

EXPLORING RESILIENCE AND MENTAL HEALTH AMONG CANADIAN INUIT
YOUTH: UNDERSTANDING WELLNESS AND PILOTING A PREVENTION PROGRAM

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Abstract

Canadian Inuit youth in Nunavut struggle with higher rates of depression and suicide in comparison to youth in other parts of the world, yet accessible mental health services are lacking in the territory. The current project was comprised of three studies. Study 1 examined the accessibility and effectiveness of an e-intervention program, SPARX. SPARX was developed in New Zealand in collaboration with Māori communities, with the goal of supporting Māori Indigenous youth in decreasing symptoms of depression and boosting resilience. A modified randomized control trial was used to evaluate the effectiveness of SPARX in Nunavut with 49 Canadian Inuit youth across 11 communities. Outcome measures assessing: 1) symptoms of depression; 2) symptoms of hopelessness; 3) cognitive emotion regulation strategies; and 4) resilience were assessed. T-test and Anova statistics suggested that participating Canadian Inuit youth experienced less hopelessness and enhanced cognitive emotion regulation strategies after engaging in SPARX. No statistical changes in depression or resilience were noted. Study 2 used focus groups to gain a qualitative understanding of Canadian Inuit youth's experience with SPARX. Youth from Study 1 participated in the Study 2 focus groups. Focus groups were recorded and transcribed, and coded using inductive thematic analysis. Results suggested that youth found the intervention engaging and interactive, and though it aligned well with youth culture, there was a reported desire for a more culturally appropriate version of SPARX. Study 3 used focus groups, across four communities in Nunavut, to delve deeper into the understanding of mental health and mental illness among Canadian Inuit youth. Youth and Elders in four communities were recruited to participate in these focus groups. Focus groups were recorded and transcribed, and coded using inductive thematic analysis. By engaging Elders in conversations about Canadian Inuit history, traditions and current barriers to accessing mental health programs,

youth were able to explore what wellness means, and how they believe they can better support their own, as well as their community's wellness. Results suggest that youth and Elders alike desire a return to cultural roots in order to build capacity and harness wellness, as well as a need for more intergenerational communication between Elders and youth. Overall, the three studies comprising this project support the need for further understanding of mental health programming desired by Canadian Inuit communities. It will be important to harness the Canadian Inuit culture, and to create family and community-based programming to help support youth with their mental health needs. Breaking down stigma associated with accessing mental health support will be an important advancement for the promotion of wellness in Canadian Inuit communities.

Foreword and Acknowledgments

The writing of this dissertation has taken place primarily on the traditional territory of the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples. Tkaranto (Toronto) is home to First Nations, Inuit and Métis peoples. I worked first with Indigenous communities in Toronto during my Masters' research. The women and children I connected with taught me about the strengths they possessed and the hardships they'd faced. They showed me that strength comes from learning, connecting, trusting, loving, and building. I am endlessly thankful to these women for giving me the strength to believe in myself and engage in the current project.

This project, above all else, owes its' gratitude to the people of Nunavut. Throughout the five-year tenure of this project, there have been a multitude of Canadian Inuit peoples, young and old, who have shared their stories, made their voices heard, articulated their thoughts, provided their guidance, and expressed their creativity. They have been brave in participating in this project and have contributed to the important work of understanding themselves, their communities and their traumas. They explored the best ways to reconcile their hurt and achieve wellness. It is with utter appreciation that I thank the Inuit peoples of Nunavut, not only for their shared knowledge, but for accepting me and guiding me in each step of this project.

My first experience in Nunavut was working with community members online, primarily via phone or Skype, without ever having met [in person] the highly creative, innovative, and thoughtful youth and facilitators I was connecting with. Despite this, each shared with me their insights, advice, stories, and helped me gain a fuller understanding of the communities I was newly navigating. When I first went to Nunavut to meet with youth and community members, I was nervous. I was not sure how to be the respectful researcher I wanted to be, I was not sure

how to build strong and trusting connections, I was not sure that community members, in turn, would want the shared relationship with me. It was, to my greatest thanks, that I was greeted in every community with warmth, love, interest, and hopefulness. Community members taught me how to connect in a way they valued. They shared their stories, they showed me their homes, they taught me about their legends, and they introduced me to their food. Community members explained that the understanding I sought from them was sensitive, and that I needed to gain trust. They taught me the value of building relationships and earning that trust. I became a fuller, more grounded, respectful, thoughtful, reflective, honest, and warm researcher because of what they taught me. For this I cannot express enough thanks. Though I am endlessly thankful to all Inuit peoples in Nunavut for contributing, with such vulnerability, their shared stories and shared histories, I want to specifically offer my appreciation for community members in Pangnirtung, Baker Lake, Pond Inlet and Cape Dorset, with whom I learnt to gain trust and build relationships that will be long-lasting.

Throughout the writing of this project, Canada has been going through a major process in reconciling with Indigenous communities. The Truth and Reconciliation Commission of Canada has been doing important work in communicating with Indigenous communities and learning how to resolve past wrongdoings by the Canadian government. This work is not over, and it is my hope that Indigenous communities across Canada continue to feel valued and respected by all Canadians, and that they receive the apologies they so deserve. It has also been a poignant time in Canadian history with the Missing and Murdered Indigenous Women and Girls inquiry. Again, although a final report has been published, it is my hope that this work continues and that the brutality and racism faced by Indigenous people as a whole, and women specifically, is at the

forefront of attention, that policy makers refuse to do anything but their best, and that Canada steps up to make a change.

To Dr. Yvonne Bohr, my supervisor and co-explorer, thank you. I owe this project, its success and ingenuity to you. You have spent years fighting for this work, have taught me about resilience, perseverance, strength and hope, and I admire you for that. Thank you for your endless encouragement, words of wisdom, guidance and drive. I have learnt to be a stronger, more determined, thoughtful, and critically reflective researcher under your tutelage. In our seven years together, I have been fortunate enough to explore Nunavut with you, taste new foods, admire (and on occasion take home) beautiful art, celebrate the successes of past and present lab members, and learn about the incredible strength and motivation so apparent in Inuit communities. I cannot thank you enough for providing me with these opportunities, and for your commitment to me and this project. I am honoured, proud, enthusiastic, while at the same nostalgic and anxious to be moving on to the next steps in my career.

To my committee members, Dr. Jennine Rawana and Dr. Jennifer Jenson, your guidance and support throughout the past years has been instrumental. Your experience with the SPARX project, and what you bring with it, whether it is previous work with Indigenous communities, or a greater understanding of e-interventions, has taught me so much about myself, my writing, my goals and the type of work I believe in. Thank you for your problem-solving, guidance, insight, and most of all, for believing in me. Your help with this process has been invaluable.

I am endlessly fortunate and privileged to have so many great friends and an incredible family who have provided me with unfailing love, friendship, support, encouragement and guidance. I would not have had the determination to continue if I did not come home to your listening ears and open arms at the end of it all. Thank you from the bottom of my heart.

Positioning of this Researcher

I am a white Jewish woman of European descent. My paternal grandparents were from Poland. During World War II, my grandfather joined the Army, while my grandmother was taken to a concentration camp and later transferred to a working camp. They were the only members of their families to survive the war. After the war, they made their way to Israel, mostly by foot, and met on the way. My father was born in Israel, and his family moved to Canada when he was five years old. My maternal grandmother was born in England, and she too moved to Canada after the war, where she met my grandfather, who had grown up in Montreal. My parents met in Montreal, and had a deep interest for exploring other cultures. Shortly after I was born, my parents moved to Barbuda, a small Caribbean island, for one year while my father volunteered as a doctor. As a family we returned to Barbuda three more times in my first 12 years of life. As a result, I cultivated an interest in the roles that individuals, communities and cultures play in resilience and mental health. In graduate school, I became keenly aware of a population of Canadian youth who struggled with greater rates of depression and suicide compared to other youth in Canada. My graduate program in clinical psychology had trained me to understand mental health supports as immensely helpful, meaningful and lifesaving. Knowing Canadian Inuit youth lacked access to the same mental health supports, I felt empowered to further explore inherent resilience in this community. I recognize the many limits of being a white researcher in Canadian Inuit communities, and I hope that the future better supports Canadian Inuit youth and their communities to conduct research purely based on their own questions, desires, and curiosities. In the meantime, I hope this study helps to make a small contribution to a much larger ongoing effort to allow for Inuit youth to feel safe discussing their difficulties, accessing supports and pursuing their dreams.

Understanding this Document

This dissertation is comprised of three studies. Studies 1 and 2 were taken on by this researcher as part of a larger initiative that was funded by The Government of Nunavut (GON). The GON became involved in this project with the goal of better understanding the effectiveness of a prevention program for youth depression, SPARX. SPARX was developed in New Zealand by a team at the University of Auckland in order to help treat depression with Māori Indigenous youth. The GON wanted to assess whether SPARX would be an effective prevention program for depression with Canadian Inuit youth. There were many restrictions involved in completing Studies 1 and 2, which were implemented to meet funding guidelines, timeline constraints, and a need to duplicate, as closely as possible, previously completed trials of SPARX in New Zealand. The concept for Study 3 emerged after having completed Studies 1 and 2, based on additional questions this researcher developed after speaking with youth. This researcher decided it was pertinent to delve further into the symptoms of depression and how wellness is understood by Canadian Inuit communities. It did not seem possible to explore tailored prevention or intervention programs for these communities without this understanding. Study 3 was funded through a Canadian Institute for Health Research Grant acquired for the development and promotion of a culturally acceptable form of SPARX for Canadian Inuit communities. It was further funded by this researcher's Canadian Institute for Health Research scholarship.

Though Study 3 was conducted with the most bottom-up and culturally appropriate approach of all three studies, and makes the most sense as the first study to read from a theoretical perspective, this dissertation is written in chronological order. As such, more culturally appropriate information and research protocol emerge as the dissertation continues. The Introduction, Overall Discussion and Future Directions apply to all three studies.

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Introduction

Overview

Canadian Indigenous youth, and specifically Canadian Inuit youth, are at a greater risk for developing mental health concerns than non-Indigenous youth. In fact, Canadian Inuit youth in Nunavut face some of the most significant mental health concerns of any youth globally with some of the highest rates of mood disorders and suicidal activity (Kirmayer, Gone & Moses, 2014). Despite these serious challenges, the mental health of Canadian Inuit youth has historically not been a priority for Canada (Boksa, Jooper, & Kirmayer, 2015; Feathers of Hope, 2014; Truth and Reconciliation Commission of Canada (TRCC), 2015), but this is slowly changing. The work of the Truth and Reconciliation Commission of Canada has initiated the holistic process of responding to the harm done by the residential school system by engaging responsible community and governments in reconciliation and attempting to restore inter-cultural relations. As a result, awareness of psychological challenges Canadian Inuit youth are facing are also on the rise. Canadian Inuit people's mental health is currently gaining more attention from policy makers, the media and mental health practitioners than it has received historically (Niezan, 2013; TRCC, 2015). However, funding for culture-specific mental health initiatives continues to be limited, short-term, and is mostly directed to areas that are experiencing crises, while many small and isolated communities continue to struggle with access to services (Boksa et al., 2015; TRCC, 2015). It is critical that, as a society, Canadians commit to increasing culturally appropriate resources for the promotion of youth wellbeing within this population.

The current research focuses on the results of a pilot evaluation in 11 communities across Nunavut, of an innovative intervention that was designed to support the mental health, specifically depressive symptoms, of youth. The pilot initiative presented here evaluated the

effectiveness of SPARX, a computer-based Cognitive Behavioural Therapy (CBT) program that had previously been used with Māori youth in New Zealand and Australia, in preventing and alleviating depression amongst Canadian Inuit youth. The study further addresses the dearth of knowledge about mental health and wellness in Canadian Inuit communities through focus groups designed to provide insight into culturally focused conceptions of wellness. These focus groups were conducted with youth and Elders in four Nunavut communities.

The current research is comprised of three distinct parts (Study 1, Study 2, Study 3), which are elements of a larger territorially and federally funded research initiative. The community-based pilot initiative (Study 1 and Study 2) that forms the basis of this study involved collaborations with the Government of Nunavut, eleven Nunavummiut communities, the Qaujigiartiit Health Research Centre in Iqaluit, the LaMarsh Centre for Child and Youth Research at York University, and the Werry Centre for Child and Adolescent Mental Health at the University of Auckland in New Zealand. The first goal of the pilot initiative (captured in Study 1) was to assess SPARX, a computer-based intervention, for its effectiveness as a preventive tool for youth depression in Canadian Inuit communities. The second goal (captured in Study 2) was to understand the cultural fit (or lack thereof) of SPARX within these communities. Through discussions about SPARX with community members, participants from Study 1 and 2, and research team members, a third goal (captured in Study 3) was developed, which aimed to understand the context of mental health and wellness generally within the Canadian Inuit youth population. Study 3 was guided by a model for examining the influence of historical trauma and contemporary struggles on Canadian Inuit youth mental health.

The current initiative as a whole, aims to contribute to an understanding of the experience of and perceived contributors to wellness among Canadian Inuit youth in the context of an often misunderstood and under-acknowledged crisis of mental health.

Background

Frameworks for understanding the mental health of Canadian Inuit youth. Suicidal activity among Canadian Inuit youth undoubtedly is a complex problem with many contributing factors, with mental health concerns, and specifically depression being at the forefront (Alsaker & Dick-Niederhauser, 2006). With such inordinately high rates of depression and suicide, Nunavut has declared a public health emergency for the territory. Due to the dearth of mental health resources available in the territory, services have historically focused on intervening when suicidality reached a crisis, and in many ways mental health needs continue to be addressed in this fashion, with a shortage in preventative services (Boksa et al., 2015; Kirmayer, Boothroyd, Laliberté & Laronde Simpson, 1999). Many reasons for the continuation of systemic disadvantages leading to mental crisis in the territory (overcrowded housing, over-representation in child-protection services, resource inequality, breakdown in cultural knowledge) are rooted in Western, Eurocentric, and colonized traditions, which continue to be destructive to Canadian Inuit communities. Understanding why and how mental health crises develop in Canadian Inuit communities should then be at the forefront of any mental health inquiry with Northern communities, in full collaboration with the communities. To answer the why and how, research and reviews of Canadian Inuit-specific mental health difficulties must be conducted in culturally fitting ways.

The Two-Eyed Seeing Framework (Bartlett, Marshall, & Marshall, 2012; Iwama, Marshall, Marshall & Bartlett, 2009) is a framework for conducting research with Indigenous

populations. The Two-Eyed Seeing Framework was developed by Mik'Maw Elders, Albert and Murdena Marhsall, to propose that bridging Indigenous knowledge with Western knowledge can support greater understanding and knowledge mobilization. It was initially applied to a Canadian Mik'Maw population, and has recently been adapted for use within other Canadian Indigenous populations. When applying the Two-Eyed Seeing Framework to Indigenous mental health, a better understanding of the needs of Indigenous communities can be assessed, while also building capacity and self-determination at a cultural and community level (Bartlett et al., 2012; Marsh, Coholic, Cote-Meek & Najavits, 2015; Hall, Dell, Fornssler, Hopkins, Mushquash & Rowan, 2015). For the purpose of the studies described below, specifically Study 3, the Two-Eyed Seeing Framework of Indigenous Health was used and adapted to fit within the context of Canadian Inuit youth mental health, and specifically to help understand and address mental health crises from a Canadian Inuit lens, while also harnessing Canadian Inuit culture to promote youth engagement. Study 3 applied the Two-Eyed Seeing Framework throughout its' research course, from inception of the idea to data collection and data analysis. Study 1 and 2 were constrained by protocol necessitated by funding sources. As such, though the Two-Eyed Seeing Framework was the initial methodological goal, it was used only in the inception of the ideas for the studies, and in the overall mentality of respecting and caring for Canadian Inuit knowledge. Regrettably, Study 1 and 2 did not follow the leads of communities in creating research protocol, or in engaging participants in a culturally appropriate capacity. Data collected do belong to the communities, but were not coded in collaboration with the communities. Results have been disseminated and shared with the participants and communities involved throughout all three studies.

Two-Eyed Seeing Framework. Research regarding Indigenous mental health was traditionally conducted by non-Indigenous scientific researchers in Western industrialized countries (Martin, 2012; Marsh et al., 2015). These endeavors, though often well-meaning in their goals, frequently failed to consider Indigenous voices and perspectives of wellbeing, and often used approaches that reinforced colonization practices (Bartlett et al., 2012). The Two-Eyed Seeing approach offers a perspective in which both the Indigenous lens of mental health and the Western lens of mental health can be combined to provide an inquiry that is more collaborative and well-rounded to meet the needs of communities (Bartlett et al., 2012; Marsh et al., 2015; Martin, 2012; Iwama et al., 2009). In creating the Two-Eyed Seeing Framework, there was an acknowledgement that there is a sustained power imbalance between Western and Traditional knowledge, where Western knowledge continues to be more valued and applied within mainstream academia and education. This model allows for the co-collaboration of Traditional knowledge with a focus on Indigenous ways of knowing with Western knowledge, without giving either hierarchy (Bartlett et al., 2012; Iwama et al., 2009).

Though developed by Mik'Maw Elders, The Two-Eyed Seeing framework has gained traction across Canada with many different indigenous groups. This

When applied to the study of mental health and wellbeing, the Two-Eyed Seeing approach allows for the collaboration of the Western biomedical perspective, which accounts for mind and the body, with the Indigenous perspective, which places value on all aspects and connections of emotional, mental, physical, and spiritual wellbeing (Vuvic, Gregory, Martin-Misener & Etowa, 2011). The Indigenous perspective of wellness links individual with holistic wellbeing of community, family, culture, and land (Vuvik et al., 2011).

With the discrepancy between the state of Canadian Inuit youth mental health and that of non-Inuit youth mental health in Canada, it is evident that not only are a history of oppression, colonization and imbalances in the quality of living problematic, but so too is the relative disparity in access to modern advances in mental health services (Rowan, Poole, Shea, Mykota, Farag, Hopkins ... & Dell, 2015). A simplistic fix may be to bring these modern advances in services to Northern communities. However, the Two-Eyed Seeing model suggests that research on mental health should not aim only to provide prototypical western services to at-risk populations, but that research must intend to understand and address the diversity present in culture, knowledge, tradition, beliefs and healing practices in developing appropriate services (Bartlett et al., 2012; Marsh et al., 2015; Martin, 2012). As such, the Two-Eyed Seeing model holds researchers accountable to work in conjunction with communities in the development of research questions and methodologies. It discredits research that is brought to Indigenous peoples by outsiders without the collaboration of the communities. If conducting research from the Two-Eyed Seeing framework, with both lenses having contributed their knowledge, communities should be able to ask the questions they want to understand and also benefit from the development of accessible and culturally appropriate resources (Rowan et al., 2015). This framework further postulates that by involving the community in every step, there is intrinsic capacity building taking place by helping community members harness their culture in the promotion of their wellbeing (Hall et al., 2015). In the Two-Eyed Seeing framework as applied to this context, one eye is the Canadian Inuit lens, one eye is the Western lens and together the two eyes provide a more holistic view of the research questions (Marsh et al., 2015).

The Two-Eyed Seeing framework was applied to the current project by accounting for the Canadian Inuit eye, which was represented by Canadian Inuit youth, Elder and community

voices and the Western eye, which was represented by voices of the York University and University of Auckland research teams. Together these voices collaborated to: first examine the results of a western approach to evaluating an intervention that had been created for another group of Indigenous youth (Māori); then develop culturally appropriate methodology; share expertise on perspectives and experiences of mental health difficulties and wellness in Canadian Inuit communities; define the use of standardized assessment tools; and examine the utility of evidence-based treatments in the Canadian Inuit context. The use of the Two-Eyed Seeing Framework in Canadian Inuit communities supported youth capacity building by engaging youth in the development of the project, and by having them teach the researchers about their culture and their communities' experiences. By encouraging the need for increased cultural knowledge, cultural pride was promoted and endorsed. Capacity building was further harnessed through the many activities youth engaged in, including: learning of coping skills, coding skills and involvement in leadership workshops, as well as teaching researchers about their cultural traditions, such as demonstrating how to build igloos, where to hunt and fish, and sharing country food in the local community centres.

The Two-Eyed Seeing Framework was the overarching model used for each of the three studies of this initiative, though only applied in a respectful way in Study 3. This is a shortfall of Study 1 and 2, which were limited by constraints placed by funding agencies. This researcher acknowledges the mistakes made within the first two studies, and values the importance of learning from these errors in moving forward with any future project. Errors were acknowledged and attempted to be reconciled with through Study 3. Within the Two-Eyed Seeing Framework, another framework was developed with the purpose of understanding the distal (historical) stressors and experiences and their impact on more proximal (contemporary) stressors and

experiences. Indeed, the high rates of depression and subsequent suicide have traditionally been viewed as stemming at least in part from historical traumas that the Canadian Inuit peoples have suffered (Boksa et al., 2015; Kirmayer et al., 1999). Recently researchers have also queried whether the impact of historical traumas, though highly significant in the intergenerational influences on mental health, are deemed by Canadian Inuit youth as contributing to depression as significantly as more contemporary factors such as daily life stresses, lack of resources, isolation and economic disadvantages (Kirmayer et al., 2014). In the current project, a new hypothetical model of mental health is proposed and applied to determine how Canadian Inuit youth understand mental health symptomatology and wellness.

The proposed model, *Ecological Systems Model of Cultural Resilience* was developed by this researcher to answer questions that came out of Study 1 and 2. Namely, do youth understand their current difficulties as stemming from historical traumas, as Western literature assumes, or do they also understand contemporary struggles as contributing factors to their mental health difficulties? The model focuses primarily on a historical framework to explain current struggles and coping, while also acknowledging the many contemporary disadvantages that may lead to hardships. This model is in line with current research on Canadian Inuit mental health difficulties, most of which suggests that Canadian Inuit continue to face stressors and hardships primarily because of their history of colonialism, abuse and marginalization, as well as more contemporary practices of colonization (Kirmayer et al., 1999). The history of the Canadian Inuit people, and the intergenerational transmission of exploitation, continue to perpetuate a cycle of colonized hardships, whereby Canadian Inuit peoples lack the structure and resources to properly address their economic, environmental, health and mental health disparities. This model acknowledges that contemporary stressors such as overcrowded housing, job insecurity, food

shortages and lack of resources are likely contributing to mental health difficulties, even though historical trauma suffered by Canadian Inuit people is often cited as a main driver of these difficulties. It is plausible that Canadian Inuit youth may attribute their own difficulties to stressors that are more tangible and relatable for them, while still acknowledging their history in understanding why multiple stressors exist.

The *Ecological Systems Model of Cultural Resilience* was developed to better understand the struggles faced by Canadian Inuit communities, from their perspectives. Participating youth and Elders in Study 3 were not involved in the development of this model, which is a drawback of Study 3. Canadian Inuit youth were only consulted about the model after its' development. This happened for no reason other than the timeline of focus groups did not align with the thought processes this researcher had when thinking about how to make sense of the many contemporary injustices and colonized practices still taking place in Nunavut. The *Ecological Systems Model of Cultural Resilience* model will be examined in Study 3, within the greater context of the Two-Eyed Seeing Framework of Indigenous Mental Health. This model will be further expanded upon in Study 3, where it is applied to the understanding of wellness within four communities in Nunavut. A representation of this model can be found in Appendix A.

The mental health of Canadian Inuit youth. Canadian Inuit youth face more significant challenges and hardships in comparison to youth in the rest of Canada (Kirmayer et al., 2014; National Collaborating Centre for Indigenous Health (NCCA), 2010). Forced relocations of communities by European settlers, breakdown of cultural identity due to its intentional annihilation by settlers, deliberate separations of children from their families in large part through the removal of children from their homes to residential schools, persistent marginalization, economic and resource inequalities, introduction of addictive substances,

infectious diseases and warfare by non-Inuit Canadians and Europeans, systemic governmental and political deficiencies and ensuing complex traumas have all resulted in substantial mental health problems for Inuit peoples in Canada (Boksa et al., 2015; NCCAH, 2010). For Canadian Inuit youth, the consequences of these traumas may include inordinately high rates of depression, suicidal activity, school truancy, violence and substance abuse (Boska et al., 2015; Inuit Tapiriit Kanatami (ITK), 2007; Kirmayer, Brass, & Tait, 2000). In fact, the exceptionally high rates of youth depression and suicidal activity (among the highest internationally), are two of the most significant health concerns in the territory of Nunavut (Boksa et al., 2015). These mental health disparities still exist due to continued colonized practices, and oppression in these communities.

Depression in youth. Depression is consistently assessed as one of the top mental health concerns amongst adolescents and is statistically on the rise around the world (Thapar, Collishaw, Pine & Thapar, 2012; Windfuhr, While & Hunt, 2008; World Health Organization (WHO), 2011). In adolescence, approximately 25-40% of all female and 20-35% of male youth display high levels of depression, resulting in one third of adolescents meeting criteria for Major Depressive Disorder (Conley & Rudolph, 2009; Hammen, Brennan & Keenan-Miller, 2008; Petersen, Compas, Brooks-Gunn & Stemmler 1993). The period between late childhood and early adolescence is a time when many people first experience depressive symptoms. Early adolescence is a key developmental period for both biological and cognitive vulnerabilities, which often leads to depression (Bastin, Mezulis, Ahles, Raes & Bijttebier, 2015). Biological vulnerabilities include the onset of puberty and the associated hormonal and body changes. Hormonal and body changes often lead to feelings of inadequacy, insecurity, changes in self-concept and self-image, affecting how youth interact at familial, social, peer and societal levels, and how they experience these stressors at each level (Bastin et al., 2015). Two of the primary

cognitive vulnerabilities that are linked to depression and often emerge in adolescents are negative cognitive styles and rumination. Negative cognitive style refers to the tendency of a person to make negative attributions about the causes and outcomes of an event, as well as one's role within the event (Bastin et al., 2015). People with this cognitive style often hold negative beliefs and inferences about stressful or adverse experiences and are at an increased risk for developing depressive symptoms (Bastin et al., 2015). Rumination refers to the tendency to have obsessive-like thoughts that often pertain to depressive symptoms, the reasons behind them and their implications (Abela & Hankin, 2011).

Research also suggests that poor cognitive and emotion regulation strategies such as catastrophizing, may be predictive of depression (Abela & Hankin, 2008; Garnefski & Kraaij, 2006). Poor cognitive emotion regulation has also been hypothesized by Beck (1977) to lead to negative thought patterns and belief systems that are often present in depressed youth, and include: negative views about the world, negative views about oneself and negative views about the future. Other factors that have been shown to be predictive of depression include: 1) stressful and negative life events (Ge, Conger & Elder 2001); 2) genetic and/or biological vulnerabilities (Beardslee, Versage & Gladstone, 1998); 3) personality or temperamental vulnerabilities (Compas, Connor-Smith & Jaser 2004); 4) personality characteristics and social-cognitive styles (Abela & Hankin, 2008); 5) cognitive vulnerabilities and negative self and world views (Beck, 2002); 6) interpersonal and attachment vulnerabilities (Hankin, 2006; Morley & Moran, 2011); and 7) gender (Abela & Hankin, 2008).

Depression among Canadian Inuit youth is less understood, especially when assessing it from a Western approach. While depression in the Western world is often symptom-based and, in fact, based on the Diagnostic and Statistic Manual (DSM; American Psychiatric Association,

2013) to assess criteria and fit, Canadian Inuit youth do not necessarily experience DSM-specified symptoms, and the manifestations of their depression may not fit into DSM categories. As such, it is likely not appropriate for the mental health of Canadian Inuit youth to be assessed using a Western approach. An exploration of mental health from an Canadian Inuit perspective should be prioritized. Taking this into account, several factors that may lead to depression among Canadian Inuit youth are explored below. These factors include: isolation from the community; substance use; abuse and neglect; violence; separation from family; breakdown in support systems; exposure to trauma, including suicide, drug abuse, neglect, death, illnesses; inability to access resources and support; breakdown in cultural identity; and disconnect from cultural traditions and beliefs (Boothroyd, Kirmayer, Spreng, Malus & Hodgins, 2001; Chandler & Proulx, 2006; Kirmayer et al., 2000; Kirmayer, Fraser, Fauras & Whitley 2009). Life in Nunavut also has its challenges for Canadian Inuit youth and may not lend itself to typical adolescent exploration that is more common in larger communities with more resources, leading to feelings of isolation and depression (Walls, Hautala & Hurley, 2014). Additionally, from mid-November to February, there is no direct sunlight in the Arctic and average temperatures are approximately -40°C. Due to these extreme climatic conditions, scarcity of sunlight and high latitude, seasonal effects on mood and depression may play a large factor among Canadian Inuit communities. This alone cannot explain the increased risk of depression and suicide seen in recent years, with suicide now being up to ten times more common in Canadian Inuit youth than in the rest of Canadian youth (Haggarty, Cernovsky, Husni, Minor, Kermeen & Merskey, 2002). Suicide rates in Nunavut started to increase in the mid 1980's, with few suicides having been recorded prior to this, or those that were recorded considered assisted suicide for the elderly or ill (Kral, Wiebe, Nisbet, Dallas, Okalik, Enuaraq & Cinotta, 2009; Kral, 2013).

