

# How did Nunavummiut youth cope during the COVID-19 pandemic? A qualitative exploration of the resilience of Inuit youth leaders involved in the I-SPARX project

Alaina Thomas<sup>a</sup>, Yvonne Bohr<sup>a</sup>, Jeffrey Hankey<sup>a</sup>, Megis Oskalns<sup>a</sup>, Jenna Barnhardt<sup>a</sup> and Chelsea Singoorie<sup>b</sup>

<sup>a</sup>Department of Psychology, York University, Toronto, Ontario, Canada; <sup>b</sup>Nunabox, Iqaluit, Nunavut

## ABSTRACT

This study investigated how COVID-19 has affected the wellness of a group of Inuit youth leaders in Nunavut in the context of their involvement with an ongoing mental health research initiative, the *Making I-SPARX Fly in Nunavut [I-SPARX]* project. The study had three goals: (1) to understand how the pandemic has affected *I-SPARX* leaders' perceived involvement in the *I-SPARX Project*; (2) to build knowledge around how the pandemic has impacted the daily life and wellbeing of youth in Nunavummiut communities; and (3) to acquire a culturally specific understanding of their coping mechanisms and resilience strategies through the lens of *Inuit Qaujimagatuqangit* (IQ). Nine Inuit youth were interviewed virtually about their participation in *I-SPARX*, their life during the pandemic, and their coping strategies. Their comments were analysed using inductive thematic analysis. Pandemic challenges, the utility of *I-SPARX* teachings and participation, and culturally and community-embedded pathways to resilience were discussed.

The implications of COVID-19 on Inuit youth in remote communities are not fully understood. The current study illuminates their experiences of the pandemic to inform future research on ways in which Inuit youth might be supported in situations, such as a global pandemic, that restrict their traditional resilience-enhancing activities and create social isolation.

## ARTICLE HISTORY

Received 11 November 2021

Revised 7 February 2022

Accepted 15 February 2022

## KEYWORDS

Inuit resilience; pandemic resilience; Nunavut; Indigenous mental health; Indigenous communities; youth



## Introduction

This study was designed to explore the impacts of the COVID-19 pandemic on the wellness of Inuit youth, specifically *I-SPARX* project youth leaders and participants, in Nunavut. In addition, we aimed to identify culturally specific factors that contribute to Inuit youth's coping and resilience in the context of *Inuit Qaujimagatuqangit* (IQ), an Inuit philosophy and approach to life that encompasses the values, life skills, and knowledge of traditional Inuit culture [1,2,3]. The current study is a subset of a larger initiative conducted at York University in affiliation with three organisational partners and communities across Nunavut.<sup>1</sup> *Making I-SPARX Fly in Nunavut [I-SPARX]* aims to assess the efficacy of a psychoeducational video game, *I-SPARX*, in treating depression and feelings of hopelessness among Inuit youth [4]. The current study contributes to the *I-SPARX* initiative by informing team members' and communities' understanding of the impacts of COVID-19 on the project's Inuit youth leaders' mental health and coping strategies.

In addition to causing serious health challenges, the COVID-19 pandemic has been detrimental to society's

social and economic functioning. The closure of businesses and schools has resulted in unemployment, reduced access to services, and social isolation [5]. This new way of living has posed unique challenges for young people in particular. Youth have had to adjust to a life of online school, resulting in fewer social interactions and the cancellation of extracurricular activities and significant life events. These transitions have made many children and adolescents feel a loss of security and safety and the mental health and wellbeing of young people has suffered worldwide [6]. Emergent research documents increased levels of depression, anxiety, PTSD, and perceived distress across populations since the outbreak of COVID-19 [7–10].

Under the fallout of historical and ongoing colonialism, Inuit youth in Nunavut are particularly vulnerable to the psychosocial consequences of the virus as they face systemically-rooted challenges with mental health and suicidality [4]. Given the ongoing suicide crisis among Inuit youth in Northern Canada – at rates more than nine times the national average and among the highest in the world [13] – it is crucial to

**CONTACT** Alaina Thomas  [athomas7@yorku.ca](mailto:athomas7@yorku.ca)  Department of Psychology, York University Toronto, Ontario, M3J 1P3, Canada

<sup>1</sup>Isaksimagit Inuusirmi Katujjiqaatigiit Embrace Life Council, Pinnguaq, and Nunabox.

