community and youth priorities and foster a prepared and resilient youth population with the strength, capacities, and resources to respond to continuous change.

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CHAPTER 5: CONCLUSION

As Arctic Indigenous youth continue to grapple with interacting social, cultural, economic, political and environmental changes that characterize much of the North, building and fostering youth resilience and adaptive capacities is crucial for supporting young people in dealing with the challenges and pressures that they now face and will continue to face into their future (Lehti et al., 2009; Kral et al., 2011; Petrasek MacDonald et al., 2013; Wexler et al., 2013, 2014). Understanding and supporting the well-being of youth populations should be prioritized as a research goal in regions such as the North where youth represent an at-risk and substantially large subset of the population. Identifying protective factors that enhance resilience and provide coping mechanisms to deal with challenges and change, specifically from a youth perspective, is needed for youth-focused resilience programming and adaptation research, policy, and action. The research presented in this thesis responds to this need by bringing out Northern youth voices, perspectives, and opinions to expand our understanding of protective factors and pathways that foster youth resilience and support youth protective factors to deal with change, specifically climate change.

The three manuscripts that form this thesis collectively explored protective factors underpinning resilience and adaptive capacities of Canadian Inuit youth and have begun to identify pathways to access these factors. These findings highlight the necessity of acknowledging the complex, interwoven web of connections within and between protective factors and pathways. Furthermore, understanding the various levels (i.e. individual, family, and community) at which protective factors are accessed illustrates the role communities and families play in shaping youth resilience.

In particular, this thesis draws attention to the importance of the land as a protective factor and pathway to other factors that support mental health and well-being, particularly for Circumpolar Indigenous youth. Changing sea ice and weather conditions are reducing access to the land and increasing the danger of land-based activities, thereby impacting land-dependent protective factors such as being on the land, which is one of the strongest Inuit youth-identified protective factors and pathways. In light of current and projected rapid environmental change, alternative approaches to fostering protective factors must be examined. The research findings from this thesis highlight the promise

for youth-led multi-media projects, such as participatory video, as one alternative approach to enhancing youth resilience. It was discovered that the participatory video project was able to engage youth in a process that fosters known protective factors that enhance youth resilience such as pride, ownership, and connection with older generations without having to access the land.

The protective factors and pathways identified in this research resonate with resilience research across the North (Mohatt et al., 2004; Allen et al., 2006; Bals et al., 2010, 2011; Kral et al., 2011; Wexler et al., 2013, 2014). The overlap between protective factors identified by Nunatsiavut youth and those identified by researchers, communities and youth in other Northern regions such as Alaska and Norway points to Circumpolar-wide protective factors that can be applied to Indigenous youth across the Arctic. Therefore, communication and collaboration across the North should be encouraged to promote opportunities for communities to share best practices for youth resilience programming and learn from one another. Knowledge translation between Inuit youth, communities, and researchers across the Canadian Arctic, and more broadly across the Circumpolar North, could contribute to expanding and enhancing current understandings of the connection between mental health/well-being and climate change important for adaptation efforts.

Creating opportunities and environments where youth can successfully navigate challenges, adapt to changes, and enhance their resilience can, in turn, contribute to building and maintaining mentally healthy communities. Youth perspectives on resilience and adaptation programs are crucial to developing appropriate support for adapting and coping with multiple stressors, be they social, economic, or environmental. The research findings presented in this thesis bring attention to the important role of meaningful youth engagement for informing locally-appropriate and culturally-relevant adaptation resources, programs and community resilience strategies. In responding to youth-identified needs and desires that support mental health and well-being, programs and services must consider and incorporate factors that enhance youth well-being, nurture youth capacities to respond to change, and cultivate further opportunity to access protective factors.

The research methodology and data in this thesis contribute to the ever-expanding understanding of Circumpolar Indigenous youth resilience from the Canadian Inuit youth perspective. Furthermore, important insight on pathways and approaches to fostering protective factors that can be incorporated into climate change research is provided. Incorporating these findings into research can stimulate active and authentic involvement of youth while at the same time contribute to building and enhancing youth adaptive capacity in communities by promoting protective factors such as ownership over adaptation strategies, opportunities to keep youth busy, and intergenerational interaction. In moving forward, climate change adaptation research should seek to explore locally-specific and culturally-appropriate practices with Northern Indigenous youth to engage young people in the development of adaptation strategies. Only when youth are involved and meaningfully engaged will resilience and adaptation efforts be effective and sustainable.

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