It is possible, and worthy of inquiry, that these factors may present as relatively new vulnerabilities tied to the changes in what was traditionally a nomadic lifestyle for Canadian Inuit. Traditional Canadian Inuit lifestyle relied heavily on winter months for travel as the water was frozen and more easily traversed. As communities settled, often through governmental interference, the winter months became less active, possibly leading to greater burdens associated with lack of light, freezing temperatures and remote isolation. What makes depression such a pressing concern, above and beyond the burden of the suffering of the affected youth, is that depression represents a major risk factor for suicidal behavior and suicide (Thapar et al., 2012; Windfuhr et al., 2008).

Suicidal behavior. There is much concern that Canadian Inuit youth are turning to suicide as an automatic, familiar solution to life stressors and difficulties (Chachamovich, Haggarty, Cargo, Hicks, Kirmayer & Turecki, 2013; Eggertson, 2013; Tester & McNicoll, 2004). Self-harming behaviour is six to ten times higher in Nunavut than in the rest of Canada and suicide rates for Canadian Inuit youth are 11 times higher than rates in the same age bracket for non-Inuit Canadians (Centre for Suicide Prevention (CSP), 2013; Eggertson, 2013; Health Canada, 2012; Inuit Tapariit Kanatami (ITK), 2016). In Canada, with non-Inuit populations, there was an average of 11 suicides for every 100,000 people. In Nunavut, during the same time frame, there was an average of 275 suicides for every 100,000 (ITK, 2016). Between 1999, when Nunavut officially became a territory, and 2012 approximately 400 Canadian Inuit youth between the ages of 10 and 29, out of a territorial population of fewer than 8000 Canadian Inuit youth, committed suicide (Eggertson, 2013; Statscan 2012). Suicides in the territory are most prevalent among 15-19 year olds, followed closely by 20-29 year olds, with young men killing themselves more often than women (Hicks, 2007). In one study, 12% of Canadian Inuit

community members reported to have seriously considered suicide, while 14% had attempted suicide at one point in their lives (Tester & McNicoll, 2004). Trends suggest that suicide attempts have been increasing over the years, with suicide rates having more than tripled among Canadian Inuit youth over the past 20 years (Eggertson, 2013; Health Canada, 2012; ITK, 2016).

Historical Traumas: The residential school era and intergenerational transmission of trauma. Residential schools were implemented by the Canadian government as a system of forced assimilation and appropriation of the Canadian Inuit culture (Smith, Varcoe & Edwards, 2005). Over 100,000 Indigenous children and adolescents resided in residential schools between the mid 1800's and the late 1990's, with the last school closing in 1996 (Health Canada, 2012; Indigenous Affairs and Northern Development Canada (AANCD), 2010). Canadian Inuit children were sent to residential schools in other Nunavut communities, in the Northwest Territories and Manitoba, or as far away as southern cities, such as Brantford, Sault. St. Marie and Regina (Truth and Reconciliation Committee of Canada (TRCC), 2018; Qikiqtani Inuit Association, 2014). Residential schools were typically located in remote locations, with mandated attendance resulting in traumatic separations of the children from their families during a prime childhood and adolescent developmental period (Pauktuutit, 2012). The schools aimed to acculturate Indigenous children to mainstream Canadian ideologies and behaviour. Children were required to speak English, were often separated from their siblings and were prohibited from speaking their native languages, often through the use of abusive discipline (King, 2006). Indigenous children were not allowed to practice any form of cultural or spiritual traditions and beliefs (Smith et al., 2005; King, 2006; AANDC, 2010). At the time, the goal of the Canadian government, with the collaboration of the Christian Church, was essentially to eradicate

Indigenous culture and create mass assimilation to “the save the man”, or to find Christ (King, 2006, Stanton, 2011).

Trauma thus originated in family separations and the children’s subsequent experiences in residential schools, which were often abusive and neglectful. The removal of children from their families devastated important attachment relationships, namely between children and their caregivers. Children were taken to new settings and taught a new way of life without the presence of a supportive or trusting adult. Without available attachment figures, these children grew up deprived of a framework of how to bond, trust, support, seek comfort or relate to others, leading to lasting interpersonal and relational traumas and difficulties (TRCC, 2018; Qikiqtani Inuit Association, 2014). The traumas these children experienced continues to be transmitted across generations due to the emotional turmoil and attachment disruptions created by the abuse of children and families. The intergenerational transmission of trauma in Indigenous communities has led to persistent negative self-perceptions and dissociations from cultural identity (Smith, 2005). Repercussions from these traumas, in many different forms, are still evident in most communities (Smith, 2005). Rates of depressive symptoms and suicidal thoughts are higher among Canadian Inuit youth who have a parent who was involved in the residential school system (Boska et al., 2015). Additionally, Canadian Inuit children of parents who attended residential schools experience greater rates of abuse and neglect and are grossly overrepresented in the Canadian child welfare system (Trocmé, Knoke & Blackstock 2004). Strikingly, close to 40% of children in the child welfare system are of Indigenous descent, with several provinces and territories registering rates as high as 80%, despite the fact that Indigenous people make up only 4.3% of the population (2011 National Household Survey; Trocmé et al., 2004).

Links between historical trauma and vulnerabilities in mental health. The psychological literature has supported the notion that mental health vulnerabilities within Canadian Inuit communities might in large part be attributed to the historical traumas described above. The difficulties and distress faced by current Canadian Inuit generations are thus often understood as direct repercussions of the intergenerational transmission of trauma experienced by current and past generations of Canadian Inuit peoples (Duran & Duran, 1995). In fact, theorists posit that current individual tragedies experienced by Canadian Inuit peoples, for example domestic violence, substance abuse or being close to someone who has committed suicide, are linked to the large-scale traumas that have historically affected this community as a whole. Individual traumas are thus typically linked to the Canadian Inuit peoples “collective discourse of a sometimes-assumed experience of grief and loss and to an awareness of cycles of abuse in Aboriginal communities” (Kirmayer, Brass, Holton, Paul, Simpson & Tatit 2007, pg. 14). As the Canadian Inuit people are thought to share the common experiences of historical and current traumas, it is assumed that traumatic experiences have likely shaped Indigenous communities and the past, current and future lives of their peoples. This has significant implications for the mental health of future Canadian Inuit generations (Elias, Mignone, Hall, Hong, Hart & Sareen 2012; Kirmayer et al., 2014). “Historical trauma offers an explanation for continuing inequities in health and wellbeing and a focus for social, cultural, and psychological interventions. Politically, it has led to explicit recognition of past violence and, in Canada, to a formal apology from the government, processes of compensation, as well as a Truth and Reconciliation Commission” (Kirmayer et al., 2014, pg. 300). In addition to the historical traumas experienced by their communities, Canadian Inuit peoples also struggle with many

contemporary challenges and often face more barriers to accessing resources than the rest of the Canadian population, as described below (Kirmayer et al., 2009; Trocmé, 2004).

Contemporary challenges faced by Canadian Inuit in Nunavut. A history of oppression and the ensuing trauma have left Canadian Inuit communities to face with many systemic hardships, which also serve to increase the rates of depression in Nunavut. Beyond the geographic remoteness and isolation of Nunavut communities, hardships include: housing scarcity or overcrowded and unsafe housing; poor access to resources such as food, water, internet and phones; high rates of poverty and high rates of substance abuse and use (ITK, 2007; Kirmayer et al., 2009; NCCAH, 2010; Trocmé, 2004). Additionally, the childbearing age in Nunavut is significantly lower than in the rest of Canada, meaning there are significantly more children being raised by adolescent parents (Human Resources and Skills Development Canada (HRSDC), 2008).

Access to resources, including mental health services, is another barrier that is often unique to small and isolated communities. While services for those struggling with mental illness are widely available in many Canadian cities and towns, those living in Nunavut often go without access to these same resources (Bennett, Lemelin & Ellis 2010). In addition, there are very few health care professionals who train and ultimately practice in Nunavut. As a result, mental health workers often experience burnout due to their many responsibilities, work burden and personnel shortages (Lindsay & Healey, 2012). Canadian Inuit youth in Nunavut thus deal with multi-systemic issues of an overburdened mental health care system, leading to resource scarcity or lack of resource accessibility.

Canadian Inuit resilience. Despite the many challenges that Canadian Inuit youth face, the Canadian Inuit culture provides many protective factors that have the potential to foster

resilience and mental health (Fleming & Ledogar, 2008; Luthar, Cicchetti & Becker, 2000).

Resilience represents positive adjustment that leads to constructive outcomes despite a context of adversity (Luthar et al., 2000). Resilience is understood to incorporate individual factors, as well as factors at the family, environment, community, cultural and religious levels (Fleming & Ledogar, 2008). Past research on youth resilience has typically focused on youth presenting with histories of maltreatment, traumatic life events, community violence, socioeconomic disadvantage, substance abuse, parents with minimal education, single parenting, adolescent parenting and parental mental illness (Luthar et al., 2000). Despite these adversities, resilient youth often have access to multiple protective factors (Luthar et al., 2000). Protective factors are positive forces that may lead to resilient functioning and are salient in the proximal environment of vulnerable individuals (Luthar et al., 2000). For youth generally, protective factors often include: a pro-social attitude, strong values, personal malleability, close contact and cohesion within one's family, supportive friend groups, effective schooling, frequent church attendance and a positive relationship with an adult in one's community (Fleming & Ledogar, 2008; Kirmayer, Sehdev, Whitley, Dandeneau & Isaac 2009; Luthar et al., 2000). Indigenous researchers have suggested additional cultural determinants that may lead to resilience, including: use of a common and culturally determined language, cultural coherence, attachment to religious leaders or community Elders, cultural pride, involvement in traditional activities, spirituality and belief in cultural teachings (Andersson & Ledogar, 2008; Fleming & Ledogar, 2008; Strand & Peacock, 2003).

Canadian Inuit families are known to be community oriented, with parents, extended family and friends all sharing the duties of providing help, knowledge, trust and friendship (Pauktuutit, 2012). The family dynamic is often described as relying on a network of help, in

contrast to the nuclear family constellations typical of non-Indigenous Canadian communities (Neckoway, Brownlee & Castellan, 2007; Sameroff & MacKenzie, 2003). Due to community-oriented parenting, Canadian Inuit youth have frequent contact with many supportive adults (Neckoway et al., 2007). Because of the community's involvement in their rearing and the familiarity this engenders, youth are often motivated to build close relationships with Elders in their communities, as Elders hold the knowledge on social, emotional, spiritual, physical and mental well-being (Hallett, Chandler & Lalonde, 2007). Participation in traditional skills and customs that are a major source of Canadian Inuit culture, for example ceremonies, storytelling, Igloo building, singing, dancing and craft, are heavily emphasized in fostering youth and child development (Hallett et al., 2007; NCCAH, 2010; Neckoway et al., 2007). Canadian Inuit culture also promotes personal and collective guidance through Inutsiaqqagutit, which refers to Canadian Inuit teachings promoting good life and traditional adherence. Inutsiaqqagutit provides children and youth with oral messages, teachings and the Canadian Inuit world views of Inuit Quajimajatuqanit (IQ) from an early age and continuing throughout their lives. IQ values holism, healing, social affiliation, respect, strength-building and sustainability (Tagalik, 2010).

Importantly, cultural control and affiliation have been associated with positive mental health: a spectrum of control is linked to more health concerns and higher rates of depression and suicidal behavior. In a study by Chandler and Lalonde (1998), six factors of local cultural control were examined across 196 Northern Indigenous communities. These were: 1) community police and fire services; 2) health; 3) community centers; 4) education; 5) self-government; and 6) participation in land claims. Communities that endorsed greater control had lower rates of youth depression and suicidal behavior (Kirmayer et al., 2000). Results indicated that processes at the level of the community and increased political power and agency may strongly influence a

youth's identity and self-esteem (Kirmayer et al., 2000). Indeed, a stronger connection to tradition and culture has been shown to be predictive of lower levels of depressive symptoms and increased resilience in Indigenous youth (Whitesell, Asdigian, Kaufman, Crow, Shangreau, Keane ... & Mitchell, 2014).

In another context, The Centro de Investigación de Enfermedades Tropicales (CIET) longitudinal project, through The Indigenous Community Youth Resilience Network (ACYRN), has been studying youth resilience across 20 Indigenous communities in Northern Canada (CIET International, 2014). Results support individual, familial and cultural determinants of resilience. Factors that were most strongly correlated with resilience included positive school experience, church attendance, traditional hobbies, use of Native language, ceremonial participation, relationship with Elders and familial and friend support (Andersson & Ledogar, 2008; Edwards, Mitchell, Gibson, Martin & Zoe-Martin, 2008).

Treating depression and suicide in the North. The treatment of depression amongst Canadian Inuit youth has historically focused on intervening with suicide in times of crisis, with treatment often focusing on communities as a whole in order to foster support (Kirmayer et al., 1999). Due to the lack of resources in many Canadian Inuit communities, youth with depression are often not able to get the appropriate assistance. With the high rates of depression and suicide in these communities, and the scarcity of resources, it has been recommended that interventions in the North use a community-based prevention model; acting at the primary or community level is thought to have the greatest impact for changing suicidal behaviour in small communities (Kirmayer et al., 1999). Additionally, community-wide programs minimize stigma by including everyone and they foster community-wide resilience, which has been shown to help reduce youth depression and suicide. In one longitudinal study in Alaska, communities that implemented a

community-wide suicide prevention program showed a significant decrease in youth suicides over three years in comparison to communities without a community-based program (Lehti, Niemala & Sourander). Community-based programs make use of cultural promotion through fostering cultural pride, esteem, identity and control. Programs use local dialects, Canadian Inuit knowledge and traditions and directly discuss systemic barriers faced in their communities (Kirmayer et al., 1993; Kirmayer et al., 1999).

For the community at large, information about suicide should be transmitted along with information about mental illness, help-seeking resources, and ways of dealing with substance abuse, anger, relationship break-ups and emotional distress... Although school is a natural focus for programs working with the age groups most strongly affected by suicide in Aboriginal communities, there are youth who have dropped out, families who are isolated, and older age groups who may not be reached. Community-based approaches address the need to reach the widest range of individuals and to have impact on the community as a whole with respect to social structures, collective self-esteem and shared vision. Since breakdown in the transmission of cultural traditions appears to contribute substantially to the widespread demoralization and hopelessness of Aboriginal youth, the development of programs to transmit traditional knowledge and values, usually by respected elders, is also a crucial component of any suicide prevention program addressed to Aboriginal peoples. (Kirmayer et al., 1999, pg. 18)

Though previous interventions with Canadian Inuit youth have focused primarily on intervening when there is a risk for suicide, little research has focused on the use of early prevention for youth struggling with depression. Early treatment of depression has been shown to be the most effective for minimizing future risk, supporting a need for these type of programs in these communities (Katz, Elias, O'Neil, Enns, Cox, Belik & Sareen, 2006; Stasiak & Hatcher, 2012). Cultural appropriateness and adaptation should characterize all intervention and prevention programs to ensure the provision of the most effective and culturally safe services.

In one study, Katz et al., (2006), looked at the effectiveness of a culturally adapted version of Dialectical Behaviour Therapy (DBT) for use with suicidal Indigenous youth. DBT is an intensive manualized program that has recently gained popularity with youth at high-risk for

suicide. Results supported the use of DBT with Indigenous youth, suggesting similar outcomes as with non-Indigenous youth (Katz et al., 2006). In another meta-analysis assessing treatment options for mental health in Indigenous communities, it was found that the most effective interventions acknowledged the role of culture in mental health symptomatology, provided education surrounding mental health and intervention, were led at a community level, promoted autonomy and self-growth, promoted community cohesion, and fostered the development of supportive relationships within the community (Mussell, Cardiff & White, 2000). In another study, “culture as treatment” was supported as the most effective means of treating Indigenous youth with mental health concerns (Gone, 2013). In fact, the author of this study found “culture as treatment” would be the best fit to work with and treat mental health difficulties in Indigenous populations. He argued that because of the historical traumas faced by Indigenous communities, these peoples require their own culturally defined diagnostic formulations and treatment plans, as their symptoms may not map on to the diagnostic criteria of a Major Depression or Post Traumatic Stress Disorder (PTSD) set out in the Diagnostic and Statistical Manual (DSM) used in the Western world (Gone, 2013). Despite this growing field of research, little empirical evidence exists to support specific treatments for depression that are culturally appropriate with Canadian Inuit youth.

CBT: An evidence-based treatment for depression. The steady rise in the rates of adolescent depression worldwide over the past few decades has prompted the emergence of many new treatments for mood disorders in youth (Abela & Hankin, 2008). The most common treatment in use for depression is Cognitive Behavioral Therapy (CBT). CBT is an intervention that helps depressed individuals change their potentially dysfunctional or maladaptive cognitions, or distorted beliefs that result in low mood. These maladaptive thought patterns are

thought to maintain depressive symptoms and associated relational or behavioural difficulties (Hofmann, Asnaani, Vonk, Sawyer & Fang, 2012). Depressed individuals often have negative perceptions of themselves and their worlds, holding schemas and assumptions that bad will prevail good (Hofmann et al., 2012). CBT teaches cognitive practical coping skills and self-regulatory behaviours to change these thought patterns. CBT is based on the premise that thoughts precede mood and that by changing maladaptive thought patterns, mood can be enhanced and stabilized (Rupke, Blecke & Renfrow, 2006). CBT has been shown to be more effective in treating adolescent depression in comparison to other less directive forms of therapy (Brent, Holder, Kolko, Birmaher, Baugher, Roth, Iyengar & Johnson, 1997; Lewinsohn & Clarke, 1999; Curry, 2001). CBT interventions have proven to be most efficacious in the long-term treatment of depressive symptoms (Curry, 2001).

The goal of CBT treatment is to change maladaptive thought patterns, and by doing so, to reduce symptoms of depression. Research suggests that by doing this, people can improve their outlook on life, their daily functioning, their sense of self, and their relationships (Hofmann et al., 2012). CBT encourages the individual to challenge their own negative thoughts, and provides behavioural skills to help people cope with acute distress. Individuals become detectives of their own thoughts, attempting to find evidence that would support their maladaptive thought patterns, and prove that there is no validity to how they are thinking (Hofmann et al., 2012).

A recent meta-analysis looking at the use of CBT across different psychological disorders found that CBT was just as, if not more, effective in treating depression than other forms of treatment and talk therapy (Hofmann et al., 2012). Further, CBT appeared to have good outcomes at six-month follow-ups, with participants across studies showing signs of remission of depression (Hofmann et al., 2012). When compared to pharmacological treatment for depression,

CBT again showed similar results to medication alone. However, a combination of medication and CBT appeared to be more effective than CBT alone (Hofmann et al., 2012).

A meta-analysis looking at 81 school-based prevention programs for children and youth with depression found that 84% of programs being offered in school systems globally were based on CBT (Werner-Seidler, Perry, Callear, Newby & Christensen, 2017). Of these programs, there were small beneficial effects. This effect was maintained at 6-month and 12-month follow-ups (Werner-Seidler et al., 2017). Another meta-analysis looking at 58 studies, found that CBT was an effective treatment for treating children and youth experiencing depression with comorbid anxious symptoms (García-Escalera, Chorot, Valiente, Reales & Sandín, 2016).

There are, however, developmentally specific challenges when attempting to engage youth in treatment. Adolescents, while striving for independence, may rebel against parents and other adults. This rebellious behaviour may manifest itself in the denial of difficulties, reluctance to accept help, or general hesitation to trust adults in the context of a therapeutic process (Gulliver, Griffiths & Christensen, 2010; Rickwood, Deane, Wilson, & Ciarrochi, 2005). Lack of help-seeking may not solely be due to youth reluctance to talk face-to-face with a professional about their problems. It may also relate to a struggle with recognizing the symptoms of depression (Wright & Jorm, 2009). Youth in small or remote communities are particularly at risk for not seeking professional help, as they may fear that their confidentiality could be compromised due to a lack of privacy, as well as worry about the stigma associated with mental health problems. Youth may also have a difficult time seeking help due to: a lack of emotional competence and strategies for effectively seeking help; help-negation behaviours; and negative views of professional help, often affected by negative past experiences (Rickwood et al., 2005). Suicidal ideation and help-seeking are negatively correlated so that as suicidal ideation increases,

help seeking behaviour decreases. Due to these barriers in providing therapeutic assistance to youth, new tools have emerged that attempt to eliminate some of these barriers, for example computer-based Cognitive Behavioural Therapy (cCBT) programs.

Computer-based Cognitive Behavioural Therapy (cCBT). cCBT programs offer psychoeducation and the same core principles from CBT, through a computer program. Children and youth who use cCBT programs are introduced to the same techniques of using cognitive regulation skills to challenge their maladaptive thoughts, and will acquire the same behavioural skills to help them in moments of acute distress. By providing CBT lessons through a computerized program, it eliminates the need for a face-to-face counselling session and minimizes the risk of compromised confidentiality or stigma. cCBT has the potential to address some barriers of face-to-face CBT treatment, such as a shortage of skilled therapists, dearth of service providers in remote communities, doubt over the confidentiality of treatments, stigma associated with seeking help, anonymity, and financial restraints (Ebert, Zarski, Christensen, Stikkelbroek, Cuijpers, Berking & Riper 2015). cCBT programs may thus increase access to intervention programs for many youth who do not have access to such resources, especially those in remote or isolated communities (Sethi & Campbell, 2010; Stasiak & Hatcher, 2012).

Overall, cCBT programs appear to decrease symptoms of depression and anxiety and help with emotional difficulties, behavioural difficulties and global functioning (Abeles, Verduyn, Robinson, Smith, Yule & Proudfoot, 2009; Ebert et al., 2015; Stasiak & Hatcher, 2012). cCBT trials have been successfully completed with children and youth in primary care provider offices, hospitals, private clinics, schools, alternate school programs and in intensive treatment programs for youth (Fleming & Merry, 2013). Trials have also been completed with and without

the support of a clinician working closely with the youth (Fleming & Merry, 2013). These trials have shown promise in the effectiveness of cCBT programs (Fleming & Merry, 2013).

A recent meta-analysis of thirteen cCBT trials with over 700 youth from Australia, New Zealand, The United States, The United Kingdom, Sweden and the Netherlands showed that cCBT programs were effective in decreasing symptoms of anxiety and depression (Ebert et al., 2015). Effect sizes were not significantly different for cCBT programs in comparison to face-to-face treatment of anxiety or depression with youth ($g = .72$) (Ebert et al., 2015). Further, treatment success did not appear dependent on parental or clinician involvement, suggesting youth were able to generalize skills learnt from the cCBT programs on their own (Ebert et al., 2015). Another meta-analysis looking at 27 studies that used cCBT programs with children and youth with diagnosed depression or anxiety disorders suggested that cCBT programs had positive effects for children and youth with symptoms of depression ($SMD = 0.62$) (Pennant, Loucas, Whittington, Creswell, Fonagy, Fuggle ... & Group, 2015). Whereas another meta-analysis looking at 7 studies that assessed cCBT programs found that computerizing treatments enhanced the desirability of the program for children, youth and their families (Rooksby, Elouafkaoui, Humphris, Clarkson & Freeman, 2015). Efficacy of these programs appeared similar to face-to-face CBT programs (Rooksby et al., 2015).

Despite their popularity within the adult mental health world, only a handful of cCBT interventions have been developed and tested with adolescents (Berry & Lai, 2015; Ebert et al., 2015; Sethi, 2013). “MoodGYM”, a cCBT program initially developed for adults and adapted for use with youth, has been shown to be effective in reducing symptoms of depression, anxiety, automatic negative thoughts and distress in youth (Sethi & Campbell, 2010). In comparison to a control group, youth who participated in MoodGYM had significantly fewer depressive and

anxious symptoms (Sethi, 2013). Results suggested that MoodGYM was most effective when used in conjunction with face-to-face treatment (Sethi, 2013). Pilot results from a youth developed cCBT program, “Think, Feel, Do”, suggested that it increased self-esteem and decreased symptoms related to anxiety and depression in comparison to a control group (Stallard, Richardson, Velleman & Attwood, 2011). Another cCBT program developed for youth, “Cool Teens”, showed significant decreases in anxiety symptoms and internalizing symptoms in comparison to a control group. Results were consistent across youth, parent and clinician reports and were maintained at a three month follow up (Wuthrich, Rapee, Cunningham, Lyneham, Hudson & Schniering, 2012). In another study, “BRAVE for Teenagers” was as effective as face-to-face service delivery, with 78% of the adolescents in the cCBT group no longer meeting criteria for a diagnosis of anxiety at a 12-month follow-up (Spence, Donovan, March, Gamble, Anderson, Prosser & Kenardy, 2011). Pilot results from the “Stressbuster” program showed that 82% of youth who met diagnostic criteria for depression on the KSADS (Kaufman, Birmaher, Brent, Rao, Flynn, Moreci ... & Ryan, 1997) prior to treatment no longer met criteria after participating in the program (Abeles et al., 2009). “Stressbuster” results were maintained at a three month follow up (Abeles et al., 2009).

Overall, adolescent users of cCBT programs have reported moderate to high levels of satisfaction in the utility and effectiveness of these programs (Richardson, Stallard & Velleman, 2010). With increasing popularity of cCBT programs for youth, new literature continues to show promising trends. One significant limitation is that studies assessing the effectiveness of youth-based cCBT programs (and treatment of youth mental health generally) are based predominantly in high income countries (Clarke, Kuosmanen & Barry 2015). To meet the challenges of accessing mental health resources for minority and marginalized youth, some researchers have

begun to adapt cCBT programs for use with specific populations. SPARX, a youth-based cCBT intervention, is one such program that has been created to serve specific minority populations, for example Māori youth (Merry, Stasiak, Shepherd, Frampton, Fleming & Lucassen, 2012).

SPARX. SPARX (Smart, Positive, Active, Realistic, X-factor thoughts) is a cCBT computer-based software program that was developed in New Zealand to alleviate clinically significant depression in youth (Merry et al., 2012). SPARX uses CBT skills to teach users to cope with negative thoughts and feelings through an interactive fantasy-based game. Youth use the program independently without clinician contact (Merry et al., 2012). The participant customizes an individual avatar, which they use as they encounter challenges presented to them throughout the game. The participant's goal, as the avatar, is to use CBT skills they are taught to rid the world of Gloomy Negative Automatic Thoughts (GNATS) and return balance to the disordered world (Merry et al., 2012).

The game consists of seven modules, completed sequentially. A guide greets the user at the beginning of every module and provides education, context and real-life challenges. These challenges are set and monitored by the guide (Merry et al., 2012). In Level 1, youth enter the "Cave Province", where they are conveyed lessons about hopefulness, and provided with psychoeducation about CBT and depression. They are introduced for the first time to GNATS and taught a breathing exercise. In Level 2, youth enter the "Ice Province", where they are taught about active participation, consistent scheduling and behavioural monitoring. They are delivered lessons surrounding communication and interpersonal skills, and provided with a progressive muscle relaxation exercise. In Level 3, youth enter the "Volcano Province", where they are taught how to deal with difficult emotions, such as anger and hurt. They are provided with lessons on self-advocacy, such as assertiveness, active listening and compromise. In Level 4,

youth enter the “Mountain Province”, where they are helped with how to overcome difficulties through problem solving skills. Youth are taught to acknowledge the difficulty, think of possible solutions, examine potential outcomes of their solutions, pick a solution to try, and assess its’ result. Youth are also supported in challenging their negative thoughts through cognitive restructuring exercises. In Level 5, youth enter the “Swamp Province”, where they are taught how to recognize their maladaptive thoughts, and encouraged to practice their cognitive restructuring skills. In Level 6, youth enter the “Bridgeland Province”, where they continue to challenge their maladaptive thoughts by changing them to more positive and adaptive thoughts. They also revisit and practice interpersonal skills and communication. In Level 7, youth enter the “Canyon Province”, where they bring all their skills together for the first time, including mindfulness strategies, tolerating distress, communication, asking for support, and challenging maladaptive thoughts. Still images of SPARX can be found in Appendix B.