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

understand how these youth cope with hardship and to explore factors that promote their resilience and mental health. This study sought to build knowledge around Inuit experiences of the COVID-19 pandemic using a Two-Eyed Seeing approach [14], a process of integrative science and “gift of multiple perspective” (p. 335) that refers to seeing from one eye with the strengths of Indigenous knowledges, and from the other eye with the strengths of Western knowledges and using both these eyes harmoniously for the benefit of all. Providing the Inuit “eye”, Inuit youth shared and taught the researchers their perspectives and interpretations of wellness, describing changes in their participation in *I-SPARX*, new stressors brought on by the virus, and coping strategies that contributed to their resilience. The Western “eye” is represented by researchers at York University. Working in tandem with Inuit youth and their communities, York researchers co-designed and led the *I-SPARX* project, which encompasses the current study. York team members were responsible for analysing the knowledge articulated by the *I-SPARX* youth and mobilising these findings into academic formats. The Western and Inuit lenses worked together to provide a holistic approach to the research methods.

### ***Nunavut’s response to COVID-19***

Considering Nunavut’s challenging history with epidemics, the Government of Nunavut (GN) took a cautionary approach to managing the virus. Beginning in March 2020, Nunavut prohibited travel into the territory for non-residents, closed schools, and implemented curfews in densely populated communities [15]. These preventive measures were extremely effective and were slowly relaxed with strict contract tracing in place [16]. For eight months, Nunavut was the only jurisdiction in North America that had maintained zero cases of the virus [17], until 6 November 2020 when the GN announced its first confirmed case in Sanikiluaq, followed by outbreaks there and in Arviat and Rankin Inlet (GN Department of Executive and Intergovernmental Affairs [18]. On November 18, Nunavut had to re-implement territory-wide strict social distancing regulations, mask mandates, and the closure of non-essential businesses, schools, and travel. Nunavut announced the first fatalities in the territory due to the virus on 5 January 2021 only a week after Nunavut received its first vaccine shipments. Between January and March 2021 – the period during which data were collected for the current study – restrictions were gradually lifted as case counts receded, until April 15 when Iqaluit had its first confirmed case of COVID-19 and the city was placed under

the strictest health measures. Not until April 20 in Kinngait did any community in which study participants resided have a confirmed case of the virus. As of 26 March 2021 the approximate date of completion of the study, there were 395 confirmed cases of COVID-19 in Nunavut, with zero active cases, 391 recoveries, and four deaths [18].

### ***Inuit youth’s unique vulnerability to COVID-19: historical and contemporary inequities resulting from the enduring sequelae of colonialism in Canada***

Inuit in Nunavut, who constitute 86% of the territory’s population, are the youngest of all Indigenous people in Canada, with a median age of 23 years. Health and infrastructure inequities, geographic isolation, a history of White people introducing disease to their communities, loss of cultural identity, and high rates of mental health concerns [19–21] underscore the vulnerabilities of Inuit youth to the physical and psychological impacts of COVID-19 and the importance of understanding the culturally specific nature of resilience in the context of a prolonged and deadly pandemic.

Historically, pandemics are responsible for the near eradication of Indigenous peoples and remain a persistent threat to their existence and wellbeing [22]. While research indicates that Indigenous communities in general have reported higher rates of symptoms associated with COVID-19 [23], little is known about how Northern Inuit communities have fared throughout the pandemic. A close look at the socio-economic and historical context in which Inuit Nunavummiut are embedded, however, can provide clues and insights. For instance, the majority of Northern Inuit endure chronic food insecurity – a lack of secure access to sufficient amounts of safe and nutritious food – due to inadequate infrastructure and concomitantly high food costs [24]. Household food insecurity in Nunavut is as high as 57%, and even higher among Inuit, and can have severe consequences on health and wellbeing, including malnutrition, chronic disease, distress, depression, suicidal ideation, and vulnerability to infection [24].