A large randomized control trial showed SPARX to be effective in decreasing depression, hopelessness and anxiety in youth (Merry et al., 2012). Results from SPARX treatment trials have been as effective in decreasing depression as face-to-face CBT (Cohen’s $d=0.3$) (Fleming, Dixon, Frampton & Merry, 2012; Merry et al., 2012). Significant decreases in depressive symptoms were noted, as were decreases in symptoms of hopelessness (Merry et al., 2012). Gains from the SPARX-only trial were maintained at three-month follow-ups (Merry et al., 2012). Further, results of SPARX trials suggest that it may boost resilience and increase optimistic thought. Youth who have participated in the SPARX program have reported it to be engaging and user friendly, and indeed attrition rates have been less than reported in traditional face-to-face CBT treatments (Fleming et al., 2012; Merry et al., 2012). Participating youth commented on SPARX: “I could do it at school or in the clinic”; “I can learn things by myself at

my own pace”; “I could do it at home”; “It has a New Zealand look and feel”; and “It is made especially for young people” (Merry et al., 2012).

SPARX has been adapted for use with youth in specific populations. The program has both been tested in its initial iteration with minority youth and has been adapted for use with other minority populations. In one study, SPARX was tested with New Zealand youth excluded from mainstream education services. Youth in the treatment group showed significantly fewer depressive symptoms both at post-completion and at a ten week follow up in comparison to the control group (Fleming et al., 2012). SPARX has also been tested in rural Australia (Northern Tasmania) with remote, small and isolated, often poor communities (Cheek, Bridgman, Fleming, Cummings, Ellis, Lucassen, Shepherd & Skinner, 2014). SPARX was not only effective in decreasing depressive symptoms in these communities, but youth who played it reported that the game was appealing and a promising alternative to traditional face-to-face therapy (Cheek et al., 2014). Rainbow SPARX is a version of SPARX adapted for use with youth from LGBTQ communities (Lucassen, Merry, Hatcher & Frampton, 2015). Results from Rainbow SPARX trials suggest that it is an engaging program effective at decreasing depressive symptoms, with results maintained at three months follow up (Lucassen et al., 2015). In another adaptation of SPARX, the program was effective in decreasing depressive symptoms in Dutch female youth who met clinical cut-offs of depression, however youth participating in the control group also showed a decrease in their depressive symptoms (Poppelaars, Tak, Lichtwarck-Aschoff, Engels, Lobel, Merry... & Granic, 2016).

In addition to the above iterations, SPARX is the first ever cCBT program created for use with Indigenous youth. SPARX was created in collaboration with Māori communities to help treat depression with Māori youth in New Zealand (Māori taitamariki of New Zealand). SPARX

for Māori players was developed with input from Māori youth during focus groups and incorporates Māori designs (e.g., for costumes and dwellings), traditional Māori symbolism and Māori voice actors. Māori SPARX was developed in consultation with specific Indigenous groups: taitamariki Kapa Haka/performing arts groups, taitamariki mothers and whānau/extended family. Discussions revealed that the CBT skills taught in SPARX (e.g., relaxation exercises) were well aligned with taitamariki culture. Māori SPARX has repeatedly been shown to significantly reduce symptoms of depression and anxiety in participating youth (Shepherd, 2011). In one study, participants were asked to complete the Child Depression Rating Scale-Revised (CDRS-R; Poznanski & Mokros, 1996) and secondary self-rating scales of depression, anxiety and quality of life before and after SPARX treatment, as well as at a five-month follow up. The CDRS-R scores dropped significantly to within a normal range post intervention (Shepherd, 2011). This drop was maintained at the five-month follow up (Shepherd, 2011). From two months to five months, self-reported scores of anxiety and quality of life showed significant improvement. In another study, the ability to customize the characters with cultural designs seemed to enhance cultural identity (Shepherd, 2011). Māori SPARX has been tested with Indigenous youth in rural Australia through a focus group format. Rural Australian youth found it appealing and especially useful in communities where privacy was of paramount importance (Cheek et al., 2014).

Despite living in a high-income country, Canadian Inuit often subsist below the poverty line and do not have the same access to basic resources available to the majority of Canadians. Māori SPARX may be suitable for Canadian Inuit populations because of similar social, political and cultural shared experiences, for example the lasting effects of colonialism, chronic underemployment, substance abuse and isolation (Tatz, 2004). Access to a game like SPARX

may further break down some of the many barriers present for Canadian Inuit youth who are unable to access mental health services. The current project evaluates the Māori SPARX cCBT program and its effectiveness with Canadian Inuit communities in Nunavut.

The Current Project

The current project forms part of a larger research initiative funded by the Canadian Institutes of Health Research and the Government of Nunavut, a collaboration between the LaMarsh Centre for Child and Youth Research at York University, twenty-five Nunavummiut communities, Embrace Life Council, Pinnguaq Association, the Qaujigiartiit Health Research Centre in Iqaluit and the Werry Centre for Child and Adolescent Mental Health at the University of Auckland. The overarching goal of the three studies that comprise the current project was to evaluate the effectiveness of SPARX, a computer-based cognitive behavioural intervention (cCBT), in decreasing depression and boosting resilience among Canadian Inuit youth of Nunavut, and to contribute to an understanding of wellness among Canadian Inuit youth. These three studies are based on 1) a pilot trial of SPARX in Nunavut communities (Studies 1 and 2) and 2) a series of focus groups with Canadian Inuit youth, community facilitators and Elders (Studies 2 and 3).

Study 1, *Combating Depression with SPARX: Evaluating the Effectiveness of a Computerized Intervention Program with Canadian Inuit Youth*, evaluated a seven-week pilot trial of the SPARX program with youth in eleven Nunavut communities. Study 1 examined youth's levels of depression and resilience pre and post participation in the seven levels of the SPARX cCBT intervention; factors were measured with questionnaire data provided by youth in the pilot trial. Study 2, *SPARX as an Intervention for Depression with Canadian Inuit Youth: Perceptions and Experiences*, used a qualitative approach to explore youth and community

facilitator's experiences with SPARX. Study 2 focused on qualitative data provided by the same youth from Study 1. Study 3, *Understanding Wellness in Canadian Inuit Communities: An Exploratory Review of Canadian Inuit Youth and Elder Perceptions*, used focus groups in four communities to gain an understanding of the perceptions of historical and contemporary contributing factors to youth mental health and wellness, as well as perceived solutions to the mental health crisis in the territory. Study 3 focused on qualitative data provided by a cohort of youth and Elders who had not participated in Study 1 or Study 2.

Study 1

Introduction

Protecting against depression with SPARX: Evaluating the effectiveness of a computerized intervention program with Canadian Inuit youth. In Nunavut, rates of youth depression are currently the highest in the world at 11 times the national average (CSP, 2013; Eggertson, 2015; Health Canada, 2012; ITK, 2007). Canadian Inuit youth in Canada face more mental health challenges than non-Indigenous populations due, in part, to marginalization, breakdown of cultural identity and economic disparities (NCCA, 2010). Yet youth in Nunavut have limited access to mental health services and are often sent out of their community, or even territory when they experience severe mental health symptoms (Bennett et al., 2010; Chachamovich et al., 2013; Charlier, Malaurie, Wasserman, Carli, Sarchiapone, Dagenais-Everell & Herve, 2017; Eggertson, 2013). In fact, one study found that of all youth who completed suicide in Nunavut in the past decade, only 12% had received medication, 17% had been hospitalized and 89% had not received any mental health support at all, whether prescription medication, in-patient treatment, or out-patient counselling (Chachamovich, Kirmayer, Haggarty, Cargo, McCormick & Turecki, 2015; Eggerston, 2013). This finding is surprising, especially

given that many of the youth included in that study suffered from serious psychiatric difficulties. Given the reality that there are few frontline mental health workers in Nunavut, it is imperative to identify and develop interventions for depression that are not only effective and culturally appropriate, but independent of a traditional network of on-site clinician support easily accessible (Lindsay & Healey, 2012). As Chachamovich stated in his 2015 paper: “There are no psychiatrists in Nunavut, no permanent family doctors in many communities, and even visiting psychiatrists and family doctors may not reach some of the territory’s more isolated communities for months at a time. That’s not good enough, given the rates of mental illness, substance abuse and family violence. Consistent, aggressive delivery of programs ... is required”. To address the current dearth of in-person mental health supports available, and the growing body of evidence for the usefulness of self-administered electronic interventions, this study aimed to examine the usefulness of an electronic intervention, SPARX, in Nunavut (Shephard et al., 2011).

SPARX is a psychoeducational computer program that relies on a cognitive behavioral (CBT) approach to address clinically significant depression in youth by teaching users how to cope with negative thoughts and feelings (Merry et al., 2012). SPARX was developed at the University of Auckland and has been adapted to diverse specific groups of youth, including Maōri youth. The goal of Study 1 was to evaluate the effectiveness of the Maōri version of SPARX in boosting resilience against depression among Canadian Inuit youth in 11 Nunavut communities. More specifically, this pilot study assessed whether Canadian Inuit youth who completed the SPARX program experienced increased resilience and showed a decrease in risk factors related to depression, specifically cognitive distortion, emotional dysregulation, hopelessness, rumination, self-blame, other-blame and catastrophizing (Garnefski, Kraaij & Spinhoven, 2001).

The Territorial Department of Health, a team of Canadian Inuit community mental health staff from Nunavut, Nunavut-based community facilitators who volunteered their time for this project, as well as Canadian Inuit youth were involved in the development of this study. These representatives contributed their expertise on the mental health needs of the communities, and the cultural requirements of working with Canadian Inuit communities. With this shared knowledge a culturally appropriate model for visiting communities, working with youth and collecting data was established. With expertise shared by between the above representative and researchers from York University and the University of Auckland the development of the research model, data collection and analyses of questionnaires were co-created. Study 1, a pilot trial of SPARX, was implemented in 11 communities across Nunavut. 49 youth initially participated in an evaluation of the effectiveness of SPARX in modifying dysfunctional cognitions, reducing symptoms of depression and enhancing resilience. All youth completed conventional pre- and post-intervention measures assessing their current mental health status. Quantitative data collected from Study 1 were used to evaluate program effectiveness. Two hypotheses were generated for Study 1:

- 1) Youth who completed the SPARX program were expected to experience a decrease in risk factors related to depression, as noticed through changes in CESDR, HSC, and CERQ questionnaires
- 2) Hypothesis two: Youth who completed the SPARX program were expected to experience an increase in factors related to resilience

Methods

Participants. Twenty-Five Nunavut communities initially participated in a pilot study to evaluate SPARX. 11 communities (Baker Lake, Cambridge Bay, Grise Fiord, Hall Beach,

Igloolik, Kugaaruk, Kugluktuk, Naujaat (Repulse Bay), Taloyoak, Qikiqtarjuaq, Resolute) completed the pilot trial, and thus participated in Studies 1 and 2 reported here. The remaining 14 communities did not complete Study 1 due to an inability to recruit youth, or because there was no facilitator able to support youth. Communities were chosen based on feasibility (primarily the availability of a facilitator), and interest from community members. To participate, communities required both an interested community facilitator with the time to commit to SPARX, as well as youth who were interested in the project. Three to four youth were recruited in each community with a projected participant count of 40. See Appendix C for a map of communities involved.

Youth participants were between the ages of 13-18 and had been identified by the community facilitators as exhibiting low mood, negative affect, depressive presentations or significant levels of stress. Youth had to demonstrate sufficient English language comprehension to use and understand SPARX. Though this does not respect inclusion for all Canadian Inuit youth, and does not support Indigenized research, this criterion was maintained due to the heavy use of the English language within the SPARX program. Youth who showed limited cognitive abilities, psychotic presentation, severe depression, elevated suicide risk, or other significant mental health difficulties were excluded for ethical reasons regarding the usefulness of SPARX with these presentations, and not knowing the implications of participation. Youth were excluded if they were currently receiving or had previously received Cognitive Behavioural Therapy (CBT), Interpersonal Therapy (IPT), or antidepressant medication within the past three months. Attrition rates for Study 1 were 44% for Group A, 10% for Group B at time 2, and 53% for Group B at time 3. This was due to high community facilitator turnover, timing of holidays, loss of interest, or community crisis. Similar attrition rates are not uncommon in pilot studies in remote communities. Age, gender and attrition information can be found in the tables below.

Table 1

Age Demographics of youth

<u>Age</u>	<u>Retained Youth</u>			<u>Youth who left study</u>		
	Group A	Group B	Total	Group A	Group B	Total
< 13 years old	2	0	2	0	0	0
13 years old	1	1	2	0	0	0
14 years old	5	5	10	6	3	9
15 years old	2	1	3	0	5	5
16 years old	3	0	3	0	5	5
17 years old	0	1	1	2	4	6
18 years old	1	0	1	0	1	1
> 18 years old	2	0	2	0	0	0
Total	16	8	24	8	18	26
M	15.19	14.38		14.75	15.72	

Table 2

Gender demographics of youth

<u>Gender</u>	<u>Retained Youth</u>			<u>Youth who left study</u>		
	Group A	Group B	Total	Group A	Group B	Total
Female	6	4	10	4	13	17
Male	10	4	14	4	5	9
Total	16	8	24	8	18	26

Table 3

Samples size by time point

	<u>Group A</u> <u>Time 1</u>	<u>Group A</u> <u>Time 2</u>	<u>Group B</u> <u>Time 1</u>	<u>Group B</u> <u>Time 2</u>	<u>Group B</u> <u>Time 3</u>
Sample Size	21	14	29	19	10
Total Attrition	-	7	-	10	19

Procedure. A pre-project planning meeting was held in Toronto with managers of the Territorial Department of Health, a team of community mental health staff from Nunavut and potential on-site facilitators on March 27th, 2014. Procedural aspects of the SPARX pilot project were based on contributions and feedback from attendees of this meeting. The meeting focused on the importance of the SPARX project in Nunavut communities, how the SPARX project could achieve cultural appropriateness and what traditional and cultural knowledge must be incorporated within the project to gain youth trust and subsequent participation. In collaboration with Canadian Inuit staff during this meeting, the Qaujigiartiit Health Research Centre and the team at York University, the design described below was adopted.

Ethical approval. Approval for the SPARX pilot was obtained through the Human Participants Sub-Committee of the York University Office of Research Ethics. Approval was also obtained from the university's Advisory Group for Research Involving Indigenous Peoples. This subcommittee is guided by Chapter 9 of the Tri-Council Policy Statement "Research involving the First Nations, Inuit, and Métis Peoples of Canada", and its own Guidelines for Research Involving Indigenous/Indigenous Peoples. In addition, the research team received approval for this research in the form of a research license from the Nunavut Research Institute (NRI), which represents all Nunavut 25 communities. Last, an independent review of the proposed project was also conducted by the Elder Council of the Clyde River community. See Appendix D to view the consent form.

Design. A modified randomized control approach was adopted for this trial. Prior to the recruitment of youth, community facilitators, who were responsible for recruiting youth and facilitating game play, were trained. Workshops were provided via teleconferencing. In addition, each facilitator was mailed a training kit consisting of PowerPoint slides and user-friendly

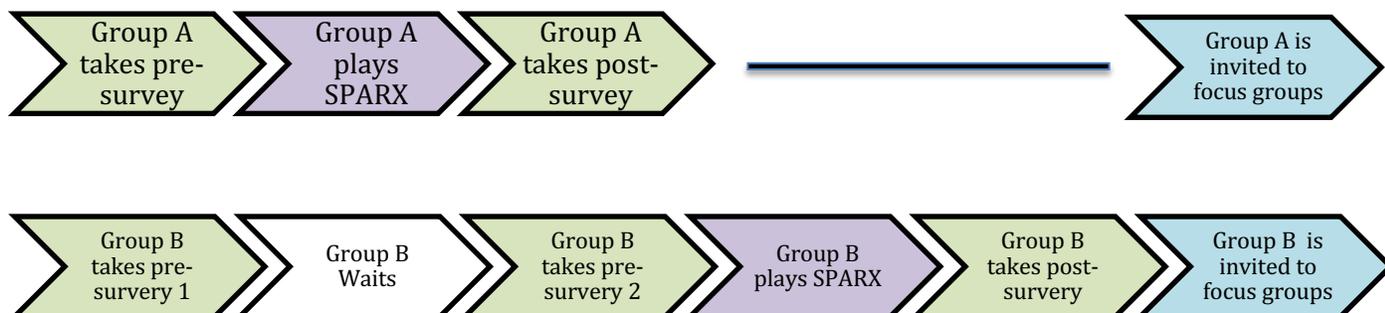
manuals. Each participating community received 2 laptops with SPARX software installed, SPARX promotional pamphlets in English and Canadian Inuit languages, homework booklets and training manuals. Following the initial training, community facilitators played SPARX on the laptops to familiarize themselves with the game. Each community facilitator was assigned a member of the York research team who acted as the facilitator's personal "go to" consultant in all aspects of the project. Once training was complete, community facilitators recruited youth, secured consent and administered pre-intervention measures. Communities, instead of youth, were randomly assigned to an intervention group (Group A) or a waitlist control group (Group B), which is why a modification was made to the randomized control trial. Communication between community facilitators and York researcher members was occasionally made difficult by various barriers outside the participants' control. Cell phone outages and internet access are sparse in Nunavut and limited the ease in which communication was feasible. Short contracts for employees of the Government of Nunavut also created more staffing turnover than had been anticipated for community facilitators. In addition, because of holidays, community crises and out of community trainings, it was occasionally difficult to set times for phone calls, extra training, and provision of support.

The sequence of SPARX play differed for the youth depending on whether they were in Group A or Group B. Both groups completed the pre-intervention surveys at Time One, the beginning of the study. Group A youth then began to play SPARX for seven weeks while Group B waited. Group B youth were not required to participate in any SPARX activities or meet with the community facilitator during their wait period. Upon completion for Group A youth, they completed post intervention surveys, while Group B youth completed an additional set of pre-intervention surveys before beginning SPARX play. Once Group B youth completed SPARX,

the youth in this group completed post-intervention surveys. Youth played SPARX on the laptops in either the community-facilitator office, if space permitted for this, or in an office in the school, as arranged by the community facilitators. Their game play was saved after each session, so that on each visit, youth were able to begin at the level subsequent to the one they had last completed. Youth were asked to engage in SPARX play once a week, however due to complications in some communities (crisis, snow storms etc.), some youth played either more or less frequently. Youth engaging in SPARX were always supported and accompanied by a community facilitator. This was done to ensure that any additional assistance with either SPARX or with mental health difficulties could be supported. See below for the sequence of SPARX play.

Figure 1

Sequence of SPARX play



Measures. Pre- and post-intervention surveys consisted of the same set of measures. Measures were either completed online via Survey Monkey on a computer, or on paper, which were faxed to the York research team, as internet service was not consistently available for all communities. Community facilitators were on-site with the youth while completing the measures to ensure they were able to provide support if necessary. Support included reading questions out loud to the youth if any youth experienced difficulty with reading, or talking through answers if

any youth felt vulnerable, at risk, or triggered by what the questions were asking. Measures were selected based on their relevance, use in earlier, related studies, established psychometric properties for youth, sensitivity to change over time, ease of administration, length and clarity/readability, and constraints based on funding sources. Not all questionnaires had psychometric properties pertaining to Indigenous youth, and none pertaining to Canadian Inuit youth. The goal of this pilot study was to replicate as best as possible in this new context, the studies that had been conducted with Māori youth in order to assess the potential usefulness of SPARX as an intervention with Canadian Inuit youth. It was clear to the researchers that, should funding subsequently be obtained for a more comprehensive study, more culturally appropriate questionnaires would then be developed, together with Canadian Inuit communities, to assess youth depression and resilience. The following were chosen as primary outcome measures, to remain as consistent as possible with studies of SPARX in New Zealand. As these measures had not previously been used in Canadian Inuit populations, it was important to evaluate the roles of depression, hopelessness, resilience and cognitive emotion regulation within these communities.

Centre for Epidemiologic Depression Scale – Revised (CESDR; Lewinsohn, Seeley, Roberts, & Allen, 1997) is a short, 20-item, self-report scale that aims to measure current depressive symptomatology. Each item is a symptom associated with depression. A scale of 1 (*rarely*) to 4 (*most of the time*) is used to assess the frequency of the behaviour or feeling in the past week. CESDR was developed for use with adults but later revised for use with youth aged thirteen-eighteen (Roberts, Andrews, Lewinsohn & Hops, 1990). CESDR has acceptable internal consistency (Cronbach’s alpha 0.85) and test-retest reliability (Pulin, Hand, & Boudreau, 2005). Validity was also established based on correlations with other assessment tools (Radloff, 1977). A sample item: “In the past week, I was bothered by things that don’t usually bother me”

(Lewinsohn et al., 1997). CESDR is the most commonly used measure of depression among Indigenous youth, but has not been evaluated within Canadian Inuit communities, and has shown to have a good model fit, with an RMSEA of 0.6 (Carleton, Thibodeau, Teale, Welch, Abrams, Robinson & Asmundson, 2013).

Hopelessness Scale for Children (HSC; Kazdin, Rodgers, & Colbus, 1986) contains 17 true-false items, which describe negative future expectations and negative present attitudes. HSC was developed for use with children aged six through thirteen (Kazdin et al., 1986). Scores range from 0 to 17. Internal consistency is $\alpha = 0.97$ and test-retest reliability is $r = .52$. HSC correlated positively with depression ($r = .58$) and negatively with self-esteem measures ($r = -.61$) and social skills ($r = .39$) (Kazdin et al., 1986). A sample item: “I might as well give up because I can’t make things better for myself” (Kazdin et al., 1986). This questionnaire has good internal consistency with Indigenous youth, $\alpha = 0.86$, but has not been evaluated within Canadian Inuit communities (Stewart, Sherry, Comeau, Mushquash, Collins & Van Wilgenburg, 2010).

Child and Youth Resilience Measure – Short (CYRM; Liebenberg, Ungar & LeBlanc, 2013) is a 12 item self-report measure that includes three dimensions (Individual, Relational and Contextual) that reflect the major categories of resilience. Raters have to choose whether the sentences describe them and endorse either “No”, “Sometimes” or “Yes”. The scale was developed for use with youth ages thirteen to twenty-two (Liebenberg et al., 2013). Internal consistency had Cronbach’s alpha ranging from 0.65 to 0.91 (Liebenberg, Ungar, & Van de Vijver, 2012). A sample item: “When things don’t go my way, I can fix it without hurting myself or other people (for example hitting others or saying nasty things)” (Liebenberg et al., 2013). CYRM has frequently been used with Indigenous populations, showing good content and

internal validity, but has not been evaluated within Canadian Inuit communities (Liebenberg et al., 2013).

Cognitive Emotion Regulation Questionnaire – Short (CERQ; Garnefski, Kraaij, & Spinhoven, 2001) is an 18-item measure used with adolescents and has good psychometric properties. It is composed of 9 coping styles (including rumination and four adaptive styles that are related to resilience), which are each coded as separate subscales of emotion regulation. A Likert-type scale of 1 (*Almost never*) to 5 (*Almost always*) is available for responses. The CERQ was developed for use with youth and adolescents aged eighteen through to sixty-five (Garnefski et al., 2001). Cronbach's alpha coefficients range from 0.68 to 0.83 for the 9 subscales. Test-retest reliability ranged from $r = .48$ to $.65$ (Garnefski et al., 2001). A sample item: "I keep thinking about how terrible it is what I have experienced" (Garnefski et al., 2001). CERQ has been applied to Indigenous populations, no official reliability or validity values have been published. It has not been evaluated within Canadian Inuit communities.

Data Analysis. No formal power calculations were conducted prior to beginning this study. This was decided upon because of the challenges encountered with youth recruitment, and the knowledge that an idealized sample size would not likely be attainable. It is standard that with a pilot project undertaken in remote communities, such as Study 1, there exists fewer expectations for recruiting an adequate sample size. To analyze mental health changes in Canadian Inuit youth over time, as measured through the four questionnaires, paired samples t-tests and repeated measures ANOVAs (Analysis of Variance) were conducted via SPSS software. The paired samples t-tests allowed for comparisons of the youth's pre- and post-intervention outcomes, whilst repeated measures ANOVAs allowed for examining the effect of time interacting with the intervention or the waitlist control groups. For both t-tests and repeated

measures ANOVAs, data from Group A and Group B were pooled. This was a result of missing data across groups, as well as to account for fewer Group B youth having completed post measures. This means there was some loss in accuracy of the data due to the omission of select cases that did not fit the structure of these simpler statistical methods.

As a result, Mixed Models (multilevel regression models) were also conducted via SPSS software. Multilevel regression models were used to keep in context the complete structure of the study, i.e. the comparison of the intervention group (Group A) and the waitlist group (Group B), at all (up to three) time points for the pre-measures and post-measures (Group A: pre-measure at time 1, post-measure at time 2; Group B: pre-measure at time 1, pre-measure at time 2, post-measure at time 3). Multilevel regression models were appropriate for Study 1 given their ability to analyze individual differences across different treatment options (time points for youth in Group A versus Group B). Results of the multilevel regression models are considered the most accurate as they use all the non-missing data (important with a small sample size), reflect the full design of the study, and compare between Group A and Group B at different time points. Multilevel regression models were fit with a) a randomly varying intercept for each youth in order to account for differing means and variation on the measures (levels of personally identified health) and b) an intervention indicator variable (0 for not having started playing the SPARX program versus 1 for completed the treatment of playing SPARX) in order to account for the effect of the treatment (i.e., engaging in SPARX). A time variable was not needed as there were at most two (Group A) to three (Group B) measurement occasions with a horizontal, time independent, trajectory after accounting for the effect of the intervention.

The primary outcome measures were: CYRM to measure Resilience; HSC to measure Hopelessness; CESDR to measure Depression; and CERQ-SHORT to measure subscales of:

Self-blame (score 1), Acceptance (score 2), Focus on thought/rumination (score 3), Positive refocusing (score 4), Refocus on planning (score 5), Positive reappraisal (score 6), Putting into perspective (score 7), and Catastrophizing (score 8).

Results

Table 4

Descriptive statistics by group and time point

<u>Outcome Measure</u>	<u>Group A</u>		<u>Group A</u>		<u>Group B</u>		<u>Group B</u>		<u>Group B</u>	
	<u>Time 1</u> N = 20		<u>Time 2</u> N = 13		<u>Time 1</u> N = 28		<u>Time 2</u> N = 19		<u>Time 3</u> N = 10	
	<u>Mean</u>	<u>SD</u>								
CYRM Resilience	44.70	8.04	41.07	10.22	43.32	7.54	43.62	9.44	45.30	8.42
HSC Hopelessness	4.52	2.75	3.79	3.09	5.39	2.50	4.73	3.34	3.67	2.58
CESDR Depression	22.90	8.30	23.21	8.86	25.50	8.54	23.68	8.58	21.20	7.60
CERQ-SHORT SUBSCALE 1 Self-blame	4.90	2.70	5.00	1.84	6.04	2.13	6.10	2.13	4.20	1.75
CERQ-SHORT SUBSCALE 2 Acceptance	6.30	2.24	5.64	2.20	7.39	2.33	7.26	2.37	7.90	1.73
CERQ-SHORT SUBSCALE 3 Focus on thought /rumination	5.70	2.39	5.07	1.90	7.07	2.16	6.68	2.29	6.00	1.89
CERQ-SHORT SUBSCALE 4 Positive refocusing	5.60	1.79	5.21	2.19	5.29	1.90	5.58	2.27	6.40	2.07
CERQ-SHORT SUBSCALE 5 Refocus on planning	7.10	2.40	5.86	2.51	6.50	2.23	6.58	2.24	6.10	2.42
CERQ-SHORT SUBSCALE 6 Positive reappraisal	7.40	2.35	7.07	2.30	8.00	1.61	7.68	1.82	6.70	2.47
CERQ-SHORT SUBSCALE 7 Putting into perspective	6.40	2.39	5.79	2.01	6.43	2.28	6.32	1.60	5.50	2.37
CERQ-SHORT SUBSCALE 8 Catastrophizing	5.50	2.70	4.29	1.07	6.50	2.46	5.89	2.51	5.60	2.41

Hypothesis one: Youth who completed the SPARX program were expected to experience a decrease in risk factors related to depression, with primary outcome measures of CESDR, HSC, and CERQ questionnaires. Participating youth reported feeling less hopeless, and engaged in less self-blame, focus on thought/rumination, and catastrophizing following the SPARX intervention. The intervention was a statistically significant predictor of the Hopelessness Scale for Children (HSC) score, $b = -1.08$, $t(51.1) = -2.17$, $p = .017 < .05$ (one-tailed based on the *a priori* hypothesized direction of improvement in health). The intervention decreased the HSCORE score: Hopelessness by 1 (1.08) unit. The intervention was a statistically significant predictor of the CERQ-SHORT Subscale score 1 (Self Blame), $b = -0.86$, $t(53.2) = -1.95$, $p = .028 < .05$ (one-tailed). The intervention tended to decrease the CERQ-SHORT Subscale score 1: Self-blame by close to 1 (0.86) unit. The intervention was a statistically significant predictor of the CERQ-SHORT Subscale score 3 (Focus on Thought/Rumination), $b = -0.77$, $t(53.6) = -1.84$, $p = .035 < .05$ (one-tailed). The intervention was a statistically significant predictor of the CERQ-SHORT Subscale score 8 (Catastrophizing), $b = -0.90$, $t(52.7) = -2.00$, $p = .025 < .05$ (one-tailed).

For scores on the Centre for Epidemiologic Depression Scale – Revised (CESDR), and the Cognitive Emotion Regulation Questionnaire – Short (CERQ) subscale scores 2, 4, 5, 6, and 7 (Acceptance, Positive Refocusing, Refocus of Planning, Positive Reappraisal, Putting into Perspective) the intervention indicator variable at the $\alpha = .05$ level (two-tailed, and where relevant one-tailed) was not statistically significant.

Hypothesis two: Youth who completed the SPARX program were expected to experience an increase in factors related to resilience. Youth in the study did not show an

increase in formal resilience indicators. The Child and Youth Resilience Measure – Short (CYRM) intervention indicator was not statistically significant at the $\alpha=.05$ level (two-tailed).

Table 5

Overview of outcomes following the SPARX intervention

<u>Primary Outcomes:</u> <u>Scale or</u> <u>Subscale</u> <u>Score</u>	<u>Desirable</u> <u>Direction of</u> <u>Improvement</u>	<u>Pre Score</u> <u>(Pooled</u> <u>Group A and</u> <u>Group B)</u>	<u>Post Score</u> <u>(Pooled</u> <u>Group A and</u> <u>Group B)</u>	<u>Pre to Post t-</u> <u>test (Pooled</u> <u>Group A and</u> <u>Group B)</u>	<u>Repeated</u> <u>Measures</u> <u>ANOVA</u> <u>(Pooled</u> <u>Group A and</u> <u>Group B)</u>	<u>Mixed Models</u> <u>(multilevel</u> <u>regression</u> <u>models)</u> <u>(Comparing</u> <u>Group A and</u> <u>Group B)</u>
CYRM Resilience	↑	47.389	44.389	Post ↓	Intervention↓	Intervention↓
HSC Hopelessness	↓	4.458	3.667	Post↓ <i>(p=.078)*</i>	Intervention↓	Intervention↓ <i>(p=.017)*</i>
CESDR Depression	↓			Post↑	Intervention↑	Intervention↑
CERQ-SHORT SUBSCALE 1 Self- blame	↓	5.348	4.609	Post↓	Intervention↓	Intervention↓ <i>(p=.028)*</i>
CERQ-SHORT SUBSCALE 2 Acceptance	↑	6.238	6.476	Post↑	Intervention↓	Intervention↓
CERQ-SHORT SUBSCALE 3 Focus on thought /rumination	↓	6.174	5.478	Post↓ <i>(p=.045)*</i>	Intervention↓	Intervention↓ <i>(p=.035)*</i>
CERQ-SHORT SUBSCALE 4 Positive refocusing	↑	5.286	5.476	Post↑	Intervention↓	Intervention↑
CERQ-SHORT SUBSCALE 5 Refocus on planning	↑	6.905	5.9524	Post↓	Intervention↓	Intervention↓ as <i>(p=.084,</i> <i>two-tailed)</i>
CERQ-SHORT SUBSCALE 6 Positive reappraisal	↑	7.714	6.905	Post↓	Intervention↓	Intervention↓ as <i>(p=.054,</i> <i>two-tailed)</i>
CERQ-SHORT SUBSCALE 7 Putting into perspective	↑	6.381	5.762	Post↓	Intervention↓	Intervention↓
CERQ-SHORT SUBSCALE 8 Catastrophizing	↓	5.435	4.7826	Post↓ <i>(p=.049)*</i>	Intervention↓ <i>(p=.037)*</i>	Intervention↓ <i>(p=.025)*</i>

as= Approaches significance

Significant results are shown in **bold font**

* $p<.05$; (one-tailed, unless otherwise indicated)

N=22

Discussion

Overall key findings suggest that youth who completed the SPARX trial learned new cognitive emotional regulation strategies to help support them in challenging maladaptive thought patterns. Youth also appeared to experience less hopelessness after engaging in SPARX. No formal indication of a decrease in depressive symptoms or an increase in resilience was noted after engaging in the SPARX program.

Youth who completed the SPARX program were expected to show a decrease in depressive symptoms and dysfunctional cognitions post-intervention. Outcome measures provided by Canadian Inuit youth in this study suggested that SPARX may be an effective program for decreasing feelings of hopelessness, as well as self-blame, rumination and catastrophizing, the last three of which help make up cognitive emotion regulation skills. Cognitive emotion regulation has consistently been linked to mental health, with those who possess greater regulation strategies better able to cope with stressful or adverse life experiences (Garnefski, Boon & Kraaij 2003). Above average self-blame, rumination and catastrophizing are three factors known to be highly correlated with poor emotion regulation and mental health difficulties, such as depression or anxiety (Garnefski et al., 2006). Youth who tend to ruminate on negative events, catastrophize, or self-blame are more likely to develop depressive symptoms. This may be because youth with depressive affect are more likely to process and appraise adverse or stressful life events in a more negative manner, and to spend more time ruminating about the event. These youth have increased difficulty inhibiting and regulating their appraisal, which likely leads to more catastrophizing thoughts (Joorman & Gotlib, 2010). Further, youth who use positive emotion regulation strategies, such as reappraisal, problem solving or

acceptance, show fewer depressive symptoms than youth who ruminate, avoid, and appraise negatively (Schäfer, Naumann, Holmes, Tuschen-Caffier & Samson 2017).

Though depressive symptoms on a whole did not decrease after the SPARX trial, results suggest a decrease in negative emotion regulation strategies. This is encouraging given the evidence that negative coping styles are associated with greater depressive symptoms (Schäfer et al., 2017). With a reported decrease in self-blame, catastrophizing and rumination strategies, youth may develop enhanced coping strategies to deal with negative and adverse life events. Further, the decrease in hopelessness is promising given the extant literature linking hopelessness with depression and suicide. Indeed, hopelessness has been one of the most important mental health factors examined in attempts to understand suicidal behaviour and has been linked to suicide in Indigenous populations (Deane, Coralie & Joseph, 2001; LaFromboise, Albright & Harris, 2010). Though small in scale, it is encouraging that results show a decrease in hopelessness and an increase in cognitive emotion regulation strategies. This supports the need to further examine the effectiveness of SPARX on a larger scale. It is possible that no formal indicators of a decrease in depression were noted because: 1) the questionnaires used may not have been culturally appropriate, 2) the way depression is understood by Canadian Inuit communities may differ from how Western literature understands it, and 3) there was a small sample size.

Youth who completed the SPARX program were expected to experience increased resilience post-intervention. Outcome measures provided by youth did not suggest a change in the resilience measure pre to post game play. This is surprising given the promising results for factors such as hopelessness, catastrophizing, rumination and self-blame. One explanation for understanding why the resilience measure was not significant is simply the small sample size of

this study. It is also possible that the resilience measure itself was not culturally relevant nor appropriate and did not tap into an Canadian Inuit framework of resilience. Despite the lack of significant changes recorded in the formal measures of resilience, there is reason to believe that a decrease in the hopelessness scale may promote and foster greater resilience for participating youth (LaFromboise et al, 2010). If SPARX is successful in teaching cognitive emotion regulation skills and decreasing hopelessness, it is possible that it may prove to be an effective treatment for decreasing depressive symptoms and boosting resilience when assessed in a larger scale study.

Youth in Nunavut disproportionately struggle with mental health concerns in comparison to Canadian youth in other territories or provinces. Despite this disparity, Canadian Inuit youth lack access to mental health services, largely because of a shortage of staff to provide and assist with many potentially helpful evidence-based treatments, which is a result of continued oppression, marginalization and colonized practice experienced by these communities. (Bennett et al., 2010; CSP, 2013). By developing mental health programs that do not require staff support, it may be possible to overcome this barrier. Extant literature documents the success of computer based Cognitive Behavioural Therapy (cCBT) programs in increasing access to mental health resources for youth (Cheek et al., 2014). A 2013 review of over 100 studies evaluating the use of e-interventions for children and youth struggling with mental health needs showed that technology-assisted interventions are becoming an increasingly common form of service delivery in Australia, New Zealand, the United States, the United Kingdom, Canada and the Scandinavian countries (Boydell, Michael, Antonio, John, Helen & David, 2014). Studies in these countries are overwhelmingly supporting e-interventions as successful therapeutic tools. In addition to their clinical benefit, results suggest enhanced access to services, increased interest in accessing

services from youth informants, decrease in costs associated with providing traditional services, breakdown in barriers associated with providing traditional services, and greater quality of life for those who access e-interventions (Boydell et al., 2014). In another review focusing on e-interventions specifically for youth experiencing anxious or depressive symptoms, the authors found that, overall, technology to support mental health was useful in decreasing anxious and depressive symptoms, increasing youth engagement in service, and rising quality of life satisfaction with family members (Stasiak, Fleming, Lucassen, Shepherd, Whittaker & Merry, 2016).

Further, a growing field of research is specifically examining the use of these programs in remote or Indigenous communities, with promising results continuing to show the effectiveness of computer-based programs (Cheek et al., 2014). E-interventions have been shown to be successful in many remote communities as they increase access, breakdown barriers and fill in a gap of service provision (Boydell et al., 2013; Lucassen, Rajvinder, Iacovides, Fleming, Shepherd, Stasiak & Wallace, 2018; Myers, Cummings, Zima, Oberleitner, Roth, Merry, Bohr & Stasiak, 2018; Myers & Comer, 2016). SPARX (Smart, Positive, Active, Realistic, X-Factor thoughts) is a computer-based intervention program that was developed to support youth wellness by teaching skills that help to reduce symptoms of depression and stress. An examination of the SPARX program in Australian and New Zealand Indigenous communities suggested that youth found the program useful in combating depressive thoughts, as well as decreasing feelings of social isolation (Cheek et al., 2014). Given this prior success of SPARX in Indigenous communities, the current study aimed to establish whether SPARX would be an effective intervention for fostering resilience and decreasing risk of depression with Canadian Inuit youth in Nunavut. It appears as though SPARX may be a good first step for supporting

youth with skill development, such as challenging their maladaptive thoughts, and providing behavioural management techniques, such as deep breathing. Further exploration is required to understand whether SPARX can be effective in decreasing symptoms of depression.

Limitations

We encountered several unforeseen challenges during the implementation of this pilot study: 1) complications with youth recruitment, which resulted in the adoption of less rigid exclusion criteria. Inclusion thus allowed for participation from both youth displaying signs of acceptable resilience and those with more significant mental health difficulties ; 2) complications relating to the staffing of facilitators due to the short work contracts that are typical in the territory, which resulted in high staff turnover, frequent staff re-training and youth attrition; 3) unavoidable deadline extensions due to staffing challenges, technological difficulties, and barriers in communication; and 4) a poorly matched control and intervention group when it came to sample size, duration and frequency of play for youth in each group. The numerous challenges encountered caused the current study to be drawn out over nine months instead of the proposed four. Flexibility and patience were required from the youth and community facilitators as deadlines were regularly shifted, and adaptations in methodology were required.

The procedures for this study, specifically with regards to the intervention and control group, were decided upon so that spontaneous remission of mood problems and changes due to daylight hours and temperature in the North could be minimized. This was managed by having youth in the control group exposed to SPARX two months after youth in the intervention group completed their play. However, after many challenges were encountered, a strict deadline was set for the end of the study, and thus many youth in the control group were given a shorter time allowance for completing the SPARX program. Differences between the two groups in the

frequency and duration of their SPARX play undermined the advantages of having a control group. Further, due to this change in deadline, there were fewer youth who participated in the control group. In addition, for ethical reasons, no participating youth were denied access to SPARX. Without a standard control group, it is impossible to confirm whether any recorded improvements resulted from additional factors, such as access to a video game or community facilitator.

Unmatched sample sizes across the intervention and control groups, and an overall smaller than anticipated sample size also weakened the scientific integrity of this study. Study 1 was initially designed for a sample size of 75, but due to the numerous challenges in youth recruitment, youth attrition, staff turnover and communication barriers, a total of 49 youth participated in Study 1. 22 of these youth completed Study 1, representing an attrition rate of over 50%. A small sample size reduces power, makes it difficult to detect small pre- to post-intervention changes, and diminishes the chances of obtaining any statistically significant results.

Despite these limitations, it was nevertheless surprising to the research team that not more statistically significant findings were recorded. One possible explanation offered for this is that the questionnaires used in this study, which were designed and systematized based on Western, Euro-centric concepts, did not properly access Canadian Inuit experiences and expressions of mental health. The Euro-centric depictions of depression, hopelessness and resilience addressed in these questionnaires may have not been meaningful to Canadian Inuit youth in the same way they are in populations for which they were developed. It is also possible that the use of the English language in the questionnaires was too advanced for some of the Canadian Inuit youth despite staff being available to assist with this. For youth who experienced difficulty with reading, there may have been shame involved in asking for support and thus some

assistance avoiding behaviour when it came to completing questionnaires. It is possible that using local dialect for questionnaires would better support youth's detailing of mental health difficulties. Further, as there were multiple questionnaires, each asking for personal and often emotionally laden information, it is possible that youth tired during the process and did not attend to questions as precisely as necessary.

Finally, many systemic barriers challenged this study. The inconsistent access to internet service in most communities proved difficult for the administration of questionnaires, collection of data, and the monitoring and recording of participation. The high turnover of community facilitators created confusion with frequent changes in role, inadequate time provided for training and knowledge mobilization, and relationship development with participating youth. The inordinate workload of community facilitators made it all but impossible for them to consistently dedicate adequate time to working with youth on SPARX. The conditions under which the trial was administered understandably created ambivalence among community facilitators, who were often in favour of an intervention that might eventually benefit their communities, but also struggled with the additional workload it required. All of these barriers, including short staff contracts, high staff turnover, youth attrition, inordinate mental health needs, lack of phone or internet access, and communication difficulties are all closely linked to continued colonization practices. Canadian Inuit youth continue to face systemic challenges and disparity in access to resources as a result of poor government funding and a lack of consultation with communities as per their needs.

Future Directions

There are some preliminary findings that may suggest SPARX could lead to improvement with depressive symptoms, however some findings that suggest youths' mood did

not change after SPARX engagement. It will be important to replicate this study on a larger level, including more youth across more communities. To access more youth, it may be beneficial to allow for online play. This will also have the benefit of increasing the research rigour, by allowing for monitoring of engagement, frequency of play and length of play. It will be important to add a true control condition in the next trial in order to ensure that SPARX'S effectiveness can be more conclusively established. With the encouraging, yet sometimes surprising results presented in Study 1, it will be important to gauge what mental health and lack thereof, for example depression, means to Canadian Inuit youth. This will help foster an understanding of more culturally appropriate questionnaires to use in trying to access youth experiences with SPARX. Additionally, using measures that have been validated in the Canadian Inuit culture may help ensure that youth can more accurately report their mental health status. With a more culturally appropriate model for understanding Canadian Inuit youth mental health symptomology, an assessment of mental health change attributed to the SPARX program may be more accurate.

Learning from the many barriers encountered in Study 1 will allow for a more rigorous approach to conducting future research. It will be important to examine these barriers and try to address them in any future protocol. For example, having a community facilitator working specifically on SPARX will better support youth engagement, and mitigate the risks of attrition. It will also foster greater trust between the youth and community facilitator, which may allow for decreased mental health stigma, and likely higher rates of participation. Working in the schools might map on well to the school curriculum and also help with recruitment, generalization of skills and enhanced youth interest. Having a York researcher on site in the communities may help with supporting the community facilitator, troubleshooting any technological difficulties

and minimizing communication barriers encountered. With these extra supports, and a potential for more rigorous research (a true control group for example), it will make effectively evaluating the usefulness of the SPARX program more feasible. Additionally, it may be advisable to hire a handful of resilient youth from each community as “youth champions”. These youth will promote SPARX, advocate for the program, and through their role, help reduce the mental health stigma their communities may be facing.

Further, with future funding, it would be ideal to create a Canadian Inuit version of the SPARX program that will be tailored to fit the interests of Canadian Inuit youth and elders and increase engagement and effectiveness of the program. A Canadian Inuit version of the SPARX program would likely enhance the effectiveness of the program in Nunavut communities. Existing studies suggest that incorporating one’s culture into an already compelling psycho-educational game has the potential to promote cultural esteem and community-based resilience, in addition to fostering individual resilience.

Study 2

Introduction

SPARX as an intervention for depression with Canadian Inuit youth: Perceptions and experiences. Given the concerning epidemic proportions of youth mental health problems in Canadian Indigenous communities, many of these communities are looking for novel approaches to prevention and intervention for their youth. Based on existing empirical findings, many communities are now seeking to integrate evidence-based approaches to the prevention of suicide and treatment of depression with cultural practices that have been shown to build resilience (Kirmayer et al., 1993; Kirmayer et al., 1999). Research suggests that enhanced cultural pride and connectedness supports community wide resilience and in turn helps decrease

rates of youth suicide (Fleming et al., 2008; Kirmayer et al., 1993; Kirmayer et al., 1999; Lalonde, 2006; Wexler, 2014). The goal of study 2 was to understand the benefits and drawbacks of Maōri -SPARX, through a review of the experiences of Canadian Inuit youth and community facilitators who participated in the trial. In developing Study 2, it was decided that the Western researchers should not rely on quantitative data to assess the effectiveness of the SPARX trial without also understanding the learnt and felt experiences of the Canadian Inuit participants and community facilitators. One of the cornerstones of the Canadian guidelines for conducting research in partnership with Indigenous communities is to give participants in a program evaluation a voice to express their experiences with the program. To achieve this goal, findings were not limited to understanding depressive symptoms and resilient functioning but instead allowed for further exploration of cultural appropriateness, community needs and mental health. Exploration of distal versus proximal stressors were also made possible through the application of the *Ecological Systems Model of Cultural Resilience*. This allowed for a focus on historical struggles as a root cause for current mental health difficulties, while also understanding contemporary stressors in the context of current mental health difficulties and more historical forms of oppression.

A qualitative approach was used to explore the youths' experience of playing SPARX: whether it was helpful and/or accessible or perhaps lacked desirability; whether youth found the Indigenous (Maōri) version of SPARX culturally acceptable (and, if not, what components of Canadian Inuit culture they might like to see integrated into an adapted, Canadian Inuit-specific version); and, last, whether using a Western-centric lens on mental health in the assessment of both resilience and depression was perceived to be culturally appropriate, and how to support the development of a more culturally appropriate version. A quantitative-dominant mixed methods

approach was chosen to compliment the use of questionnaires in Study 1, while also accounting for the experiences of SPARX participants (Johnson, Burke, Onwuegbuzie & Turner, 2007). With the contribution of a qualitative portion, by conducting semi-structured focus groups, a broader interpretation and examination of SPARX was feasible. This allowed for the consideration of the strengths and limitations of SPARX as a mental health program, and also allowed for an assessment of the cultural appropriateness of the program. Study 2 made use of exit focus groups that were held with youth and community facilitators following the completion of SPARX game play. No hypotheses were generated for this study, with the goal of allowing youth to talk about their experience with SPARX in an open-ended way, without any preconceived notions. A qualitative, open ended, and bottom up approach was used. While acknowledging that no collection nor analysis of data are ever be entirely objective, as the researcher herself brings her own subjectivity to the research, every effort was made to not allow preconceived notions to colour the research process described below.

Methods

Participants. All youth who completed Study 1 were invited to participate in exit focus groups upon the completion of SPARX play. Community facilitators who facilitated the SPARX program were also invited to participate in focus groups. Eleven youth and 7 community facilitators participated in Study 2, representing 46% of youth, 73% of community clinicians, and 54% of communities. Participant and community facilitator demographic information was not collected due to the importance of respecting the privacy of youth who had participated in Study 1. As youth had provided quantitative information regarding their mood, it was believed important to respect their confidentiality and not connect them to this data through exit focus groups. In addition, as focus groups were held via teleconferencing, their anonymity was

promised over the phone, so that each participant would not be able to identify their peers in the focus groups. Please see Appendix E for participant demographic information. See Appendix F for a description of the communities that participated in both youth and facilitator focus groups.

Procedure.

Ethical approval. Approval for this study was obtained through the Human Participants Sub-Committee of the York University Office of Research Ethics. Approval was also obtained from the university's Advisory Group for Research Involving Indigenous Peoples. This subcommittee is guided by Chapter 9 of the Tri-Council Policy Statement "Research involving the First Nations, Inuit, and Métis Peoples of Canada", and its own Guidelines for Research Involving Indigenous/Indigenous Peoples. In addition, the research team received a research license from the Nunavut Research Institute (NRI). Lastly, an independent review of the proposed project was also conducted by the Elder Council of the Clyde River community.

Design. Upon completion of Study 1, all youth and community facilitators were invited to participate in exit focus groups via teleconferencing. Youth focus groups were held separately from community facilitator focus groups. Participation in focus groups was voluntary for both youth and community facilitators. The focus group facilitator was based out of York University and provided all participants with a phone number for a Bell conference line, which they were asked to call into. Focus groups were recorded by Bell teleconferencing, and kept for a 30 day duration. A research assistant and this researcher transcribed all focus group data.

Focus groups lasted on average between 20 minutes to one hour. A total of six focus groups were held with youth, while five were held with community facilitators. The number of focus groups was not pre-determined but transpired due to this researcher trying to meet the needs of the participants. Participants often required rescheduling due to weather storms or acute

crisis. Focus groups followed a semi-structured approach, and concentrated on topics regarding the experiences of participants, thoughts and feedback on SPARX, and how SPARX could be adapted to meet the needs of Canadian Inuit youth. Focus groups started more open-ended, inquiring more generally about the experiences with SPARX and became more specific as they continued. This included understanding the particulars around likes, dislikes, and desired adaptations or outcomes to the SPARX program. The script used for focus groups can be found in Appendix G.

Data Analysis. Inductive thematic analysis was used to analyze the qualitative data derived from the semi-structured focus groups. Thematic analysis allows for coding of novel umbrella ideas that lead to a fuller understanding of emerging topics (Braun & Clarke, 2006). Thematic analysis supports the integration of Canadian Inuit modes of life, tradition and culture while also fostering the development of overarching themes, which is important in this project given the goals of understanding youth's experience with SPARX (Braun & Clarke, 2006). Thematic analysis takes an inductive approach; themes were generated from the focus groups, as opposed to being generated in order to fit preconceived notions of youth experience (Braun & Clarke, 2006). *Dedoose*, a qualitative and mixed method online computerized software was used to assist with the organization and clustering of codes and the development of global themes (Lieber, 1990). Coding was completed by the focus group facilitator (this researcher) and cross-checked by her supervisor, Dr. Yvonne Bohr. Focus groups were coded separately for youth and community facilitators. See Appendix H for themes that were discussed in focus groups.

Results

Four themes and their subthemes will be discussed for each youth and community facilitator focus groups.

Table 6

<i>Focus group themes and subthemes</i>			
<u>Youth Themes</u>	<u>Youth Subthemes</u>	<u>Community Facilitator Themes</u>	<u>Community Facilitator Subthemes</u>
<i>Increased resilience and showed a decrease in risk factors related to depression</i>	1) Improved emotion regulation through the development of coping skills 2) Improved insight into adverse experiences	<i>Increased resilience and showed a decrease in risk factors related to depression</i>	1) Youth showed improved emotional intelligence 2) Youth showed improved emotion regulation 3) Youth improved their social interactions 4) Youth were empowered by the SPARX Program
<i>The SPARX program represented enhanced access to prevention and intervention for participants</i>	1) Importance of SPARX for the community 2) Changes to program accessibility	<i>The SPARX program represented enhanced access to prevention and intervention for participants</i>	1) SPARX as a useful and relevant therapy program 2) Importance of SPARX for the community 3) Barriers to service accessibility 4) Changes to program accessibility
<i>Participating Canadian Inuit youth reported that the Indigenous (Maōri) version of SPARX is not ideally suitable from a cultural perspective. Challenges faced in participation</i>	1) Culturally driven stylistic changes. 1) Short-term VS long-term effects 2) Over-simplification 3) Technical difficulties	<i>Participating Canadian Inuit youth reported that the Indigenous (Maōri) version of SPARX is not ideally suitable from a cultural perspective. Challenges faced in implementation</i>	1) Culturally driven stylistic changes. 1) Technical difficulties 2) Recruitment and attendance difficulties

Youth who completed the SPARX program reported experiencing increased resilience and showed a decrease in risk factors related to depression; this was supported by community facilitators. Themes emerged from both youth and community facilitator reports

that supported the benefits of the SPARX program. For youth specifically, two themes emerged: *Improved emotion regulation through the development of coping skills and Improved insight into adverse experiences*. For community facilitators, an additional four themes emerged: *Youth showed improved emotional intelligence; Youth showed improved emotion regulation; Youth improved their social interactions; and Youth were empowered by the SPARX Program*.

Youth feedback. *Improved emotion regulation through the development of coping skills.*

Youth spoke positively of the SPARX program and described an increased ability to regulate themselves and their emotions. Youth described new perspectives on how to deal with adversity, stating that they learnt to control their mood in order to control the outcome. Youth spoke of feeling empowered by their improved emotion regulation abilities and feeling like their emotions could not be as easily manipulated by others. They spoke of having greater tolerance for adverse experiences because of being able to use these skills. One youth stated:

“When me and my boyfriend are fighting or when other people are giving me a hard time. I try to relax and think about, just mostly try to think about happy thoughts” (Youth 2, Community 1).¹

Importantly, youth described learning about emotion regulation through the development of concrete coping skills. The coping skills described as most effective included: challenging negative thoughts, deep breathing, muscle relaxation exercises, and the use of distractions such as reading, listening to music or playing sports. Youth described using the coping skills to remain calm in situations that would have previously caused them to feel dysregulated. Further, youth detailed using coping skills to improve their interactions with peers, significant others and family members. One youth stated:

¹ To maintain confidentiality of youth participants, community names are not provided for youth quotes

“I sometimes get angry really easily and after actually practicing the breathing and the muscle tensing I think it’s easier to calm down now ... I used that muscle control when people ... are being idiots, like it’s mostly when people are being loud and obnoxious, sometimes I get really mad, I try to breathe and relax my muscles” (Youth 3, Community 1).

Another youth stated:

“Usually if someone makes fun of me too much I would start fighting them, but now I just take deep breaths and tell the nearest teacher” (Youth 1, Community 2).