Understanding the history and context of tuberculosis (TB) and colonialism in Nunavut provides insights into the potential repercussions of COVID-19 on the health of Inuit. To this day, Inuit are disproportionately affected by TB. The incidence rates of TB in 2016 were 170.1 per 100,000 among Inuit, compared to 0.6 per 100,000 among Canadian-born, non-Indigenous people, and 23.8 per 100,000 among First Nations [25]. TB is

often referred to as a disease of poverty and health inequity [26]. Indeed, due to the enduring effects of colonialism, including poverty and inadequate housing, Inuit communities experience some of the most crowded living conditions in Canada, increasing the risk for the spread of communicable diseases such as TB and COVID-19 [26,27]. In addition, lack of access to local health care and historical TB practices, such as forced confinement in hospitals and separation from families, have contributed to fear and mistrust of the healthcare system, resulting in sustained ongoing TB cases, poorer health outcomes, and fewer treatment completion rates for Inuit [25]. These ripple effects have pointed implications for potential social, economic, and mental and physical health outcomes related to the COVID-19 pandemic.

### ***Anticipated psychosocial effects of COVID-19 on Inuit youth***

While little is known about the impact of the pandemic on Inuit youth specifically, researchers and health experts in other jurisdictions have raised concerns about the exacerbating impacts of the pandemic and associated public health restrictions on the mental health of already vulnerable populations, including Indigenous youth [11,12].

Emergent research documents increased levels of depression, anxiety, PTSD, and perceived distress across populations since the outbreak of COVID-19 [7–9]. Early in the pandemic, 60% of Indigenous people in Canada indicated their mental health became somewhat or much worse as a result of physical distancing requirements, and Indigenous women’s mental health has been particularly impacted by the pandemic [10]. Factors known to promote wellbeing and resilience among Indigenous youth – such as an internal locus of control, sense of mastery, and connectedness with friends, family, and community – are all imperilled by the pandemic, placing young people at additional risk well into the future [12].

### ***Intergenerational coping and resilience of Inuit people through the lens of Inuit Qaujimajatuqangit***

Resilience can be defined as the ability to positively cope, find hope, and foster constructive outcomes in contexts of adversity [28–30]. Inuit researchers and knowledge-users have proposed that building social connections improves the individual resilience of youth and that promoting intergenerational knowledge transmission enhances collective resilience by fortifying cultural connectedness.

Conceptions of resilience described by Inuit youth in previous studies are relational and ecological; resilience is centred on relationships and communication among friends and family, being on the land, forging strong communities, connecting to Inuit culture, and keeping busy [31,32]. Inuit demonstrate intergenerational resilience in a variety of ways, most prominently in their ability to persist through the sociopolitical challenges of Southern administration [28]. Over the past several decades, a concerted effort has been made by Inuit leaders to return to an era of self-reliance and self-determination [20,21]. Communities have organised politically to challenge restrictions on traditional lands and promote the teaching of the Inuktitut language in schools [33]. In 1999, the Government of Nunavut declared that future decision making would be based on a traditional system of knowledge and way of life called *Inuit Qaujimajatuqangit* (IQ). IQ is an Inuit worldview, with core principles of family and community bonds, collective decision-making, and respect for land and animals, effectively integrating cultural unity, practical knowledge, and resilience [Pederson et al., 2020; 3]. The importance and helpfulness of IQ was discussed extensively among youth leaders during I-SPARX game development.

Inuit also show immense resilience in their capacity to sustain life in the harsh, isolated Arctic, with limited access to resources. Principles of IQ help guide them through environmental challenges, encouraging perseverance and land-based sustenance [28]. Some Inuit youth participate in traditional cultural practices that include hunting, making clothes out of animal skin, and subsisting on a “country food” diet harvested from the land [33,34]. These cultural practices demonstrate Inuit’s resourcefulness and unique approach to life’s challenges in remote Northern communities.