Improved insight into adverse experiences. Youth described their communities as burdened by challenges that can bring out the worst in people. They reported noticing, for a first time, alternative ways that adversity in their communities can be dealt with. Youth explained that one may have to push through the negatives in life in order to make experiences more positive. One youth stated, referring to the GNATS (Gloomy Negative Automatic Thoughts) that play a prominent role in SPARX:

“It makes you think about answers, like the GNATS, they give you something negative and you got to think positive about it and you got to find the positive answers, the right ones for each GNAT. I found it challenging, that’s how you can keep yourself happy ... Trying to find a gem and trying to make the GNAT become positive or something and making the people’s world brighter, cause it’s so depressing, like from the GNATS, like no one wants to go to a place where there’s GNATS...They want to go back to how it was before the GNATS even got there.” (Youth 2, Community 3).

Community facilitator feedback. Youth showed improved emotional intelligence.

Community facilitators reported noticing that SPARX enhanced youth’s capacity to deal with emotions and identify their feelings. Emotions identified were primarily externalizing ones such as stress, frustration, and anger. One community facilitator stated:

“Kind of helps them develop a better understanding of what they’re experiencing and ways of identifying their emotions and realizing that they’re not alone. They have a better way of absorbing the information through a fun,

non-kind of intrusive, intimidating manner” (Community facilitator, Community 1).²

Youth showed improved emotion regulation. Community facilitators reported that youth developed new strategies to help them better regulate their emotions. These strategies were specifically noted in discussing how to manage difficult social situations. Community facilitators reported that youth were better able to deal with stress and frustrations, and further stated that youth were coming in to share how they had managed a challenging situation. Again, Community facilitators specifically spoke of youth’s ability to deal with externalizing emotions, such as anger, frustration, stress, and irritability. One community facilitator stated:

“Two of them who completed the game, they liked it very much, and they told me it helped their mood, and it helped with the way they cope with stress and the way they cope with frustrations. They were happy it really helped them. So ... what the game was designed to accomplish, was really accomplished, so that was a good thing” (Community facilitator, Community 2).²

Youth improved their social interactions. Community facilitators noticed that youth were engaging in healthier relationships and peer interactions after completing the SPARX program. They further reported noticing that youth were more confident in their peer, romantic, and familial relationships. One community facilitator stated:

“They were aware of their feelings and how they reacted to things. Like in different situations in the school. I see a difference in them interacting with their friends” (Community facilitator, Community 3).

Youth were empowered by the SPARX Program. Community facilitators reported noticing that youth felt empowered by completing SPARX. Community facilitators discussed the benefit of the SPARX program being tailored to fit with the youth culture, noting that it allowed youth to process the intervention and its’ skills at their own pace and comfort level. They

² To maintain confidentiality of community facilitators, community names are not provided for facilitator quotes

remarked on how youth were better able to absorb the material and make use of the skills because of the personalized mode of learning. One community facilitator stated:

“Teaching and learning at their own pace, and their own comfort, again rather than coming into the clinic, sitting there, talking about emotional distress, recognizing triggers, emotions, how it tends to escalate. I think they absorb it a lot better if it’s done at their comfort” (Community facilitator, Community 1).

The SPARX program represented enhanced access to prevention and intervention for participants. Both youth and community facilitators reported a need for increased access to prevention and intervention tools in their respective communities. For youth specifically, two themes emerged detailing a desire for SPARX to be more accessible for others in their community: *Importance of SPARX for the community* and *Changes to program accessibility*. For community facilitators, four themes emerged regarding access to prevention and intervention: *SPARX as a useful and relevant therapy program*; *Importance of SPARX for the community*; *Barriers to service accessibility*; and *Changes to program accessibility*.

Youth feedback. *Importance of SPARX for the community.* Youth reported a desire to have prevention programs accessible in their community, stating a need for a program that can benefit friends and family who are struggling with how to cope. One youth shared:

“Town is mostly drama, and bullying and vandalism, so it’s like kind of depressing, it can help them and make them think positive” (Youth 1, Community 3),

while another stated:

“I see most of them are stressed out about things in their life and I want them to learn the skills I learned in the game” (Youth 3, Community 1).

Changes to program accessibility. Youth spoke of the importance of increasing and easing access to SPARX in their communities. Youth proposed having the program available at the schools in order to minimize barriers they felt burdened with by attending the mental health

office. Further, youth stated that they would like to advocate for SPARX in their community; they inquired about SPARX-related paraphernalia that could help showcase the project. Youth also requested more user-friendly descriptions and pamphlets of the program. One youth stated:

“Is there SPARX games out there that I could buy, like SPARX games, SPARX hoodies, or SPARX hat, like that kinda thing? ... Show other people what information is attached to the hoodies, what they can look into on their spare time on the internet ... it would help them with their issues and whatnot and they can be using it, helping other students too” (Youth 3, Community 4).

Community facilitator feedback. SPARX as a useful and relevant intervention program.

Community facilitators reported satisfaction with how well SPARX mapped on to mainstream therapy techniques such as standard CBT. They also reported a hope that SPARX might increase access to mental health services in the territory. They lauded the program and the skills it is designed to convey, such as deep breathing and relaxation exercises. Furthermore, community facilitators noted that using a video-game format to teach coping skills was more interesting to youth than traditional talk therapy techniques and wondered about the implications for enhanced therapeutic benefits. One community facilitator stated:

“I found the techniques quite relevant, we do utilize some in our practice, like, dealing with negative emotions, using relaxation, distraction, more like mindfulness type techniques...It’s just another way of presenting the tools, that the youth are going to be more receptive to, rather than sitting in an interview and just talking to them. It’s more fun for them...It’s better than an adult kind of lecturing” (Community facilitator, Community 1).

Importance of SPARX for the community. Community facilitators reported that SPARX has the potential to make a positive impact in their communities and detailed the importance of increasing access to mental health programs. They noted that community members have historically been faced with significant adversities and reported feeling that SPARX could provide support by teaching coping skills. Community facilitators reported that both youth and

adults in their communities are often not prepared to deal with adversity, leading to community-wide difficulties with regards to coping. One community facilitator reported:

“Like 150,000 Indigenous, including Inuit, were sent out to school and ... these generations some have anger issues ... and there used to be a lot of alcohol issues but now not much as before to a point... Some of the communities, yeah, some of the communities need skills which they didn't pick up from their parents and are still affected to this day” (Community facilitator, Community 4).

While another community facilitator stated:

“A fun way to learn these important coping skills, and in a poor community it's an issue where we find that our youth are lacking emotional coping skills, so I think I would definitely recommend it” (Community facilitator, Community 5).

Barriers to service accessibility. Community facilitators, in addition to speaking of the need to increase accessibility, detailed many barriers they encountered during the implementation of the SPARX trial. The foremost common barrier discussed was related to time constraints due to their own multiple roles in the community, sometimes across multiple communities. Due to their many responsibilities, community facilitators reported not having the time to commit to the implementation of SPARX. One community facilitator stated:

“Time problem. For those of us who are psychiatric nurses or mental health workers, who need to see regular clients every day, and most of the time you have major lists you have to deal with and this game will suffer when such things happen ... I don't know if you can order professionals or other people in the community can be considered to take it up, especially in an area like mine where I am the only person here” (Community facilitator, Community 2).

The second common barrier discussed was discontinuity. Community facilitators reported that when they were out of their community for training or holidays, youth's gameplay would be infrequent and SPARX participation suffered. Community facilitators reported that during such breaks, youth stopped practicing the skills and were often resistant to continue with SPARX upon their return. One community facilitator stated:

“I think it needed to be continuous because I saw changes when we were consistent, and after a while when we kind of had some breaks when I was out for training, and Christmas holidays were just around the corner, we came back after. They're not really practicing those skills anymore” (Community facilitator, Community 6).

The third barrier discussed was space. Community facilitators reported that their offices were too small to accommodate the youth and many reportedly worked with the schools to allow youth to safely engage in the program.

The fourth barrier discussed was the stigma of mental health. Facilitators described the stigma of mental health as a significant barrier to youth's ability to access the SPARX program. They reported that some youth were hesitant to attend the mental health office to play SPARX. Community facilitators also described some youth as secretive about their play, and resistant to practice the skills because of fear that others may find out. One community facilitator reported:

“The kids that didn't complete it because it was with an environment that was new and it was with mental health and kids at that stage don't want to feel that there is something wrong with them, and it's not so much that there is something wrong with them, it's just learning how to process the situations and having open ideas and being able to do it on their own ... We have a lot of different departments in and out of the building and coming in kind of gets them scared and nervous, they are just trying to identify their own behaviours, feelings and thoughts, and they're coming into mental health, its so stigmatized up North, trying to reach out to them, it's kind of like a battle right” (Community facilitator, Community 7).

Changes to program accessibility. Community facilitators detailed changes that they felt would increase the accessibility of the SPARX program. Community facilitators primarily advocated the need to implement SPARX at schools and use teacher support and assistance. They noted that school participation could help mitigate some of the barriers faced during this project, including difficulties with discontinuity, multiple roles, space limitations and lack of time. One community facilitator stated:

“School-led because then, I mean this program kind of fits in very well with the schools “Oh lei auk tuk” curriculum which also looks at emotions, coping skills, and so maybe that could be somehow tied in and if that could be worked out with the teachers” (Community facilitator, Community 4).

Participating Canadian Inuit youth reported that the Indigenous (Maōri) version of SPARX is not ideally suitable from a cultural perspective. Both youth and community facilitators expressed a desire to have SPARX adapted to better fit with the Canadian Inuit culture.

Youth feedback.

Culturally driven stylistic changes. Youth expressed a desire for a Canadian Inuit-specific version of SPARX and stated that their peers would be more interested in the program if it were more relatable. Youth had concrete ideas for culturally driven changes, including: Canadian Inuit-specific costume changes, such as parkas; incorporating Nunavut-like scenery, such as mountains, ice, lakes, and igloos; and involving more Northern adventures, such as riding on polar bears or fishing. One youth stated:

“I think that it will be more appealing to others to see something familiar in the game” (Youth 2, Community 1).

Another youth stated:

“Just the clothing and the scenery to make it look like it’s land from one of the communities, like just make it look like you’re out on the land and when things get hard, you have to keep going to a destination where you want to be happy” (Youth 1, Community 2).

Community facilitator feedback.

Culturally driven stylistic changes. Community facilitators recommended creating a Canadian Inuit-specific version of SPARX, stating that youth would be more invested in a relatable program. Like youth, community facilitators had concrete ideas for cultural changes but

emphasized the importance of including Elders and community members in the adaptations of the game. One community facilitator stated:

“The youth in Nunavut do a lot of things on the land, and do a lot of things with the snow, so that’s why we are talking about the environment right? These are some of the things that need to be done in the adaptation to really make it look like Nunavut. When they see the outlay, when they see the format, when they see everything they are familiar with and something they can relate to, that can be encouraging to them and that can make them really want to play this game because they are relating to all the things that constitutes the game. So that would be a really good thing to do” (Community facilitator, Community 1).

Using a Western-centric lens on mental health in the assessment of both resilience and depression might not be fully culturally appropriate with Canadian Inuit youth.

Neither youth nor community facilitators spoke of how well the questionnaires mapped on to their own frameworks of mental health. Despite this, both youth and community facilitators repeatedly reported on the SPARX play-related changes specific to externalizing emotions, such as anger, frustration, stress and disappointment. Neither youth nor community facilitators spoke specifically on themes related to sadness, withdrawal, isolation or resilience. One youth stated:

“I can handle anger better, after playing the game I would get angry, I would remember SPARX and it would help me calm down” (Youth1, Community 4).

One facilitator stated:

“The kids were really enjoying the fact that it was anger management type of thing, they were really enjoying it” (Community facilitator, Community 8).

Additional findings.

Challenges in completing the SPARX program. Despite the noteworthy gains youth derived from their engagement with SPARX, both youth and community facilitators described challenges they faced in either participation or implementation. Youth described three barriers to the effectiveness of the program: *Short-term VS long-term effects*; *Over-simplification*; and

Technical difficulties. Community facilitators described two additional barriers: *Technical difficulties*; and *Recruitment and attendance difficulties*.

Youth feedback.

Short-term VS long-term effects. This theme arose mostly with youth who participated in Group A of the SPARX trial and had thus completed their SPARX gameplay four months prior to the focus groups. These youth spoke about not remembering the skills they had learnt during gameplay, and no longer practicing the skills on a regular basis. One youth stated:

“I don’t really remember the game, I finished it in November, so it’s been a while” (Youth1, Community 5).

Over-simplification. Some Youth described SPARX as too simple, “easy and boring” and expressed a desire for the adventures to last longer and provide additional challenge. One youth reported:

“They were challenging but just a little bit boring when it’s like, nothing really to do but walk and get the GNATS and gems” (Youth 2, Community 2).

Technical difficulties. Youth described feeling frustrated by the many technical difficulties they encountered. Information Technology (IT) difficulties resulted in the disruption to several participants’ game play, and several youth reported being upset with the inconsistencies. One youth stated:

“I had a few problems, I couldn’t hear or see the words” (Youth 2, Community 6).

Community facilitator feedback.

Technical difficulties. In line with youth reports, several community facilitators described feeling frustrated by the technical difficulties they encountered. Facilitators often scheduled a specific time for youth to play SPARX, and if the computer was not working properly, it delayed

their game play and offset their schedule. Technical difficulties were responsible for offsetting finishing dates of gameplay by several weeks in some communities. One facilitator stated:

“I think you need backup files, cause if your file’s corrupted, it’s a real big hassle to get it fixed. That happened on both computers” (Community facilitator, Community 5).

Recruitment and attendance difficulties. Community facilitators spoke of the difficulties in recruiting youth who would be appropriate for the SPARX program. Further, community facilitators detailed the challenges in gaining access to youth, as many of the communities are challenged by high school truancy rates. Community facilitators often found it difficult to schedule times with youth when they were not able to reach them through school and were not privy to their whereabouts. One facilitator stated:

“Trying to get the students to get back into wanting to come back and play SPARX ... but I lost two boys, that just early on in the program, one of them decided it wasn't something that he was interested in doing. The other boy kind of just lost interest. We did have the two girls continue ... the challenge where you know, you just have one coordinator and they can’t make it. It would be great if we had a teacher in the school that was a backup or who they were familiar with as well” (Community facilitator, Community 4).

Discussion

Overall youth and community facilitator feedback suggest that youth, though they encountered many challenges while accessing SPARX, found the program to be engaging. Both groups discussed possible implications for positive change of youths’ mood and enhanced cognitive skill development. With Study 1 suggesting that SPARX may have the potential to decrease some negative coping styles but did not appear to decrease other signs of depressive affect or boost resilience, it was important to explore the experiences of youth who had participated in the SPARX trial. Study 2 looked specifically at the perceived experiences of participating in SPARX, for both youth and community facilitators.

Qualitative data provided by youth and community facilitators were aligned with the quantitative results from Study 1. Most youth and community facilitators described their support for SPARX as an effective intervention tool for Canadian Inuit youth. Youth and community facilitators discussed signs of improved mood, stronger emotional intelligence and healthier coping strategies for adverse situations after completion of the SPARX program. Further, they discussed the importance of SPARX in teaching emotion regulation skills and challenging faulty thinking or cognitive distortions. Youth discussed the importance of using a tool that is game-like and engaging for their peers, while community facilitators boasted about how well SPARX maps on to youth culture, by harnessing wellness through a youth-friendly medium. These results are congruent with those currently being discussed in literature: examinations of SPARX and other cCBT programs in marginalized and isolated communities, or indigenous communities, are suggesting enhanced wellness and resilience and decreased depressive affect in participating youth, as well as enhanced youth empowerment and belief in their ability to use coping skills when things are tough (Cheek et al., 2014; Fleming, Lucassen, Stasiak, Shepherd & Merry, 2016; Shepherd, Fleming, Lucassen, Stasiak, Lambie & Merry, 2015; Shepherd, Merry, Lambie & Thompson, 2018; Thabrew, Stasiak, Garcia-Hoyos & Merry, 2016).

Youth and community facilitators reported that having SPARX in their communities will greatly increase access to mental health supports and augment the current services available to them. Throughout the focus groups, youth and community facilitators discussed how SPARX could help to change the mental health crisis in their communities, namely stating that access to a computer-based intervention could change how people navigate adversity, socialize within their community, and view their own as well as others mental health. These are important insights given the extreme stigma associated with discussing mental health and accessing support in these

communities and are in line with literature citing that e-interventions breakdown many of the barriers currently faced by marginalized youth who try to access mental health services (Shepherd et al., 2015; Shepherd et al., 2018). Given the success of therapeutic interventions when mental health stigma is minimized, it will be important to find ways to break down this particular barrier in Northern communities. That youth and community facilitators felt SPARX could be effective on a community level is important given the literature that supports enhanced access, engagement and success with programming that is supported at the community level (ITK, 2013).

Both youth and community facilitators supported the apparent need for a culturally appropriate adaptation of SPARX. This feedback is important given the significance many researchers have attributed to increasing individual resilience through enhancing cultural pride and community wide resilience (Andersson & Ledogar, 2008; Chandler and Lalonde, 1998; Fleming & Ledogar, 2008; Strand & Peacock, 2003). Youth and community facilitators primarily advocated for cultural adaptations that were more stylistic than theoretical. They discussed using Northern scenery (mountains, ice, lakes, igloos), incorporating Canadian Inuit traditions (throat signing, hunting, ceremonies), making use of Canadian Inuit costumes (parkas, fur), and using Northern animals (polar bears, seals). Youth reported a need to consult with Elders in the development of cultural adaptations of the game, as they hold the knowledge for the community. In fact, developing a culturally appropriate version of SPARX may ensure that the game could function not only to combat depression and boost resilience, but could also serve to enhance cultural esteem. Chandler and Lalonde (1998) showed that increased cultural esteem functions to increase individual wellbeing, mental health and resilience. By incorporating Canadian Inuit culture into the SPARX program, it is possible that it could be used to foster

community wide resilience, cultural pride, youth capacity and engagement, as well as to provide early prevention for mental health difficulties.

With an overarching goal of SPARX being to decrease the risk of depression and low mood and enhance resilience in youth who had been identified as being at risk for those symptoms, it is important to give primacy to culture in understanding youth's experience. One interesting finding was that, based on past literature and the quantitative results, both youth and community facilitators were expected to discuss the alleviation of symptoms of depression such as sadness, isolation, and feeling withdrawn. Instead, however, youth and community facilitators referred to feelings of anger, frustration, stress, and annoyance. While anger was traditionally considered an aberrant expression of sadness and depression, more recent research reports have described anger as a form of dysregulation experienced by depressed youth who are struggling to adapt to social and physical environments (Jackson et al., 2011). Furthermore, anger is considered one of the primary symptoms of depression for youth who are at an increased risk of attempting or completing suicide (Fraser, Geoffroy, Chachamovich & Kirmayer, 2015). In a study done with Alaskan Inuit, Wexler and Goodwin (2006) found that in youth who discussed warning signs of suicide, 13% of all respondents mentioned anger as a primary concern. In Canadian Inuit youth specifically, research has shown that boredom and anger may be primary expressions of depression and leading causes for suicide, with depression possibly being a mediator for anger (Fraser et al., 2015; Ruder, Hatch, Ampanozi, Thali & Fischer, 2011; Walls et al., 2007). It is not surprising then that youth who participated in this study were better able to discuss expressions of anger, frustration and stress than they were feelings of depression, sadness, isolation and withdrawal (Ruder et al., 2011).

These findings may provide insight into the limited significant results found in Study 1. It is possible that the standard measures used in Study 1 may have not successfully tapped into Canadian Inuit youth's experience of mental health markers, specifically with depression. Further, given that the Canadian Inuit culture relies heavily on oral traditions, such as storytelling, oral ceremonies, song and dance, it is possible that the qualitative focus groups from Study 2, and the opportunity for youth to detail their experiences with SPARX through focus groups, were better able to capture the youth's perceptions of the strengths of the program. The quantitative data from Study 1, however, were not able to capture the same narrative (NCCAH, 2010; Neckoway et al., 2007).

Limitations

Study 2 made use of focus groups for youth and community facilitators after completion of the SPARX trial. This meant that youth who had been assigned to Group 1 often waited five to seven months post game play before participating in focus groups. Due to this, youth who were in Group 1 were less able to describe their experiences with SPARX and spoke in more general terms. Group 2 youth, who completed the focus groups immediately following SPARX play, were more descriptive in recounting their experience.

Secondly, Study 2 had a small sample size. Eleven youth completed the focus groups, representing 50% of the youth who participated in the trial. Though there was representation from all communities who completed the trial, it is not possible to generalize these results to the entirety of the youth who completed SPARX. In fact, it is possible that the youth who chose to partake in the focus groups were the youth who also had more positive experiences with the trial. Community facilitators were better represented in the focus groups, with a total of seven out of eleven participants. However, despite their eagerness to provide feedback, some of the

community facilitators were new in their role or new to the youth at the time of their participation.

A third limitation to Study 2 was that exit focus groups were held over conference calls with the researcher from York University. Due to poor phone signal and access to phones in some communities, it was challenging for some youth to participate in the focus groups. Further, because the focus groups were difficult to organize, all youth in a community who wanted to be involved were on the phone together. Some youth expressed discomfort in discussing their experiences in front of their peers. Due to time constraints and challenges at the community level, it was not possible to offer individual interviews for each youth.

Future Directions

Based on the encouraging reports delivered by youth and community facilitators, SPARX, if culturally adapted, could potentially be an accessible and affordable mental health tool for Canadian Inuit youth in Northern Canada. Based on youth reports, adaptations to the current SPARX program will ensure greater success in future trials. The program should be made to better fit Canadian Inuit culture and Inuit experiences of mental health and wellness. In order to do this, further exploration of Canadian Inuit understanding, and expression of mental health is needed. It is important to work from the bottom up and the first step in doing this is to gain an understanding of what Canadian Inuit youth feel they require in order to achieve wellness. It will also be important to understand how youth perceive the roots of mental health difficulties for themselves and their communities, in order to tailor prevention and intervention programs that are best suited. Once this has been established, it will then be possible to delve further into the adaptations to the current SPARX program that youth would like to see, in order to better adapt the game to the Canadian Inuit culture.

This study provided insight for a good baseline of some necessary adaptations to the program, but it will be important to include youth and Elders at every step in creating the necessary changes to the program. Youth and community facilitators advised that by representing Northern scenery and Canadian Inuit traditions, community members would be less wary of the program, and more inclined to use the program. Future research should work together with communities to develop a plan of how cultural adaptations can be understood, harnessed and implemented into the SPARX program. A Canadian Inuit adaptation of the SPARX program would increase relatability for youth, ideally optimizing engagement in the program, and thus its' potential success in creating therapeutic change. Additionally, research suggests that incorporating one's culture into a program has the potential to promote cultural esteem and community-based resilience, further fostering individual resilience (IQ Education Framework 2007).

Given the geographic and resource challenges experienced by most communities in Nunavut, many of which are small, isolated and without access to comprehensive mental health services, it is more important than ever to develop tools that require little staff support, minimize mental health stigma, and adequately address the needs of both the youth and Canadian Inuit culture. Results from this trial support the need for a cultural adaptation of SPARX. Future studies of this adapted version in Canadian Inuit communities is recommended to assess any therapeutic gains it has the potential to foster.

Study 3

Introduction

Understanding Wellness in Canadian Inuit Communities: An Exploratory Review of Canadian Inuit Youth and Elder Perceptions. The documented mental health problems of

Canadian Inuit youth, while on some level personal and individual struggles, cannot be understood in isolation from the collective trauma experienced by their communities (Kirmayer, 2008). Indeed, depression among Canadian Inuit youth is often understood as embedded in intergenerational experiences of distal historic injustices (Duran & Duran, 1995). The literature has long provided links between the contemporary struggles faced by Canadian Indigenous communities and the distal injustices, such as oppression, marginalization and cultural genocide they faced in years past (Kirmayer, 2008; ITK, 2013). It is possible however that by continuing to rely heavily on the role of history in explaining the development of complex mental health problems of entire communities, equally important, more proximal contemporary systemic and economic factors might be inappropriately minimized, such as current lack of resources, housing scarcity, and job insecurity (Kirmayer, 2008; ITK, 2013). Similarly, by discounting proximal struggles, there is little room to assess and understand individual and community-wide resilience and its impact on wellness.

Resilience is defined by positive adjustment, in the face of adversity, that leads to constructive outcomes and contributes to wellness (Luthar & Cicchetti, 2000). There are many forms of resilience known in Canadian Inuit communities, such as family strength, community style rearing and cultural beliefs and traditions (Fleming & Ledogar, 2008; Kirmayer et al., 2009). While literature has examined the proximal struggles faced by members of Canadian Inuit communities (overcrowded housing, inconsistent education, food shortage), as well as diverse forms of cultural resilience present in these communities, less is understood about how specifically Canadian Inuit youth cope with adversity and perceive wellness (Fleming & Ledogar, 2008; Kirmayer et al., 2009). Exploring the factors that contribute to wellness is an important steppingstone in understanding mental health and how youth cope with adversity

(Suldo & Shaffer, 2008). When applying the Two-Eyed Seeing Framework to Canadian Inuit mental health, the Western eye cannot simply assume its knowledge of wellness and coping fits with Canadian Inuit youth's experiences. For example, it is unknown whether Canadian Inuit youth understand and experience depression in the same way in which youth in Southern Canada do. Western prototypes for mental health diagnosis, prevention and intervention programming may thus not be suitable in Canadian Inuit communities (Gone, 2013). Canadian Inuit youth's mental health needs may be best supported by first exploring the Canadian Inuit eye to understand Canadian Inuit youth's experience with mental health difficulties and wellness, and then working with knowledge from the Western eye to assess empirically based programs, and possible cultural adaptations of such programs (Gone, 2013). Canadian Inuit wellness, at both an individual and a community level, must then be explored before it can be defined and harnessed to support the needs of the community (Suldo & Shaffer, 2008).

In study 3, the first goal was to use the Two-Eyed Seeing Framework, as applied to Canadian Inuit mental health, to gain an understanding of Canadian Inuit youths' and Elders' perceptions of: 1) the factors that contribute to wellness at an individual level; 2) the factors that contribute to wellness at a community level; and 3) cultural-based traditions that may help achieve wellness.

As wellness is inherent in resilience, and resilience requires coping with adversity, it was important to gauge youth's understanding of the relative contributions that distal (historic) traumas and their sequelae make to mental health problems, in contrast to the contributions of proximal daily life struggles (Fleming & Ledogar, 2008; Kirmayer et al., 2009; Whitbeck, Adams, Hoyt & Chen, 2004). As stated by Whitbeck (2004), "Are we dealing with actual historical issues or more proximate grief and trauma from the daily lives of often economically

disadvantaged people who live with constant overt and institutionalized discrimination, severe health issues, and high mortality rates? The current conditions may be related to historical causes; however, the origins of the symptoms may be contemporary experiences?” (Whitbeck et al., 2004, pg. 2). While acknowledging that mental health difficulties in any Indigenous community likely originate in a complex interplay of historic and contemporary factors, in order to gain a more nuanced understanding of these separate factors, the second goal of Study 3 was to understand the impact of how contemporary hardships, though intertwined with a history of trauma, play a role in Canadian Inuit youth mental health, versus how historical stressors and the intergenerational transmission of trauma may directly influence mental health. To try and understand this, the development of a potential model was explored, the *Ecological Systems Model of Cultural Resilience* (Litwin & Bohr, 2017). This model was proposed to advance that Canadian Inuit face contemporary hardships primarily because of a history that involves intergenerational transmission of trauma, but that Canadian Inuit youth, while acknowledging history as a contributor to present challenges, may attribute their current struggles just as much to contemporary stressors that are more immediate and tangible. This second goal was designed to understand youth’s and Elders’ perceptions of: 1) differences in thought between the Elder’s generation and the youth generation on the origins of mental health difficulties; and 2) differences between the Elders’ generation and the youth’s generation regarding beliefs, traditions, practices and activities that may contribute to wellness. See Appendix A for a visual representation of the proposed *Ecological Systems Model of Cultural Resilience*.

Perceptions of wellness at an individual and community level, as well as distal and proximal contributing factors to youth mental health difficulties were explored through focus groups with Canadian Inuit youth and Elders in four Nunavut communities. No hypotheses were

generated for this study, with the goal of allowing the discussions to be youth and/or Elder led and focused on their own experiences with and perceptions of wellness. A qualitative, open ended, and bottom up approach was used. While acknowledging that no collection nor analysis of data are ever entirely objective, as the researcher herself brings her own subjectivity to the research, every effort was made to not allow preconceived notions to colour the research process described below.

Methods

Participants. Four Nunavut communities (Pangnirtung, Baker Lake, Pond Inlet and Cape Dorset) participated in Study 3 of this project. Communities were chosen based on their involvement in the follow up I-SPARX project, which received funding following the pilot results (Studies 1 and 2). The goal of the community participatory I-SPARX project is to create a Canadian Inuit version of the SPARX game by incorporating youth's and Elders' feedback regarding cultural adaptations, and traditional methods of wellness into the adapted game's design. Study 3 focus groups were part of a larger set of focus groups held with youth participating in the I-SPARX project. In each of the four participating communities, two to five youth aged 14-21 were recruited for focus groups using a variety of recruitment strategies as detailed below. In two of the communities (Pangnirtung and Cape Dorset) Elders were recruited for participation. Youth recruited were not the same youth who had previously participated in Studies 1 and 2 of this project, with the exception of one youth from Pangnirtung who had completed two levels of SPARX play three years prior to Study 3. Any community youth who wished to participate was welcomed to the project. Exclusion criteria (i.e. no youth with serious psychiatric presentations, for example psychosis) were in place but did not have to be applied given that all of the youth who volunteered showed typical functioning. Proficiencies in the

English language were necessary for participating youth but did not limit participation for Elders as a translator was engaged for all focus groups with Elders. See Appendix C for a map of communities involved. See Appendix I for a list of participant information.

Pangnirtung. Five youth participated in focus groups in Pangnirtung. There were four males and one female participant. Ages ranged from 15 to 21 years. Consent was provided by each youth on the first day working with the I-SPARX team. Additional consent was provided for by the mother of the 15-year old participant. Youth were recruited from the high school as part of the Te(a)ch program. Tea(a)ch is a program run by an I-SPARX project partner, Pinnguaq, an Iqaluit based company that travels to Northern communities teaching coding skills. Youth in Pangnirtung were participating in the Pinnguaq coding sessions, the I-SPARX sessions and the Study 3 focus groups.

Baker Lake. Three youth participated in Baker Lake. There were two females and one male participant. Ages ranged from 14 to 18 years. Consent was provided by each youth on the first day working with the I-SPARX team. Additional consent was provided for by both parents of the 14-year old participant. Youth were recruited through the Baker Lake sell/swap and events listing on Facebook, as well as through flyers left at the community centre. Youth participated in the I-SPARX sessions as well as the Study 3 focus groups.

Pond Inlet. Two youth participated in Pond Inlet. Both youth were male. One youth was 17 years old and the other 18 years old. Consent was provided by each youth on the first day working with the I-SPARX team. Youth were recruited through the Pond Inlet sell/swap and events listing on Facebook, through flyers left at the community library, and through the community's librarian. Youth participated in the I-SPARX sessions as well as the Study 3 focus groups.

Cape Dorset. Four youth participated in Cape Dorset. There were three males and one female participant. The female participant was unable to attend sessions after Day One due to commitments with her summer job. Ages ranged from 15 to 17 years. Consent was provided by each youth on the first day working with the I-SPARX team. Additional consent was provided for by guardians of the two 15-year old participants. Youth were recruited through the I-SPARX community facilitator in Cape Dorset, as well as through the Youth Centre. Youth participated in the I-SPARX sessions as well as the Study 3 focus groups.

Procedure.

Ethical approval. Approval for this study was granted by the Human Participants Subcommittee of the York University Office of Research Ethics, and the York Indigenous Research Advisory group, as an amendment to the approved ethics from Studies 1 and 2. Ethics was received from the Nunavut Research Institute (NRI). In addition, each community provided consent for the I-SPARX project through either Mayoral support or community Wellness Council support (see Design). See Appendix J to view the consent form for Study 3.

Design. Following the completion of the SPARX pilot study, overviewed in Studies 1 and 2, further funding was sought from the Canadian Institute of Health Research (CIHR). In the Spring of 2017, funding from CIHR was secured for the continuation of the SPARX project, then renamed I-SPARX (Inuit-SPARX). CIHR funding supports the development of I-SPARX, a four-year project aimed at teaching Canadian Inuit youth coding skills, and applying feedback provided by youth and Elder's to co-create a culturally adapted version of the SPARX program (I-SPARX). The I-SPARX program follows a multi-year model and incorporates knowledge building and mobilization at many levels, including facilitator trainings, community visits, youth

retreats and scaffolded research objectives. To conduct Study 3 focus groups, this researcher joined the I-SPARX team in four of their five community visits during the summer of 2018.

Focus groups utilized an inductive thematic analysis approach, and as such themes and knowledge were built through the sharing of information by youth and Elders. Preconceived notions were discussed amongst researchers prior to visiting the communities in order to minimize their influence on the process of focus groups. Open ended questions were used, with a series of follow up questions to delve deeper into ideas shared by participants.

Focus groups with youth followed a set pattern; first youth explored skills or tools they use when they are feeling low, followed by skills they think their peers would benefit from. Youth discussed practices the community engages in that they believe enhances community or cultural wellness. Youth were also asked about other forms of wellness practices they wish they could engage in, and what may be culturally appropriate practices their communities could benefit from. In addition, there was some discussion in every focus group surrounding wellness practices that they believe Elder's participated in as youth and what may have changed over the generations, as well as exploring if any of these traditions are worth returning to. Overall, in the focus groups, we attempted to gain a better understanding of what mental health and wellness means for youth in their communities.

Focus groups with Elders followed a less structured approach and were conducted completely in Inuktitut with a translator present. A general introduction to the project was provided and consent forms signed. Following this, Elders discussed their thoughts and feedback regarding the project. Elders participated in a discussion regarding their own upbringing, life "in the camp" and how mental health was fostered through a more traditional lifestyle, including games they played, lessons they learnt from story telling, and whom they spoke to for life advice.

Elders also discussed their hopes for youth in their communities and what they think might help youth return to a more traditional lifestyle, incorporating both Canadian Inuit knowledge and cultural forms of wellness, also acknowledging contemporary practices, such as the use of technology. Elders were prompted for more detail when necessary, however were given the space to discuss freely their own feelings, thoughts and memories.

The Two-Eyed Seeing Framework was applied to focus groups by following the lead of youth and Elders in how they wanted to share information. The term focus group is used loosely to imply that information was shared amongst participants. Focus groups appeared different in each community based on how youth and Elders desired sharing. For example, some focus groups were held over country food (whale blubber, arctic char and frozen caribou), while others were held on the land. Youth sometimes requested special treats (pizza) or asked to play Inuit games prior to participating in focus groups. On occasion youth wanted to share their experience instead of talk about them, such as showing where they fish and hunt by taking ATV's to their cabins. Youth also shared their traditions in order to provide context for their knowledge. They helped support learning by teaching this researcher about their traditions, such as dropping blood into the ocean as an offering to mother earth after the killing of a narwhal.

Pangnirtung. Pangnirtung is a community on Baffin Island, north of Iqaluit, with a population of 1400. One third of its' population is less than fourteen years of age, with an average age of 28 years (Statscan census, 2016). The community is home to one high school and one junior/middle school. Truancy rates as of 2011 were 18.3% (Statscan census, 2016).

Pangnirtung was the first community visited during the I-SPARX project in May 2018. The weeks prior to visiting the community, Pangnirtung had experienced two youth group suicide attempts, in addition to a youth stabbing on the day of arrival. As such, the community

was on high alert and had been self-identified by the hamlet as in crisis. Due to the context in which the team arrived, meetings which had been previously set up were postponed. On day three in the community, the I-SPARX team met with the Wellness Council in the hamlet office to discuss the project. Upon meeting with members of the council, approval to proceed with the project was granted, on the condition that suicide and depression were not to be directly discussed with youth. Council members were clear that such terms could be triggering for youth in the community, and they wished for the I-SPARX team to respect their level of sensitivity in discussing these topics. As such, some of the initial themes sought to be discussed in focus groups (origins of mental health difficulties e.g.: depression) were eliminated from discussions and focus groups instead relied more heavily of conversations regarding practices of individual and community wellness.

Once the approval was obtained from the wellness council, members of the I-SPARX team introduced themselves to the Mayor, Senior Administrative Officer, community mental health nurse, school counselor, school principal and other government officials to discuss the goals of the project and seek counsel and advice on culturally appropriate steps to complete within the community. The proposed plan had been to meet with youth for two hours every day over the course of four days. Due to timing constraints and the context within which the team arrived, only one youth meeting was feasible. The I-SPARX team met with youth on Day Four to conduct focus groups. Five youth, the Pangnirtung community facilitator, the I-SPARX project facilitator and this author met for three hours in the conference room of the hotel. Snacks and beverages were provided, and youth were paid \$15 an hour for their participation. All youth participated for the same duration of time. Youth were given a laptop with the SPARX game at the end of the session. The first hour of the meeting was spent completing consent forms,

providing an overview of the I-SPARX project and introducing Cognitive Behavioural Therapy (CBT) to the youth. The second hour was spent discussing practices of wellness that youth align with themselves or they deem appropriate in their community. The third hour was spent playing the SPARX game and discussing adaptations necessary to create a Canadian Inuit version.

On Day Five in the community, the I-SPARX team was invited to attend Elder's tea and introduce the project. Five elders were present, along with a translator paid for by the team, the Pangnirtung community facilitator, the I-SPARX project facilitator and this author; the meeting took place in the Elder's room in the community hamlet. Elder's were provided with country food (frozen arctic char), tea and cookies. During the hour spent with Elders, themes surrounding past and current practices of wellness were discussed, as well as some of the Elder's hopes for youth in their community.

Baker Lake. Baker Lake is a community in the Kivalliq region, west of Hudson Bay. Baker Lake is the geographical centre of Canada and the only community in Nunavut that is inland. The population of Baker Lake is just over 2000 and is continuing to grow due to the productivity of the Meadow Bank Gold Mine, located a short distance outside the community (Statscan census, 2016). Due to the mine, there is a large population of White people in the community and many community members live part time in Baker Lake and part time at the mine. Baker Lake is home to one high school and one junior/middle school. Truancy rates as of 2011 were 27.3% (Statscan census, 2016).

Baker Lake was the second community visited by the I-SPARX team in June 2018. The school year had been completed the week prior to I-SPARX visiting the community, resulting in free time for children and youth. There was youth programming supported by the community centre, as well as a day camp, however, at the time of the visit, youth were understood to be

spending much of their days sleeping and their nights with friends. Several youth in the community commented to the team that they were going to bed anywhere between two AM and four AM and sleeping until noon the following morning.

Prior to arriving in the community, discussions had been arranged with the Kivalliq representative from the Embrace Life Council (ELC) to help support youth recruitment in Baker Lake. The day before the I-SPARX team arrived, there had been a youth suicide in Rankin Inlet and the ELC representative had to leave Baker Lake to attend to the community in crisis. At the time of arrival in Baker Lake, many members of the Wellness Council were out of the community for health reasons or to support crises in other communities, and as such it was not possible to fulfill the arranged meeting with the Wellness Council.

On Day One in the community, the I-SPARX team met with the Mayor of Baker Lake and introduced the project. The mayor granted approval to begin recruiting and working with youth. With approval obtained, members of the I-SPARX team introduced themselves to the Senior Administrative Officer, child and youth councillor, community mental health nurse and other government officials to discuss the goals of the project. The I-SPARX team met with youth on Days Two, Three and Four to complete the projected tasks for the week. Three youth, the Principal Investigator from York University, the I-SPARX project facilitator and this author met for two and half hours in the community wellness centre on each of Tuesday, Wednesday and Thursday. Snacks and beverages were provided, and youth were paid \$15 an hour for their participation. One youth participated in fewer hours, due to having to leave the community on one day to have his braces adjusted. Youth were given a laptop with the SPARX game on it at the end of the week. The first day was spent completing consent forms, providing an overview of the I-SPARX project and introducing Cognitive Behavioural Therapy (CBT) to the youth. The

second day was spent discussing practices of wellness that youth align with themselves or they deem appropriate in their community. The third day was spent playing the SPARX game and discussing adaptations necessary to create a Canadian Inuit version of the program.

The Baker Lake Elder's teatime had been cancelled for the summer due to lack of funding. As such, it was not possible to arrange a focus group with Elders in Baker Lake.

Pond Inlet. Pond Inlet is the most northern community on Baffin Island, located in the Qikiqtaaluk region. The population of Pond Inlet is just over 1600 (Statscan census, 2016). Pond Inlet is home to one high school and one junior/middle school. Truancy rates as of 2011 were 20.1 % (Statscan census, 2016). Pond Inlet receives several cruise ships every summer once the flow edge has receded. It is also the home to the Canadian High Arctic Research Station, which predominantly researches environmental factors, marine and bird life on Bylot Island, which is across the bay from Pond Inlet.

Pond Inlet was the third community visited by the I-SPARX team in July 2018. During the time of the visit, youth in Pond Inlet were out of school. Both youth who participated in the I-SPARX project held day jobs and as such, meetings were only able to take place after four o'clock. After several flight delays, the I-SPARX team landed in Pond Inlet on the evening of Day One. On Day Two, the I-SPARX team met with the Mayor, Senior Administrative Officer and the head of the Wellness Council. After introducing the project, the Mayor and Wellness Council granted approval for the I-SPARX project. Once approval was obtained, members of the I-SPARX team introduced themselves to the Mental Health Nurse, the librarian and other government officials to discuss the goals of the project and seek counsel and advice on culturally appropriate steps to complete within the community.

The I-SPARX team met with youth on Days Two, Three and Four to complete the projected tasks for the week. Two youth, the Principal Investigator from York University, the I-SPARX project facilitator, the I-SPARX community facilitator and this author met for two and half hours in the community library on each of Tuesday, Wednesday and Thursday. Snacks and beverages were provided, and youth were paid \$15 an hour for their participation. One youth participated in fewer hours due to his afternoon work obligations, and being a parent to a young infant. Youth were given a laptop with the SPARX game on it at the end of the week. The first day was spent completing consent forms, providing an overview of the I-SPARX project and introducing Cognitive Behavioural Therapy (CBT) to the youth. The second day was spent discussing practices of wellness that youth align with themselves or deem appropriate in their community. The third day was spent playing the SPARX game and discussing adaptations necessary to create a Canadian Inuit version of the program.

The Pond Inlet Elder's Teatime had also been temporarily cancelled during the summer months, given that the homecare nurse, who organized this, was out of the community. It was set to begin again at the end of August. As such, no focus groups with Elders were held in Pond Inlet.

Cape Dorset. Cape Dorset is a community located in the southern end of Baffin Island, in the Qikiqtaaluk region. The population of Cape Dorset is just over 1400 (Statscan census, 2016). Cape Dorset is home to one brand new high school and one junior/middle school. Truancy rates as of 2011 were 23.9% (Statscan census, 2016). Cape Dorset is also home to a brand-new cultural centre, which showcases internationally known artists who come from this community.

Cape Dorset was the fourth community visited by the I-SPARX team in July/August 2018, and the last community visited by this author. During the time of the visit, youth in Cape

Dorset were out of school. The week prior to arriving in the community, the Mayor's son had been killed in a boating and hunting accident, and as such the hamlet had been functioning at a slower pace. In addition, prior to visiting Cape Dorset, the I-SPARX team had been provided with information regarding several troubling incidents in the community that had recently arisen between Canadian Inuit and non-Inuit community members. As a result of some of the incidents, many teaching staff and health care staff had left the community and the community health centre had been temporarily closed.

On Day One in the community, the I-SPARX team met with the Mayor, Senior Administrative Officer and the head of the Wellness Council. After introducing the project, the Mayor and Wellness Council granted approval for the I-SPARX project and offered their full support. With approval obtained, members of the I-SPARX team introduced themselves to the Mental Health Nurse, the youth program officer and other government officials to discuss the goals of the project and seek counsel and advice on culturally appropriate steps to complete within the community.

The I-SPARX team met with youth on Days One, Two, Three and Four to complete the projected tasks for the week. Four youth attended on Day One, however one had to work the remainder of the week and was unable to return. The youth, the Principal Investigator from York University, the I-SPARX project facilitator, the I-SPARX community facilitator and this author met for two hours in the youth centre on each of Monday, Tuesday, Wednesday and Thursday. Snacks and beverages were provided, and youth were paid \$15 an hour for their participation. Some youth participated in more hours depending on their interest in engaging with Elders and providing additional feedback about wellness. Youth were given a laptop with the SPARX game on it at the end of the week. The first day was spent completing consent forms, providing an

overview of the I-SPARX project and introducing Cognitive Behavioural Therapy (CBT) to the youth. The second and third days were spent discussing practices of wellness that youth align with themselves or they deem appropriate in their community. The third and fourth days were spent playing the SPARX game and discussing adaptations necessary to create a Canadian Inuit version of the program.

On Day Three in the community, the I-SPARX team invited two Elders to join the team at the youth centre for lunch, which took place over an hour and a half. Two elders were present, along with the Cape Dorset community facilitator, the I-SPARX project facilitator, the Principal Investigator, two participating youth and this author. Elder's were provided with country food (frozen arctic char, frozen caribou and beluga), tea and cookies. Elders were paid a \$70 honorarium for their participation. Amounts for honorariums were discussed with community members and decided upon as the proper amount to respect the time and knowledge given to research members. The two Elders also attended the final session on Day Four for another hour and a half, during which they participated in a pizza dinner. During the three hours spent with Elders, themes surrounding past and current practices of wellness were discussed, as well as some of the Elder's hopes for youth in their community. Conversations were also fostered between Elders and youth on how to engage in intergenerational conversations regarding community wellness practices.

Data Analysis. All data provided during focus groups were assessed for suitability and only data pertaining to mental health difficulties, mental health, individual and community wellness, wellness practices, intergenerational breakdowns and repairs, and thoughts regarding the future of mental health in Canadian Inuit communities were analyzed. Thematic analysis was used to analyze the data deemed salient from the open-ended focus groups. Thematic analysis

allows for coding of novel umbrella ideas that lead to a fuller understanding of emerging topics (Braun & Clarke, 2006). Because thematic analysis allows for themes to be built from the ground up, it provides space for Canadian Inuit modes of life, traditions and culture to be explored thoroughly and independently, while also fostering the development of overarching themes, which is important in this project given the goals of understanding wellness in these communities (Braun & Clarke, 2006). Thematic analysis takes an inductive approach; themes were generated from information shared in the focus groups, as opposed to being generated in order to fit preconceived notions of Canadian Inuit wellness (Braun & Clarke, 2006). Data becomes progressively more categorized and patterned as more data are analyzed. This allows these patterns to be understood as relevant in the Canadian Inuit context. *Dedoose*, a computer-based software designed to support the analysis of qualitative data was used to assist with the original organization and clustering of codes and the development of global themes (Lieber, 1990). Pencil and Index cards were used for grouping themes and meeting saturation. Focus groups were coded separately for youth and Elders. The Inuk project facilitator and Dr. Yvonne Bohr were involved in member checking to assure that coding of themes by the primary coder were credible and reliable. See Appendix K for a table of themes discussed.

Results

Table 7

Focus group themes by community

<u>Youth Themes</u>	<u>Community</u>
Practices of Wellness	P, B, PO, C
Lessons Learnt from Elders	B, PO, C
Difficulties Faced by Communities	B, PO, C
Uses of and Perceptions of Mental Health Services	B, PO, C
Importance of Canadian Inuit Knowledge	P, B, PO, C
Family as a Support System	B, PO, C
<u>Elder Themes</u>	<u>Community</u>
How to Live Well	P, C
Hopes for Youth	P, C
Elders as Community Members	C
How Life Used to Look	P, C
Cultural Shifts	P, C

P = Pangnirtung
 B = Baker Lake
 PO = Pond Inlet
 C = Cape Dorset

Focus Group Feedback – Youth Themes. Focus groups with youth resulted in six distinct themes, each with their own subthemes. These themes were: *Practices of Wellness*, *Lessons Learnt from Elders*, *Difficulties Faced by Communities*, *Uses of and Perceptions of Mental Health Services*, *Importance of Canadian Inuit Knowledge*, and *Family as a Support System*.

Practices of wellness. Within this theme, four sub themes emerged: Wellness practices youth engage in; What youth believe would help with wellness in their community; Importance of increasing wellness; and Community-wide wellness practices.

Wellness practices youth engage in. In discussing coping mechanisms and practices of wellness that youth engage in, youth primarily described tangible activities common in their daily lives. Such activities included working out, going to the gym, listening to music, playing

music, playing sports, going for a walk, talking to friends, talking to family, talking to a teacher and/or coach, writing in a diary, going for a bike ride, cleaning and using fidget spinners.

Youth also described using more commonly known therapeutic skills when discussing wellness practices, including: deep breathing, being mindful, finding silence, talking themselves out of negative thought patterns and finding ways to express their emotions.

In addition to tangible activities and therapeutic skills, youth further discussed culturally specific activities that they described as helping to achieve wellness. These included: hunting, fishing, storytelling, talking to elders, going out on the land, throat singing, Inuit games and camping:

“When we’re tired of the energy [how people are socializing] or of the internet or being on our phones or of people, we can just go to the land and go away where there’s no electricity and when we come back we feel better” (Youth 1, Community 2).³

What youth believe would help with wellness in their community. In discussing community wellness, youth described their desire for community members to better understand themselves and their emotions, as well as a need for greater willingness to discuss feelings, emotions and difficulties. Youth also discussed using IQ principles to help support cultural pride and self-esteem for community members:

“Don’t keep it inside of you, if you’re feeling bad, you’re going to snap and then when you’re like on alcohol and you’re a drunk and you just be talking so loud or just letting it all out because you’re so drunk. Don’t be afraid to talk about how you feel and don’t be afraid to let it out” (Youth 1, Community 4).

Importance of increasing wellness. In discussing the importance of wellness in their communities, youth discussed wellness’ potential role in mitigating what they described as

³ To maintain confidentiality of youth participants, community names are not provided for youth quotes

externalizing behaviours that are harmful to their communities. Youth spoke of a need to decrease the current rates of suicide, to reduce the anger expressed by community members, to help people understand their needs before they make bad decisions, to help people avoid violence and to help people stay out of trouble:

“Before they make a bad decision like reacting negatively or we could even help them to practice how to avoid violence when you get really stressed out, depressed” (Youth 2, Community 4).

Community-wide wellness practices. In discussing forms of wellness that exist at a community level, youth primarily discussed community events, such as having the whole community come together for a celebration. Youth also discussed more traditional Canadian Inuit practices such as camping and hunting in helping with community wellness:

“When the community comes together that’s when they’re happiest, they just enjoy their time together with others like old people, babies, adults and everyone is just having a good time” (Youth 2, Community 2),

while another youth stated:

“When we’re all out camping or on the land we spend lots of time together and it’s more fun. There was one time when my grandma was up by the campfire telling stories, and sharing stories, or one time when grandpa was there and I caught my first fish or whatever and those are good memories” (Youth 1, Community 2).

Lessons learnt from Elders. Within this theme there were three sub-themes that characterised what knowledge youth think that they have gained from Elders in their community: A traditional lifestyle; Seeking support from grandparents; and How to bridge generations.

A traditional lifestyle. When discussing traditional Canadian Inuit lifestyles, youth discussed a sense of respect and obedience that they believed youth historically had for their parents and Elders but does not exist in contemporary life. They discussed more traditional gender roles, such as men doing the hunting and women staying home to make clothing and food

and to play games. Youth reported a lack of perceived mental health difficulties when Canadian Inuit were living in camps, and an easier life full of innate knowledge, dancing, hunting, throat singing and community:

“They went hunting and they dance or something like that ... back in the day they listened a lot ... there was no problems” (Youth 4, Community 4).
Another youth reported: “if somebody needs nursery [childcare], everybody knew what they were doing, they didn’t even need to go to college” (Youth 5, Community 4),

while another stated:

“back in the day there was no violence or trouble” (Youth 3, Community 2).
Seeking support from grandparents. Youth discussed the importance of seeking support

and counsel from their grandparents or other Elders in the community. They reported that Elder support served to enhance their desire to do good in the world, and provided them with knowledge to help with daily life stressors:

“She taught me how to be positive and how to be a great man” (Youth 2, Community 4).

While another youth stated:

“if a boy or girl got scared or something, they should be able to be open and tell their grandma or grandpa” (Youth 4, Community 4).

How to bridge generations. In discussing bridging the communication between generations, youth reported a need to show more interest in gaining knowledge from Elders. There was a reported desire to use more storytelling in the upbringing of current and future generations to help with identifying as Canadian Inuit. Youth reported that with increased knowledge sharing, they believe individual self-esteem and self-concept could be bettered.

Youth further discussed a desire to receive guidance and counsel from Elders:

“Through story telling and sharing knowledge, have them share their own stories to make others feel good” (Youth 1, Community 3).

Difficulties faced by communities. In this theme, youth reported on several difficulties faced by communities, leading to five sub themes: Substance abuse and Conflict; Struggles with breaking the cycle; Historical trauma; Breakdown of Canadian Inuit ideology; and Contemporary struggles.

Substance abuse and conflict. Youth discussed feeling like their communities struggle immensely with substance abuse difficulties, involving both alcohol and drugs. Youth reported that because community members do not express their emotions easily, and binge on substances, there are a lot of people who become violent or “go crazy”. Youth reported that substances are a primary cause of family breakdown, conflict, suicide, drug-related death, distractions from work and distractions in relationships. Youth accredited substance abuse difficulties for creating much of the conflict in their communities:

“Lots of people have problems having money and they’re just sitting at home and not trying to get a job ... every month paid for by social services of what is it again? Welfare, like they’re having troubles at home and all they want to do is smoke up or drink... and once they get drunk they let it out and like they go crazy” (Youth 1, Community 4).

Another youth stated:

“in our generation the kids are destroyed by drugs such as marijuana that is just killing their brain cells and that could be a result of [result in] damage in their lives” (Youth 4, Community 4).

Struggles with breaking the cycle. Youth discussed a general feeling of hopelessness in their communities. Youth described many community members as having little hope that life will become easier and struggling with creating positive change. Mental health, financial struggles, personal development and relationships were some areas youth discussed as being subject to resistance to change:

“The younger generation that’s learning how to do things, their behaviours change and if they think they don’t know how they don’t even want to learn” (Youth 2, Community 2).

Historical trauma. Youth described historical traumas as a primary cause for many of the negative changes they see in their communities, including substance abuse and conflict. Youth discussed how historical traumas have a lasting impact on communities, and are cause for a breakdown in intergenerational communications:

“We were relocated to communities and the drugs started coming in when White people started coming and their lives changed in the matter of months” (Youth 4, Community 4).

Another youth stated:

“Our lost language, like we have Inuktitut and Elders only speak Inuktitut and we can’t speak it so it’s harder... a lot of people don’t care now, it’s harder now” (Youth 1, Community 2).

Breakdown of Canadian Inuit ideology. Youth reported that in historical times there was no conflict, violence, struggle or substance abuse. Youth reported a lack of awareness of how to return to a more traditional lifestyle when the contemporary ways of life do not permit for it. Youth reported that in the old days teachings and knowledge came from participating in activities and direct learning from doing. By living on the land, where skills were necessary for survival, all community members built capacity through their everyday tasks. Youth reported that in contemporary life, they must show an interest to be taught such skills. They further noted that so few community members maintain traditional knowledge, making teaching of skills more difficult, and access to knowledge more limited. Youth reported that they believed that this lack of traditional Canadian Inuit knowledge is at the forefront of some of the struggles in their communities, including the high suicide rates:

“We would have not lost the people over suicide if they had knowledge and understanding of the old ways of living as an Inuit” (Youth 4, Community 4).

Contemporary struggles. Youth reported that resources have become too accessible for many people, creating a divide between those who can afford such means and those who cannot. They further reported that many of the current luxuries (phones, computers, video games) serve as distractions in their communities and create conflict. Additionally, youth reported that such luxuries are not only possible distractions but can also create disturbing thoughts or trends in the community. With increased availability of technology, youth reported feeling overwhelmed and having difficulty attending, learning, and achieving. Youth further reported that with increased accessibility to modern advances, breakdowns in family relationships have become more frequent and Canadian Inuit parenting has become more nuclear and insular in comparison to traditional parenting, meaning that there is less reliance on extended family members or community members for support, and more isolation in dealing with stressors. Youth reported that instead of showing respect to people and the land, youth now are distracted, disrespectful and selfish:

“Today as youth we have a lot of things they did not have, iPods, phones, stuff like that, we have a lot of things today that can disturb us a lot, for instance video games” (Youth 1, Community 1).

Another youth reported:

“People just drive by Elders now instead of giving them a ride” (Youth 2, Community 2).

Uses of and perceptions of mental health services. Four sub themes emerged in discussing how youth perceive Mental Health Services and how they believe others in their communities perceive services: Dislike and distrust of Mental Health Services; Stigma around accessing services; Avoidance of Mental Health Difficulties; and Bettering access to Mental Health Services.

Dislike and distrust of mental health services. Some youth reported that people in their community do not want to go to the mental health nurse or to other community counsellors. They reported that mental health staff are not always trusted in the communities. These youth reported that they do not trust the mental health staff in their communities because they are often on short-term contracts, or, according to some youth, they “do not know how to do their job”. The same youth reported that some mental health staff “do not keep information confidential”, while others “use swear words or behave inappropriately”. In addition to difficulties with mental health staff, youth stated that some community members are shy, ashamed or embarrassed about their emotions and not willing to trust someone new with their feelings. Youth reported that historical traumas as well as a more contemporary history of “sucking it up” are causes of people’s distrust of mental health services. Finally, some youth also reported that there are many community members who are unaware that mental health services exist:

“It’s really hard for people to talk here cause the history is to push away people just to feel safe. A lot of people do that to me even when I’m trying to help”
(Youth 3, Community 4).

Another youth stated:

“For some it’s harder cause they’re shy or something, like they’re embarrassed to tell what they’re feeling” (Youth 1, Community 4).

Stigma surrounding accessing services. Youth reported that people in their community’s judge those who access mental health services as having something wrong with them or being “mental” or “crazy”. Youth discussed this stigma as being a barrier to accessing services, especially with the high rates of communication amongst people in small communities. The stigma associated with accessing services was reported to last a lifetime, with community members consistently thinking of those who access services as having something wrong with them:

“When I went to the mental health nurse, like somebody found out somehow that I went and they started calling me mental just cause I was there just to talk to them and up to this day they still call me mental” (Youth 4, Community 4).

Avoidance of mental health difficulties. Youth reported that community members avoid acknowledging their own mental health difficulties, but that, even worse, communities on a whole often do not acknowledge mental health struggles. Youth discussed how certain mental health difficulties, specifically suicide, are subjects that are not discussed in the community, noting that even saying the word “suicide” is considered wrong or dangerous:

“It’s a hard thing for people to talk because here it [suicide] happens way too often. Or we can talk about it but we don’t bring the word up” (Youth 3, Community 2).

Bettering access to mental health services. Youth discussed that increasing knowledge about mental health services would increase accessibility. Youth reported on the importance of reducing stigma associated with mental health difficulties. Youth noted that if mental health services were located in a safe space and not in the health centre, they think more community members would access them. Youth reported that if more people were willing to access mental health services, emotions would be better understood and communities would be able to navigate difficulties or conflicts with more skill:

“They could start getting to know what they did not know, a lot of people don’t know about mental health, like I go to the mental health nurse and they would think I was mental, start letting them think the other way” (Youth 2, Community 4).

Another youth reported:

“I think it should be better if you go see them in the house and talk” (Youth 2, Community 2).

While another youth stated:

“Some people grieve way too hard and end up turning to something they shouldn’t turn to but if they just talked about it, they might be able to pass over it” (Youth 1, Community 4).

Importance of Canadian Inuit knowledge. In discussing the importance of obtaining Canadian Inuit knowledge for enhancing wellness, youth reported that there are currently initiatives taking place to educate people on traditional skills, such as being on the land, hunting, fishing, and crafts. Youth reported an excitement about learning traditional skills, stating that it could better themselves and their communities. Despite this excitement, youth reported frustrations regarding contemporary issues that make it more difficult to gain traditional knowledge, such as financial constraints:

“A lot of us Inuit wish we know how to do things on our own and we wish we were taught the way they were taught as children, cause when they were little they started learning, like at the age of 4 a little boy always followed his dad hunting so he could learn the skills of his dad” (Youth 4, Community 4).

Another youth reported:

“It’s just something that’s more exciting to see, the traditional way coming back into today, it’s nice to see people trying to use traditional ways” (Youth 1, Community 2).

Family as a support system. Two distinct sub themes emerged when discussing the use of family as a support system. The first theme discussed was using family for positive support. Youth discussed speaking to their parents or grandparents when they needed counsel or guidance. Youth reported feeling like their needs were often met if they sought out support from family members:

“I talk to my mom, like all moms give such good advice, like everyone in the world, they just know” (Youth 1, Community 2).

The second theme discussed was guilt associated with speaking to family members. Youth reported that because all community members have suffered so much, by speaking to them about their own struggles, youth were concerned they would trigger their parent's or grandparent's past traumas, and be a burden to them:

“I don't talk to her about stuff because there's lots that happened in her life like before like losing two brothers over suicide” (Youth 1, Community 4).

Another youth reported

“Yeah, like you don't want to hurt their feelings” (Youth 3, Community 4).

Focus Group Feedback – Elder Themes. Focus groups with Elders resulted in five distinct themes: *How to live well*, *Hopes for youth*, *Elders as community members*, *How life used to look*, and *Cultural shifts*.

How to live well. Elders reported that in order to live well, community members need to be freer, more comfortable with themselves and more resourceful. Elders reported that gaining Canadian Inuit knowledge and incorporating Inuit traditions into daily life will lead to wellness. They stated that there needs to be more support and collaboration within the community; people need to help each other, work together, and be there for one another in order to build a strong and healthy foundation for the community. Elders reported that there needs to be more respect paid to ancestors and the land, noting that it is important to acknowledge and be thankful for the journey that ancestors took and the lives they lived in order to pave the roads for contemporary life. Elders further noted that wellness can be supported by respecting the knowledge and stories passed down by generations past:

“Wellness is like an igloo, you put it together piece by piece so you have a strong foundation and you keep building on it that way” (Elder 1, Community 1)⁴.

⁴ To maintain confidentiality of Elder participants, community names are not provided for Elder quote

Another Elder stated:

“it is the only way helping each other, helping each other is the only way to achieve or succeed” (Elder 1, Community 4).

While a third Elder reported:

“We have to thank our ancestors for what they gave us, they gave us a lot of things, knowledge, skills... we’re here today because of them because of the past, if they didn’t share knowledge or skills or their food, we wouldn’t have Inuit, there’d be no Inuit in this land” (Elder 2, Community 4).

Hopes for youth. In discussing what Elders feel could help youth in their communities, Elders reported on the importance of providing youth with access to people in their community that they feel comfortable talking to. Elders reported that youth need mentors, positive role models, and safe places to talk. Elders further noted that youth require more traditional knowledge and understanding of the Canadian Inuit culture. Elders reported a desire to help youth and educate them, they noted a desire for youth to show more curiosity about life in camps and Elder’s stories. Elders reported concern that current parenting practices are focused on negative reinforcement and noted a need for more support and teaching in modern parenting:

“Parents play an important role in wellness, family’s that can take their kids hunting and fishing have kids who are doing better” (Elder 2, Community 1).

Another Elder reported:

“It’s not about negative reinforcement and no negative reinforcement by like complaining to the youth and saying how they’re not doing this right or they’re not doing that right, it is not the way to go, so they’re’ just pushing them towards more negativity” (Elder 1, Community 4).

A third Elder stated (translated by a youth):

“They [Elders] see us [youth] listening to them, back in the day they listened a lot and they see us listening to them again” (Elder 2, Community 4).

Elders as community members. Elders reported a sense of breakdown between the generations, noting that communications between the youth and Elders had been lost. Elders

reported feeling like their generation had been erased. They noted that the loss in respect for community Elders has resulted in a loss of transmission of knowledge, with negative consequences on community wellness:

“It’s like her [Elder] life, her generation has been erased” (Elder 1, Community 4).

Another stated:

“There’s that disconnect again where when the rearing practices have just changed drastically so there’s that huge divide between generations” (Elder 2, Community 4).

How life used to look. Elders reported that as youth they grew up by listening, respecting, watching and learning through doing. They reported an apparent lack of mental health difficulties when they were young and noted that there were no issues with substance abuse. Elders discussed what life looked like on camps, with traditional roles of men hunting and women cooking or playing with the children:

“Back then people used to be very respectful, they wouldn’t been talk to older people, they used to be like not scared but what would you say, like scared to talk” (Elder 3, Community 1).

Another Elder stated:

“There’s no skidoos, there’s no boats, but they could make kayaks and dog sleds to travel the land, even they walk thousands of thousands of thousand of miles just by hunting, finding camps” (Elder 2, Community 4).

Cultural shifts. In discussing the ways that Canadian Inuit culture has changed, Elders reported a shift in parenting systems and practices, noting that the family unit has become more nuclear and there is no longer a “head of the household”. Elders discussed the change in language and how this has fostered a divide between the generations. They reported on a lack of respect that the younger generations show, specifically noting disrespect towards the land, their belongings and to others in their community. Elders discussed the introduction of money and

how this has changed access to food, eating styles and willingness to share. Elders reported that technology has affected youth by making life more confusing for them. Elders reported that historically there were defined roles for people in the community, both by status and by gender and now they worry that there is role confusion:

“They are not White, but they do not know if they are Inuk because of technology and money. They do not know the same traditions and relying on living off the land. This is confusing, and they don’t know how they are and it makes life harder for them” (Elder 3, Community 1).

Another Elder spoke specifically about young boys in the community stating:

“It’s hard for young boys now because they don’t know their role, men were the providers and hunters and now boys are left without a defined role in their community” (Elder 2, Community 1).

Another Elder reported:

“It’s changed a lot whereas the head of the house would have been, they call it [Inuktitut] but it means boss, but it’s changed kind of because of western language and parenting styles are not as appreciated, the head of the household is not as appreciated now because of the western culture” (Elder 1, Community 4).

Another Elder stated:

“They had each other, everyone helped each other, they fed each other, they give away food so their people had food to eat and they won’t be hungry but today is different and we have to buy and not a lot of people don’t want to share” (Elder 2, Community 4).

Discussion

Overall feedback from both youth and Elders suggest the importance of cultural components in any mental health service, as well the desirability to connect with others in an interpersonal manner. Both youth and Elders felt a disconnect between their generations and the communications shared, however expressed a desire to enhance intergenerational communication to share knowledge and enhance wellness.

The current rates of depression and suicide amongst Canadian Inuit youth constitute a public health crisis for Canada. While efforts have been made to gain a better understanding of the multiple factors that contribute to that crisis, and potential protective factors, this understanding is still greatly incomplete. It is thus important to continue to seek information and knowledge that may contribute to preventive efforts from as many sources as possible, most importantly perhaps from Canadian Inuit youth themselves and their communities. Youth and Elders are ideal informants when it comes to cultural perceptions of wellness or lack thereof. The goals of Study 3 were to 1) use a Two-Eyed Seeing Framework to gain an understanding of Canadian Inuit youths' and Elders' perceptions of the factors that contribute to wellness at an individual and community level, and to understand culture-based traditions that may help achieve wellness; and 2) to examine the differences between the Elder generation and the youth generation regarding beliefs, traditions, practices and activities that may contribute to wellness, and how the two groups may differentially view the origins of mental health difficulties. The second goal used the *Ecological Systems Model of Cultural Resilience* to interpret the differences between the Elder and youth generation in understanding the contributors and challenges to mental health, at both a historical and contemporary level.

In discussing how to achieve wellness and address challenges, youth described coping mechanisms that were in line with many common regulatory strategies promoted in popular and scientific literatures, for example listening to music and deep breathing. Importantly, they also discussed more culturally specific coping mechanisms, such as hunting, storytelling, being on the land, or using IQ principles. Youth suggested that community members could foster cultural pride and self-esteem by participating in cultural activities and learning to live off the land. This is important given that many youth may greatly benefit from educational activities that aim to

contribute to cultural learning, traditional skill development, and community cohesion. Returning to Canadian Inuit roots may be, in itself, a therapeutic intervention. The latter is not a new hypothesis, but instead one that has been reported on many times by Canadian Inuit Elders, the Government of Nunavut and other organizations working in the north (Inuit Mental Wellness Action Plan, 2007; ITK, 2013). This study supports the findings presented by previous organizations for a need to incorporate culturally driven knowledge, practices and traditions into any mental health prevention or intervention program with Canadian Inuit youth. The youth's testimonials are in line with recent research that suggests that enhancing cultural pride and cultural cohesion can help foster wellness at both an individual and cultural level (Andersson & Ledogar, 2008; Chandler and Lalonde, 1998; Fleming & Ledogar, 2008; Strand & Peacock, 2003). There has also been a strong interest in the benefits of embracing one's cultural roots by the Government of Nunavut, a focus to return to Canadian Inuit ways of living, with new programs teaching traditional skills, and an emphasis on school curriculums to teach these skills, as well as Canadian Inuit history, IQ principles and Inuktitut (IQ Education Framework 2007).

Youth detailed a desire to help people in their communities become more comfortable discussing emotions, especially anger and sadness. They reported a significant existing stigma surrounding the expression of depressive or suicidal thoughts. In fact, youth believed that if community members found it easier to discuss hard emotions, some of the socioemotional difficulties in the community may be alleviated, including the rates of suicide. This is particularly interesting given the ambivalence expressed by the Wellness Council in one of the communities to discuss depression and suicide. It is possible that the current generation, perhaps specifically the youth who participated in this study, were more open to discussing mental health and eager to address concerns with suicide, whereas the older generations may have been more

fearful of any contagion effects related to the discussion of suicide. Despite an eagerness to become more progressive in regard to discussions of mental health, youth also expressed distrust of mental health services in their communities, as well as a fear of being stigmatized for accessing services. Youth advocated for services to be accessible in safe places outside of the health centre, as well as for increased education surrounding the importance of accessing services. This is important given the evidence that expressing emotions, especially through talk therapy, is as successful as pharmacological intervention (Cottrell & Boston, 2002; Dittmann & Tine, 2014; Kendall, Hudson, Gosch, Flannery-Schroeder & Suveg, 2008). In academic literature, it is thought that there is a therapeutic alleviation of distress through talk therapy (Stephens et al., 2002). Given that the Canadian Inuit are an oral culture, rooted in storytelling and sharing traditions, it would be important to better understand how to optimally harness a natural inclination to talk and share, providing the resources and the support for such activities, while also minimizing existing stigma associated mental health difficulties. Learning how to harness this within a video-game intervention will be an even greater challenge, as software historically does not have the capacity to promote sharing, disclosing and processing of personal information.

Youth discussed the importance of learning from Elders in their communities. They believed that when Elders lived on the land and engaged in more traditional activities, communities experienced fewer mental health difficulties. Youth also talked about Elders as the best resources for dealing with stress or adverse experiences, as the latter are thought to hold knowledge about how to best overcome challenges. Youth testimonials speak to the importance of harnessing Canadian Inuit culture in promoting wellness and using generations at all levels to help support each other in the community. The potential power of intergenerational relationships

shared between Elders and youth was made evident through the participants' contributions, as was the capacity that older generations may hold in supporting youth. Such suggestions are in line with current literature, suggesting that the role of Elders is vital in promoting wellness in their communities and challenging the continuation of systemic adversities (Faer, 1995; Hodge, Limb & Cross, 2009; Limb & Hodge, 2008). As Elders are the holders of knowledge, they are thought to be paramount in supporting the younger generations in returning to their cultural roots (Noah, 2010; Skye, 2002; Wexler, 2006; Wexler, 2009; Yi, Landais, Kollahdooz & Sharma, 2015). In order to implement any prevention or intervention program, consultation and collaboration must happen with Elders (Noah, 2010; Wexler, 2009). Further, as youth discussed the origins of their mental health difficulties as, at least partially, stemming from historical factors, it is understandable that Elders may need to be at the forefront of helping to understand, reflect and process community-wide historical traumas (Wexler, 2009).

Regarding the adversity youth are observing in their communities, they discussed substance abuse, conflict, family breakdown, hopelessness, trauma, and lack of access to resources. Youth surmised that a resistance to expressing oneself emotionally may be leading to such adversities and detailed that people "bottle up" their personal difficulties, leading to dysregulated or externalized reactions. Importantly, the two other primary causes of adversity discussed by the youth were intergenerational trauma, and the subsequent breakdown of the Canadian Inuit culture. Youth felt that a decrease in communication between community members, and between generations may be the result of the multiple traumas communities have experienced. Further, youth felt that the breakdown of the Canadian Inuit culture has led to a feeling of hopelessness, with people not understanding how to return to the roots of tradition, self-sufficiency, capacity and wellness. The insights shared by youth suggest that the *Ecological*

Systems Model of Cultural Resilience may be an appropriate model for understanding current youth struggles and what is needed to support resilience. The model explains contemporary hardships as related to both distal (historical) and proximal (current) challenges and may capture how youth understand their own mental health difficulties. Historical traumas discussed were not limited to, but included relocation off the land, introduction of substances and the residential school system, while some of the contemporary struggles reported were the use of technology, parenting from a more nuclear family style, shortages of food and difficulty in accessing mental health services. In exploring both the historical and contemporary struggles faced by youth, their ideas of resilience and what is needed in their community shone through: Canadian Inuit youth and Elders alike are wanting to return to more cultural routes, traditional lifestyles, learn to be self-sufficient, learn to open up to each other and rely on each other for support, bridge the intergenerational gaps, build community capacity and tear down the stigma associate with mental health difficulties. It appears that Canadian Inuit youth and Elders are wanting to feel empowered to take action to promote individual and community wide wellness. This is in line with the Government of Nunavut's emphasis on promoting cultural pride in order to build capacity and empower youth (ITK, 2013; IQ Education Framework 2007). It also fits with the need to bridge the communication, collaboration and teachings between generations (Wexler, 2009).

Like youth, Elders reported that wellness can be achieved when community members become more comfortable with themselves, know how to be resourceful, and learn traditional Canadian Inuit skills and knowledge. Elders felt this learning must be achieved at a group level, and not at the nuclear family level, which they worried is becoming more pervasive. Elders reported a sensed breakdown between their own generation and the young generation. They

discussed how nuclear parenting styles and an apparent lack of respect for Elders has resulted in less knowledge sharing between generations, and greater mental health difficulties. Elder reports were in line with youth reports, with a greater need for knowledge sharing, and intergenerational learning. Both groups, importantly, discussed the importance of returning to the Canadian Inuit culture to best promote wellness and harness capacity within the communities. This mirrors recent findings in literature, suggesting that to promote community-wide and individual wellness in Indigenous communities, there needs to be a return to the culture and to the land, as well as enhanced access to traditional knowledge (Fiedeldey-Van Dijk, Rowan, Dell, Mushquash, Hopkins, Fornssler ... & Shea, 2017; McIvor, Napoleon & Dickie, 2009; Stewart, 2008).

Based on the insights provided by the participants during focus groups, it appears that there exists a growing awareness of what constitutes wellness, what challenges wellness and mental health in Canadian Inuit communities, and what role culture may be able to play in the restoration of wellness. Insights such as these may help in demonstrating the urgency of implementing a culturally appropriate framework of Canadian Inuit mental health. By engaging youth in discussions of community perceived solutions to the mental health crisis in the territory, youth capacity may be harnessed and an interest in prevention and intervention for mental health may be fostered.

Limitations

Study 3 was completed with a small number of youth across four communities in Nunavut. Despite the importance of the information provided, the sample size of Study 3 does not allow for generalization of the results. The ideas shared by Elders and youth in Study 3 do not necessarily characterise the thoughts of other communities in Nunavut, if even the communities represented in this study. It is possible, and even likely, that the youth who

participated in Study 3 are informed, advocates of mental health, and more willing to discuss difficulties despite possible stigmas in their communities. In addition, due to the challenges encountered in two of the study communities, it was not possible to gain understandings from all Elders, meaning that the sample of Elders is from two communities only.

Youth who participated in Study 3 were recruited as part of the larger I-SPARX initiative, and as such their participation over the week was saturated with other related activities, and not entirely focused on exploring wellness. Further, due to limits set by the wellness councils in some of the communities, it was not possible to directly ask about depression or suicide. Often youth brought these topics up on their own, and, if so, they were explored, but there was a limit to how extensive these conversations could be. With so many communities affected by recent tragedies, and visits often happening after such a tragedy, it was important to the researchers to be cautious and respectful and stay focused on wellness.

Future Directions

The findings from Study 3 need to be replicated in order to help support the implementation of wellness programs in the North. It will first be important to understand whether Canadian Inuit youth in other communities feel similarly to the youth represented in this study, and or whether they hold differing perspectives. Importantly, due to some of the differences expressed between youth's desire to discuss depression and suicide, and some of the older generation's and a Wellness Council's hesitancy to explore these themes, it will be of paramount importance to hold consultations with Elders and community leaders to understand the safest and most feasible way of exploring these difficulties from a youth perspective. With these consultations and collaborations, it will then be more possible to explore in depth how youth perceive their own mental health difficulties, what leads to a desire to harm themselves

and what ways youth have to cope with such struggles. These areas of exploration will require understanding across multiple communities in order to best support the developments and progressions of the most culturally sensitive and ideally suited programs to promote wellness.

With the Canadian Inuit culture being one of storytelling and based on oral traditions, it is important to continue exploring mental health and wellness with youth, Elders and community members using qualitative approaches. Rich data will result from giving youth and Elders an opportunity to share their experiences, their history, and their hopes. Through this qualitative data, new insights may be gained to support future adaptations of currently implemented intervention programs, or to support the development of new programs. Having extensive opportunities to discuss wellness and mental health will also empower youth to begin talking more openly about their struggles, which in turn should help break down burden and stigma associated with disclosure of mental health needs.

Overall Discussion and Future Directions

The three studies described above aimed to gain a better understanding of what wellness means to Canadian Inuit youth, how to achieve wellness, and what Canadian Inuit communities might find applicable and/or desirable in an e-intervention program that had shown its usefulness with Māori youth in New Zealand. Canadian Inuit youth across these studies reported a need for interventions that are engaging to them, that minimize stigma, and that can help them understand how to support themselves in their unique context with their unique struggles. Outcomes of Study 1 and Study 2 suggest that SPARX, if culturally adapted, might be an effective, accessible and affordable mental health tool for Canadian Inuit communities in Nunavut. Results from Study 1 show that youth who participated in SPARX experienced a decrease in hopelessness, and learned cognitive emotion regulation strategies, such as an ability to decrease their tendency

to catastrophize thoughts, ruminate on negative thoughts, and blame themselves. These are important strategies that have been linked to helping youth better manage acute crisis (Abela & Hankin, 2008; Garnefski & Kraaij, 2006). Youth in Study 2 expressed an interest in SPARX as an e-intervention, and results from these focus groups suggest that SPARX may be: effective in engaging youth culture, in minimizing stigma associated with mental health programming, and in providing skills to support coping with symptoms of depression. Youth in Study 2 also advocated for increased access to services in their communities, which they believed should be comprised of appropriate cultural content. In Study 3, the exploration of cultural content was deepened. Youth and Elders discussed several themes when exploring the need for cultural content in mental health programming. They primarily focused on the importance of harnessing the Canadian Inuit culture, but also the need to incorporate aspects of youth culture and gender cultures in future mental health interventions. Given the mental health challenges experienced by communities, many of which are small, isolated and without access to culturally appropriate and /or evidence-based mental health services, it is more important than ever to develop tools that require little staff support, minimize mental health stigma, and adequately address the needs of the youth and Canadian Inuit culture. It may also be important to harness the Canadian Inuit culture, and to develop more family-based or community-based interventions in the promotion of wellness, instead of ones that are individualized and tailored for youth specifically, without the additional support of their family and community networks.

It will be of paramount importance to involve youth in the development of interventions tailored for Canadian Inuit youth. Importantly, Elders should be a primary source of knowledge in the implementation and future development of any mental health program in the North. Elders are considered the primary source of information for traditional teachings, Canadian Inuit

knowledge, and the history of the culture; involving them through storytelling and sharing will be an important first step. Involving Elders may also support a goal presented by youth and Elders across the three studies, namely the need to bridge the gap between the current generations in order to support Canadian Inuit wellness.

The continuation of I-SPARX in Pangnirtung, Cape Dorset, Pond Inlet, Baker Lake and Cambridge Bay is an important next step for this program. Youth and Elders in these communities are working to create a culturally appropriate version of SPARX (I-SPARX). It will be important to continue to advance this program and seek funding to test I-SPARX, the Canadian Inuit version of SPARX on a larger scale to trial its effectiveness. The cultural adaptations to SPARX will hopefully ensure greater success of the program, and enhance youth engagement, excitement and willingness to participate, as well as alleviate some of the stigma associated with seeking mental health services. It may be important to explore the implementation of I-SPARX in a different capacity moving forward, instead of working with the health services, it is possible that I-SPARX would have greater success if it worked in collaboration with the schools, teachers or was provided on tablets that can be borrowed from the library. Due to the curriculum in schools across Nunavut, and their focus on teaching IQ principles and traditional knowledge, once adapted, I-SPARX may fit well within this curriculum. I-SPARX will also make use of youth advocates for the program, training them to support others in their community with I-SPARX, share knowledge and promote the program in their community. This will aid in decreasing stigma associated with the program.

Based on Study 3 results, and the knowledge that loss of culture has a significant impact on wellness and mental health, it will be important to support communities in harnessing Canadian Inuit culture to promote wellness. Study 3 results suggest that Canadian Inuit youth

might experience mental illness differently than youth in urban parts of Canada, for example, depression may manifest as externalizing symptoms, rather than internalizing ones. This suggests that Western-centric diagnostic approaches (the DSM) are likely not appropriate for use in the Canadian Inuit culture and are not capturing, understanding, or explaining Canadian Inuit youth's struggles adequately. Youth and Elders alike see a return to culture and traditional Canadian Inuit ways as the core to enhancing wellness in their communities. Further exploration of how loss of wellness, and mental health challenges such as depression are experienced by youth will be important to explore. However, it will be crucial to first build relationships, so that all community members might feel comfortable with greater in-depth exploration of mental health difficulties and experiences. Only once the factors required for the restoration of community wellness and mental health are better understood can we assess if therapeutic e-interventions such as I-SPARX might be helpful in boosting resilience against the factors that contribute to suicide risk. The importance of supporting community wide resilience, through promoting cultural esteem and traditional knowledge sharing should be prioritized.

Conclusion

Canadian Inuit youth in Northern Canada face extreme adversities and some the highest adolescent suicide rates in the world. Despite their increased risk, these youth's communities are often without resources for early prevention and intervention programs, and without the human power to develop and implement these services. The three studies above established that the SPARX program is an engaging psycho-educational tool for teaching cognitive behavioural skills for depression, reducing hopelessness and catastrophizing thought patterns. The importance of a culturally adapted version of SPARX was supported by the data. The results suggest that youth and Elders wish and need to collaborate to share knowledge and explore

traditional cultural roots, in order to help empower their community and build capacity and wellness. Harnessing the Canadian Inuit culture and using it in the context of I-SPARX shows potential for enhancing how youth access mental health services and achieve wellness.

The future of I-SPARX should strive to meet the goals listed by Canadian Inuit youth, in collaboration with these youth. Goals include helping to build community-based capacity, helping to create culturally informed versions of the program, and harnessing youth strength by making them the visionaries, champions, and holders of I-SPARX knowledge. Youth need to be involved at every step of the I-SPARX program; in developing research questions, a research plan, and in implementation. Youth are the best resources for understanding what will be successful with their peers, and by empowering that, it will not only give greater success to the program, but it can instill in youth a sense of achievement, strength and success, that if held on to, can help build community capacity and wellness. It is also vital that youth collaborate with Elders in the co-creation of I-SPARX. This will help achieve the goal of bridging generations presented by both youth and Elders but will also allow youth to learn all the cultural knowledge and traditions they reported desiring. Having this knowledge will further cultivate their ability to become champions in their community, and to support their peers as well as future generations.

Results from the above studies have implications that are more wide-spread than their influence on the future of I-SPARX. The Truth and Reconciliation Commission of Canada released Calls for Action of how-to better support Indigenous peoples across Canada (TRC, 2015). Results suggest that in addition to the TRC findings, which focus primarily on reconciling with Indigenous Canadians with regard to the damage inflicted by the Residential School System, it is important to account for the intergenerational traumas and the associated ruptures in the relationships and knowledge sharing between Elders and the youth generation. Study 3

results showed how powerful communications between Elders and youth can be. These participants spoke about the devastating repercussions of the breakdown between their generations, and the ensuing community-wide mental illness as a result. It seems apparent and vital that any future work with Canadian Inuit communities or mental health projects in the North account for the need to bridge intergenerational communication. For example, one call to action is for federal, provincial and territorial governments to develop more culturally appropriate parenting programs. Based on the results of Study 3, it would seem important to include Elders and community members in these parenting programs, to shift away from a nuclear family and help support all caregivers in a child's life. Using Canadian Inuit knowledge will foster better traction and success than Western-centric views of parenting.

In facilitating the treatment of mental health difficulties in Canadian Inuit communities, one of the biggest leaps that can be made would be to support capacity building in the community. This can be done by increasing the number of traditional healers/helpers and training Canadian Inuit peoples to be working in mental health centres. Youth talked about the desire to have someone they can trust and about their mistrust of "White" people in their community. If more Canadian Inuit were trained to support the needs of their youth, it may be that services were more readily accessed, trusted, and destigmatized. Further, mental health services in Nunavut are currently accessed in Health Centres, where people go when they are ill. Moving mental health services away from the physical representation of the medical model may have a big influence on how community members access these services. It would also allow services to become more culturally appropriate and focused, for example making use of storytelling, trust, respect and relationship building. These aspects are currently difficult to implement when mental health workers are on short term contracts, are outsiders to the community, and must gain the

trust of the community before they can gain the trust of individuals. Overall, it will be important to continue having conversations with Canadian Inuit youth, Elders and community members to identify how they would best want their mental health advocated for.

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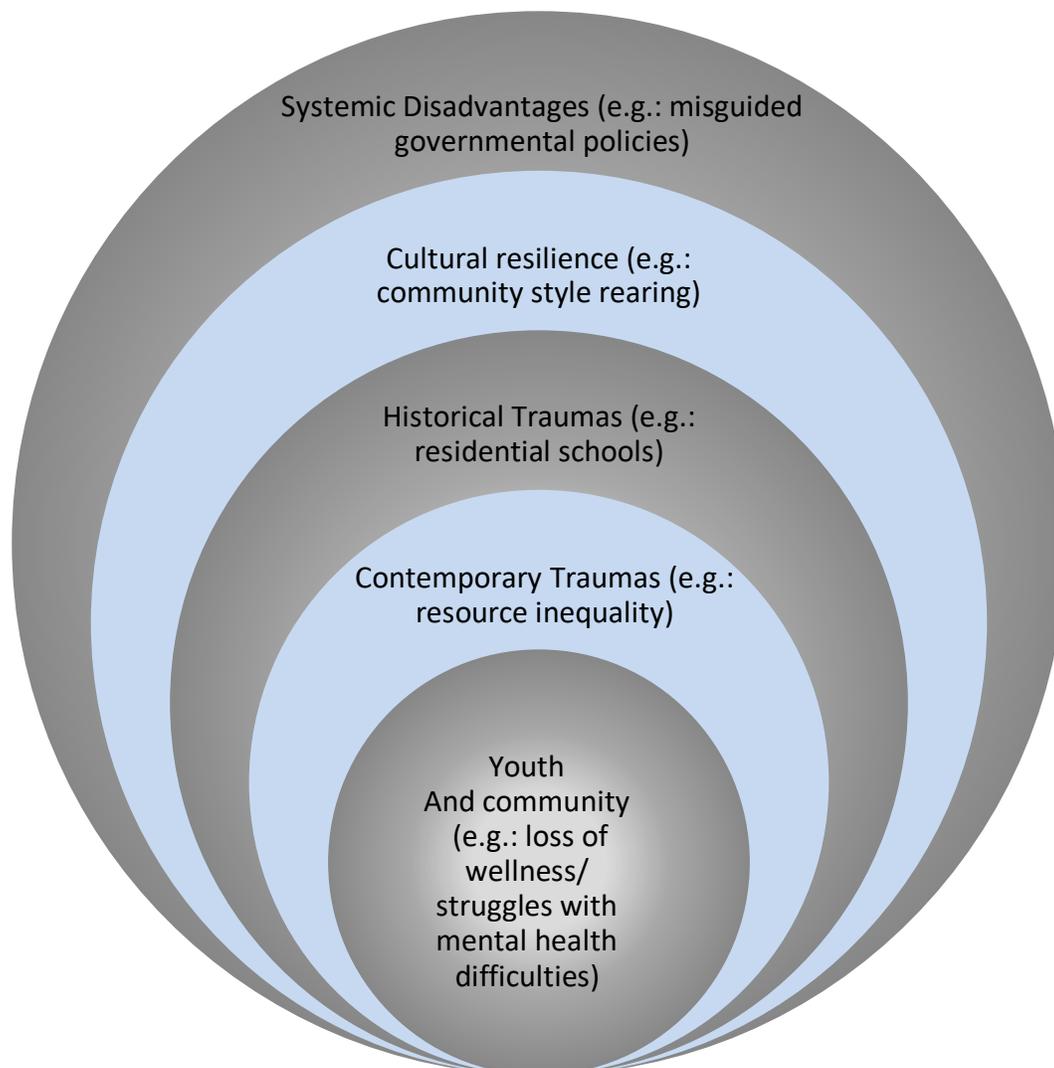
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Appendix A

Ecological Systems Model of Cultural Resilience



Appendix B

Image captures of the SPARX program



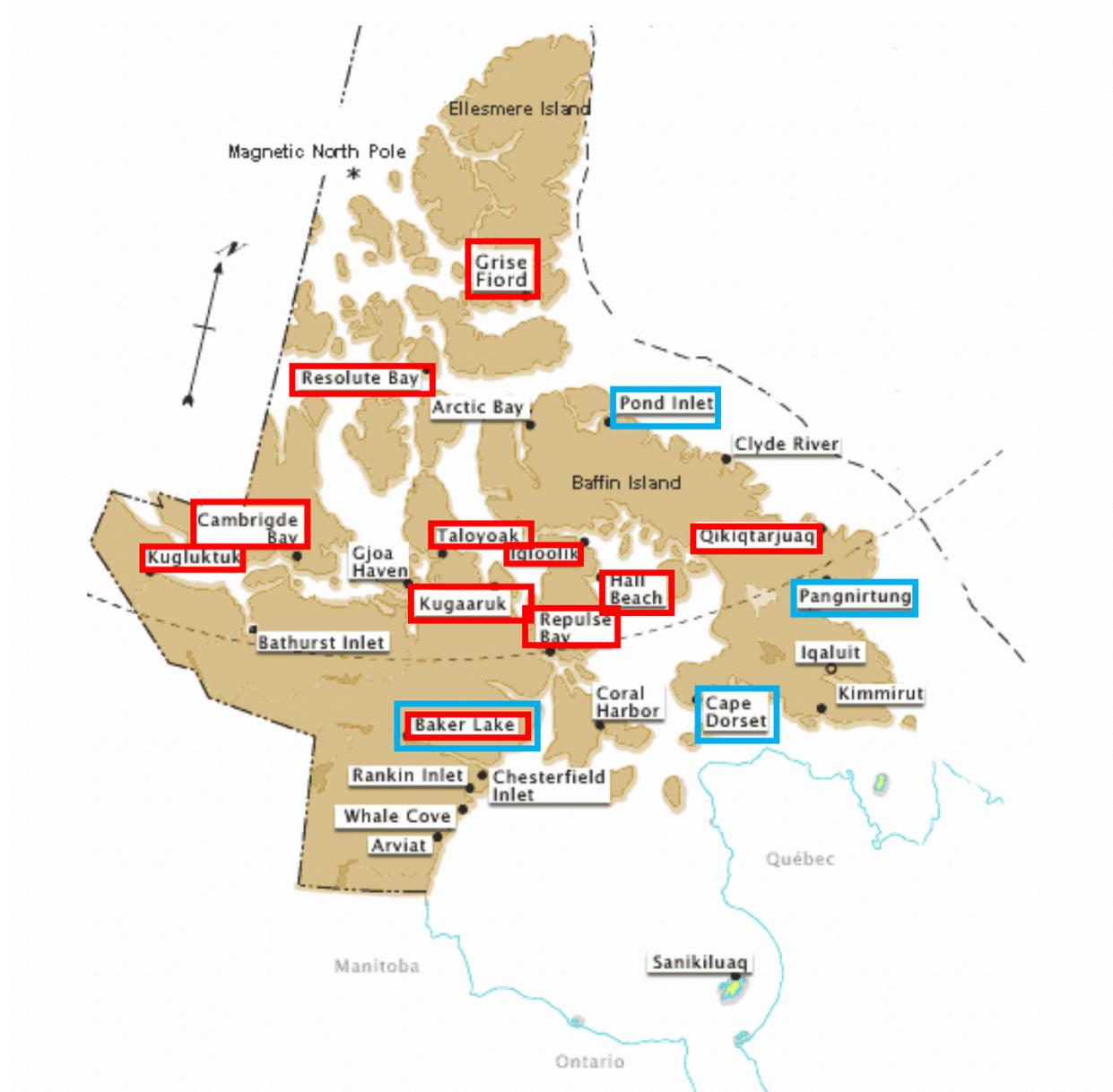
Pictured: Avatar options; Guide is 5th from the right



Pictured: Avatar using his skills to rid of Gloomy Negative Automatic Thoughts (GNATS)

Appendix C

Map of Participating Communities



RED communities represent communities who participated in Study 1 and Study 2

BLUE communities represent communities who participated in Study 3

Appendix D

Study 1 and 2 Consent Form

INFORMED CONSENT FORM – Pilot Phase (Participants 16 years and older)

Date: April 15, 2014
Study Name: Making SPARX fly in Nunavut
Principal Investigator:
Co-Investigators:

Sponsor:

PURPOSE OF THE RESEARCH: The goal of this project is to test trial and evaluate the computerized SPARX (Smart, Positive, Active, Realistic, X-factor thoughts) intervention program for youth (aged 13 - 18 years) in Inuit communities. The SPARX program was developed to help youth who are at risk for depression learn new skills for dealing with feelings of depression or stress.

In Phase 1 of the project, our team will evaluate how useful the SPARX program is in decreasing symptoms related to depression and increasing resilience in Inuit youth. We will collect feedback from youth who participate and community clinicians (who will be administering the program). We will use this feedback to help make the SPARX program relevant for Inuit youth.

In Phase 2 of the project, our team will develop a different version of the SPARX program that is specifically for Inuit youth who experience low mood and symptoms of depression.

In Phase 3 of the project, our team will test trial the new SPARX program with a large number of Inuit youth in your community.

WHAT WILL YOU BE ASKED TO DO: Participation in this study is voluntary. If you agree to participate in this study, you will be asked to play the SPARX program on a computer, once or twice a week for 7 weeks. The community clinician will provide you with the date that your SPARX program will start. You will play SPARX on a laptop provided by your community clinician (i.e., your registered psychiatric nurse, child and youth outreach worker or registered nurse).

Before and after you complete the SPARX program, you will be asked to answer several questions that ask about your i) mood and possible symptoms of depression ii) quality of life, iii) mental health functioning, and iv) resiliency (or how you deal with adversity). Throughout your participation in the SPARX program, you will be asked to complete a set of questionnaires 3 times. Each time will take approximately 30 minutes.

You will also be asked to participate in a short interview about your experience using the SPARX software that will be conducted by the community clinician. The interview will take approximately 15 minutes. You will also have the chance to share your feedback on your experience with the SPARX program, and your suggestions for improvement, through a meeting with your community clinician, a teleconference, or online forums if you choose.

RISKS AND DISCOMFORTS: Some of the questions during the interview may feel difficult to answer. For example, questions will ask about symptoms of low mood or depression, about how you feel about your life, and some experiences that affect your mood that might be negative. There is a possible risk that you may become upset while speaking about your mental health and experiences with the SPARX program.

The community clinician will be available to help you if you feel uncomfortable or start to feel upset. If you feel discomfort, or experience negative thoughts at any point before, during or after playing with the SPARX software, or while completing questions or interviews, the community clinician will be available to answer any questions you may have. You can stop participating in the study at any point because participation is voluntary. Resources will be given to you that show how to access other helpful supports in your community.

BENEFITS OF THE RESEARCH AND BENEFITS TO YOU: The goal of this study is to test a fun and useful computer program to help young people when they feel they are in a low mood or depressed. You may or may not benefit directly from taking part in this study. We hope that your experience with the SPARX program will provide you with skills and strategies that can help when you feel down, stressed or depressed. After completion of Phase 3 of this project, the results will be made available to you and your community.

VOLUNTARY PARTICIPATION: It is entirely your choice whether or not you agree to participate in this study. If you do not agree to take part in the study, this will have no impact on your participation in any of the programs offered by the organization that suggested your participation. Your decision not to participate in the study will have no influence on the nature of your relationship with any of the members of this research team and it will not affect the mental health care services you receive now or in the future.

WITHDRAWAL FROM THE STUDY: If you do agree to take part in the study, then you have the right to only answer the questions you are comfortable answering. You can also stop participating in the study at any time, for any reason. Your decision to stop participating or to refuse to answer particular questions will have no impact on your participation in any of the programs offered by the organization that suggested your participation. Your decision to withdraw from the study will have no influence on the nature of your relationship with any of the members of this research team and it will not affect the mental health care services you receive now or in the future. If you decide to withdraw from the study, all information about your participation will be immediately destroyed.

CONFIDENTIALITY: All information you share during the research project will be kept anonymous and confidential. Your name will not appear in any report or publication of the research. All personal information will be removed from the collected documents and will be replaced with an identification number. Information will be collected and analyzed from questionnaires, community clinician notes, focus group transcripts, and answers provided in a brief survey. Once it has been forwarded to the researchers, your information will be safely stored in a locked cabinet of a secure research office, and on a password protected, secured laptop computer. Only the primary researchers and trained research assistants will have access to this information. Information about you personally will not be shared with anyone, and confidentiality will be provided to the fullest extent possible by law. The data you provide will be stored for a period of two years, after which time it will be destroyed.

The information collected in this study will be presented in the form of a final report and research publications in collaboration with the LaMarsh Centre for Child and Youth Research at York University, Government of Nunavut, Nunavut Research Institute, Qaujigiartiit Health Research Centre, and the University of Auckland, NZ. This research will describe the results of each phase of the study,

implications, and recommendations for future research and clinicians involved in work with youth experiencing depressive symptoms and youth in Inuit communities.

QUESTIONS ABOUT THE RESEARCH? If you have questions about the research in general or about your role in the study, you can contact your local contact person, the community clinician, whose number you will be given at the beginning of your participation. You can also contact [REDACTED]

This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

If you have any ethical concerns, questions about this process, or about your rights as a participant in the study, please contact either the [REDACTED]

Legal Rights and Signatures:

I _____, consent to participate in the research study "*Making SPARX Fly in Nunavut*" conducted by the LaMarsh Centre for Child and Youth Research at York University and the Government of Nunavut.

I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to completing the SPARX program, answering questions, and being interviewed for the project. I understand that steps will be undertaken to ensure that the information collected will remain confidential unless I consent to being identified. I also understand that, if I wish to withdraw from the study, I may do so without any repercussions.

I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature _____

Date _____

(Participant)

Signature _____

Date _____

(Witness)

Audiotape Consent

I _____, give my consent to be audiotaped in a brief semi-structured interview upon completion of the SPARX program and/or a sharing circle/focus group about my experience with the SPARX program. I understand that the purpose of the audiorecording is strictly for this study, to be coded by the research team, and then destroyed after a period of two years. My questions have been answered to my satisfaction and I agree to participate in this study. I understand that I can stop taping at any time.

I _____, give my consent for the listening of my audiotaped interview for the purpose of (please check to indicate consent): training

Signature _____

Date _____

(Participant)

Re-Contact for Future Research Consent

Please check the appropriate box below and print your name:

I _____, give my consent to be contacted in the future for the purpose of
(please check to indicate consent): follow-up to the SPARX research study.

Appendix E

Study 1 and 2 Demographic Information

Participant Community	N
Baker Lake	2
Hall Beach	2
Kugaaruk	3
Kugluktuk	3
Qikiqtarjuaq	2
Rankin Inlet	2
Naujaat	3
Taloak	2

Participant Age	N
13 years old	1
14 years old	9
15 years old	3
16 years old	3
17 years old	2
18 years old	1
Older than 18 years	1

Participant Identified Gender	N
Male	8
Female	12

Participant Grade	N
Grade 7	1
Grade 8	2
Grade 9	8
Grade 10	3
Grade 11	2
Grade 12	2

Participant School Attendance	N
Attending School	17
Truant	3

Appendix F

Study 2 Participating Communities

Youth Focus Groups

Community	Number of youth	Facilitator involvement
Kugluktuk	2	No
Qikiqtarjuaq	1	Yes
Igloolik	2	Yes
Hall Beach	3	Yes
Qikiqtarjuaq (2)	1 (different youth)	Yes
Baker Lake	1	Yes
Kugaaruk	2	Yes

Community Facilitator Focus Groups

Community	Facilitator involvement
Kugluktuk	Yes
Qikiqtarjuaq	Yes
Igloolik	Yes
Hall Beach	Yes
Qikiqtarjuaq (x2)	Yes
Baker Lake	Yes
Kugaaruk	Yes
Cape Dorset	Yes
Pond Inlet	No
Grise Ford	No
Resolute	No
Taloyoak	No
Repulse Bay	No
Arviat	Yes
Cambridge Bay	Yes
Coral Harbor	No
Rankin Inlet	Yes

Appendix G

Study 2 Focus Group Script

We're so excited to be able to talk with you today and hear all about the things you liked and didn't like about playing SPARX, and we really want to thank you for taking this time to talk with us about your experiences playing the game! As some of you might know, we are hoping that SPARX can be made available to all teenagers in Nunavut who are interested in playing. Some of the things we are going to ask you to today is to help us figure out how the game can be a better fit for the territory, and we would love any suggestions you might have about how it can be changed so that your friends, brothers, sisters, or cousins might like the game even more. We also want to hear from you on your own if you would like to talk with us privately and share more thoughts about the game, so feel free to email us at [REDACTED], or tell your community worker you would like to talk with us, and they will let us know. So, I'm going to read out a few questions, and I'm just curious about all your thoughts, so feel free to say what you would like, and don't worry about telling us your name if you don't want to!

1. I'm hoping you could tell me about some of the things you liked about SPARX? Can you give me specific examples of parts of the game that you found particularly useful? What about any parts you didn't like? Would you recommend SPARX to a friend or sibling? Why?
2. I'm curious if you thought the skills that you learnt from playing SPARX were useful for you in your day-to-day life. Did SPARX change the way you think about things at all? In what way? What are some examples? If it didn't, why don't you think it made a difference for you?
3. Were there times when you thought about the skills you learnt from SPARX when you weren't playing the game, for example if you were at school, or with friends, or family? Tell me a bit about how you used these skills. Are there any examples of specific skills you found particularly useful?
4. We're hoping to be able to change the game a little bit so that it is more suitable for teenagers in Nunavut, for example, it could be more focused on the Inuit culture. If you were in charge of how the new game looks or what it does, what kinds of things would you change? Is there anything in the current game you would really love to see stay the same?
 - a. Probe by saying it can be the avatar, the scenery, the dress, the colours, language etc.
5. Were there any challenges you faced when playing SPARX? For example, did you find it annoying to have to go to the community workers office, or were you embarrassed to be playing, or did you find it was hard to find the time to play? What kind of things do you think might make it easier for teenagers who want to play SPARX so that all your friends and siblings can play if they want to?

6. Is there anything else you would like to share with us about your experience playing SPARX?

Thanks so much everyone for helping us out today, and if anyone would like to tell us more about their thoughts about SPARX, send us an email, or tell your community worker. We will make sure to contact them all next week and check in to see who would like to help us make SPARX even better for the rest of the teenagers in Nunavut!

Appendix H

Study 2: Focus Group Themes

Themes Discussed in Focus Groups

- Changes they'd like made to the game: scenery, costume, design, how avatars look
- Challenges they'd like included in game that are more culturally appropriate
- Ideas about community wellness
- What youth these days enjoy doing to feel better
- Technical adaptations (tablet, controls etc.)
- Resource sheet (who in your community do you feel comfortable talking to)

General questions

“The plot of the current game is to earn gems by learning new skills so that you can restore wellness to the world, if you made it more Inuit specific, what would you want the goal of the game to be?”

“The game was made in New Zealand, so it looks like New Zealand and has that type of design and scenery, what would you change to make it more Inuit specific?”

“What type of challenges do you think youth would enjoy to help teach them skills about wellness?”

“Are there other wellness skills that you think are important for youth in your community to learn?”

“Where and when would you want the game to take place?” (olden days or modern day)

“How would you want the avatars to look?”

“Do you like the guide/would you change the guide?”

“Would you be interested in talking to elders about wellness and your community to learn about other things that can be included in the game?”

“Do you think youth in your community would be interested in playing the Inuit version of this game? When and how?”

- Lots and lots of follow up questions and prompts to dig deeper

Appendix I

Study 3: Participant Information by Community

Participant Community	Participant Age
Pangnirtung	14
	15
	16
	16
	17
Baker Lake	14
	16
	16
Pond Inlet	18
	18
Cape Dorset	14
	15
	15
	16
	22

Appendix J

Study 3 Consent Form

INFORMED CONSENT FORM (Participants 16 years and older)

Date: January 23, 2018
Study Name: Making I- SPARX fly in Nunavut
Principal Investigator:
Co-Investigators:



Sponsor: The Canadian Institutes of Health Research

PURPOSE OF THE RESEARCH: The goal of this project is to develop an Inuit-specific adaptation of the computerized SPARX (Smart, Positive, Active, Realistic, X-factor thoughts) intervention program for youth (aged 13 - 18 years). The SPARX program was developed to help youth who are at risk for depression learn new skills for dealing with feelings of depression or stress.

We have completed a pilot study that showed that a Māori version of SPARX was promising in decreasing symptoms of depression. During the pilot study, youth participants and community clinicians recommended creating an Inuit-specific version of the program. It was recommended that this would increase interest in the program and make it more relatable. A culturally appropriate version of SPARX (I-SPARX) may increase individual resilience through enhancing cultural pride and community wide resilience.

In the I-SPARX project, we will collect feedback from youth, Elders and community members on how to make the SPARX program more relevant for Inuit youth. In phase 1 of this study, youth-informed adaptations will be implemented with the support of the Pinnguaq organization Nunavut. In Phase 2 of the project, Inuit youth will participate in playing the newly adapted I-SPARX in order to evaluate its effectiveness.

WHAT WILL YOU BE ASKED TO DO: Participation in this study is voluntary. If you agree to participate in this study, you may be asked to:

- A. Provide knowledge / ideas regarding Inuit culture and practices, and how to incorporate IQ principles into the I-SPARX program to make it useful for Inuit youth. With the support of Pinnguaq staff, you will be asked to advise on design, content and adaptation of the I-SPARX video game.
- B. Play the SPARX and/or I-SPARX games and provide feedback on your experience
- C. Participate in focus groups exploring wellness in your community
- D. Provide feedback on your thoughts and mood in questionnaires that will be selected by members of your community as useful for the assessment of resilience and general mental health
- E. Provide feedback on your experience of the process of being involved in this project: through interviews, focus groups, or a questionnaire designed by members of your community

RISKS AND DISCOMFORTS: Some of the discussions regarding mental health and/or the history of the Inuit people may feel difficult or upsetting. For example, some questions will relate to the experiences of people with low mood or depression and some experiences that are linked to symptoms of depression. There is a possible risk that you may become upset while participating in these discussions.

The community facilitator will be available to help you if you feel uncomfortable or start to feel upset. If you feel discomfort, or experience negative thoughts at any point before, during or after participating in the adaptation of I-SPARX, the community facilitator will be available to answer any questions you may have. You can stop participating in the study at any point because participation is voluntary. Resources will be given to you that show how to access other helpful supports in your community.

BENEFITS OF THE RESEARCH AND BENEFITS TO YOU: The goal of this study is to develop a culturally appropriate intervention that is fun and useful for young people when they feel they are experiencing low mood or depression. You may or may not benefit directly from taking part in this study. We hope that by helping create the I-SPARX program, you will feel connected to your community, culture and empowered to support your wellness and the wellness of others in your community.

VOLUNTARY PARTICIPATION: It is entirely your choice whether or not you agree to participate in this study. If you do not agree to take part in the study, this will have no impact on your participation in any of the programs offered by the organization that suggested your participation. Your decision not to participate in the study will have no influence on the nature of your relationship with any of the members of this research team and it will not affect the mental health care services you receive now or in the future.

WITHDRAWAL FROM THE STUDY: If you do agree to take part in the study, then you have the right to only participate in the discussions you are comfortable with. You can also stop participating in the study at any time, for any reason. Your decision to stop participating or to refuse to discuss particular subjects will have no impact on your participation in any of the programs offered by the organization that suggested your participation. Your decision to withdraw from the study will have no influence on the nature of your relationship with any of the members of this research team and it will not affect the mental health care services you receive now or in the future. If you decide to withdraw from the study, all information about your participation will be immediately destroyed.

CONFIDENTIALITY: All information you share during the research project will be kept anonymous. Your name will not appear in any report or publication of the research. All personal information will be removed from the collected documents and will be replaced with an identification number. The information you share is for the purpose of the adaptation of the SPARX program, for this reason, information will be kept anonymous but will not be confidential. Information will be shared with the Pinnguaq organization Nunavut. The information collected in this study will be used to create the I-SPARX program.

Focus groups will be held in a group format, and thus any information provided during these meetings will be shared with members of the group. Group members are asked to maintain confidentiality and not discuss information outside of the focus group.

USES OF RESEARCH DATA: The data collected for this project belong to the individual communities in which these data were collected. With the community councils' permission, the data will be presented to the communities, and also to scientific meetings, and published in scientific journals. Some of the data may be written up in research reports including PhD dissertations and/or Masters' theses.

QUESTIONS ABOUT THE RESEARCH? If you have questions about the research in general or about your role in the study, you can contact your local contact person, the community facilitator, whose number you will be given at the beginning of your participation. [REDACTED]

This research has been reviewed and approved by the Nunavut Research Institute, the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

If you have any ethical concerns, questions about this process, or about your rights as a participant in the study, please contact either the [REDACTED]

Legal Rights and Signatures:

I _____, consent to participate in the research study "*Making I-SPARX Fly in Nunavut*" conducted by the LaMarsh Centre for Child and Youth Research at York University.

I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to my participation. I understand that steps will be undertaken to ensure that the information collected will remain anonymous. I also understand that, if I wish to withdraw from the study, I may do so without any repercussions.

I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature _____

Date _____

(Participant)

Signature _____

Date _____

(Witness)

Audiotape Consent

I _____, give my consent to be audiotaped during discussion about adaptations for the I-SPARX program. I understand that the purpose of the audiorecording is strictly for this study, and to benefit the adaptation of the current SPARX program. My questions have been answered to my satisfaction and I agree to participate in this study. I understand that I can stop taping at any time.

I _____, give my consent for the listening of my audiotaped interview for the purpose of (please check to indicate consent): training

Signature _____

Date _____

(Participant)

Re-Contact for Future Research Consent

Please check the appropriate box below and print your name:

I _____, give my consent to be contacted in the future for the purpose
of
(please check to indicate consent): follow-up to the SPARX research study.

Appendix K

Study 3: Themes Discussed by Community

Youth Themes	Community
Practices of Wellness	P, B, PO, C
Lessons Learnt from Elders	B, PO, C
Difficulties Faced by Communities	B, PO, C
Uses of and Perceptions of Mental Health Services	B, PO, C
Importance of Canadian Inuit Knowledge	P, B, PO, C
Family as a Support System	B, PO, C
Elder Themes	Community
How to Live Well	P, C
Hopes for Youth	P, C
Elders as Community Members	C
How Life Used to Look	P, C
Cultural Shifts	P, C

P = Pangnirtung
 B = Baker Lake
 PO = Pond Inlet
 C = Cape Dorset