Once again, little is known about how Inuit youth have fared psychologically throughout the pandemic. Based on extant mental health research with Inuit youth, it is possible that stressors associated with the virus may have exacerbated pre-existing mental health difficulties. On the other hand, Inuit culture provides many protective factors that promote adaptive coping and resilience, as demonstrated by Inuit perseverance through historical, environmental, and systemic challenges. Other elements of Inuit life, such as their ample experience with geographic isolation, may indeed make youth in Nunavut better equipped to deal with restrictions brought on by the pandemic.

## Inuit resilience and the I-SPARX project

The goal of the current study was to enhance the literature on Inuit youth resilience, which is of particular importance to the *I-SPARX* project. *I-SPARX* aims to test the usefulness of an Inuit specific e-intervention, *I-SPARX*, in aiding the mental health of Inuit youth in Nunavut. The adapted *I-SPARX* game was designed with the help of the project's "youth leaders", a group of Inuit adolescents from five communities in Nunavut. This project builds on a pilot study which tested the original Māori version of the game, *SPARX* [Smart, Positive, Active, Realistic, X-Factor thoughts; 35], in 11 Nunavummiut communities [4]. The pilot study found that *SPARX* increased resilience; it helped improve Inuit youth's emotional regulation, social interactions, and general coping skills [36]. The Inuit adapted version of the game is currently being tested on a larger scale; Inuit youth across Nunavut can sign up to play as study participants and give information about their pre- and post-intervention mental health. This trial of the research will help the *I-SPARX* team determine if the adapted game effectively fosters resilience and positive emotional health for Inuit youth in Northern Canada.

### Overview of the current project

The current study is a subset of *I-SPARX*. Its focus was to inform the *I-SPARX* team about the impact of the COVID-19 pandemic on Nunavut-based youth participants' involvement in the project, as well as their daily life and mental health. In addition, this study aims to identify specific factors that contribute to Inuit youth's wellness and resilience in the face of this pandemic, and to situate those factors in the context of IQ.

The current study was based on semi-structured interviews with nine Inuit youth who have acted as participants – as youth leaders and/or testers – in the *I-SPARX* project. It aimed to answer three overarching questions: (1) how has the pandemic affected the participation of youth leaders in the *I-SPARX* project? (2) how has the pandemic impacted the daily lives and mental health and wellness of Inuit youth and their communities? (3) what coping strategies have helped foster resilience in this context? This study was exploratory and qualitative in nature. No predictions or definitive independent and dependent variables were identified. Instead, common themes emerged from participant interviews and were elaborated upon according to the above research questions.

## Materials & methods

### Participants

Nine Inuit youth participated in semi-structured interviews via Zoom. Eight participants were *I-SPARX* youth leaders. These are a group of Inuit youth living in Nunavut who were recruited to work with the research team to co-direct the design and implementation of the game in the larger initiative and to enhance youth and community engagement. One participant did not identify as a youth leader, but rather as an *I-SPARX* participant. This individual was recruited by a coordinator in the community of Iqaluktuuttiaq to participate in the current testing trial of the *I-SPARX* game. Participant demographics are available in Table 1.

The Inuit youth who participated in this study were between the ages of 16 and 22 ( $M = 18$ ,  $SD = 1.94$ ). Three participants identified as female and six as male. They came from four communities in Nunavut: Cambridge Bay, Baker Lake, Pond Inlet, and Cape Dorset (Table 1). All participants were informed of the voluntary and confidential nature of the study before participating. Participants were compensated for their time at a rate of \$40 per hour, which, in Nunavut, is roughly equivalent to \$20 in Southern Canada in terms of spending power.

### Measures

Nine open-ended interview questions were prepared by the lead author and *I-SPARX* research team to administer individually to youth. Questions were designed to reflect the goals of the study – to provide insights into the life, wellness, culture, and coping of Inuit youth during the COVID-19 pandemic, as well as how the pandemic had affected youth's involvement in the *I-SPARX* study. The first two questions surrounded the topic of *I-SPARX*; youth were asked to recall their favourite *I-SPARX* memory and then describe how they thought the pandemic had affected their engagement

**Table 1.** Participant demographics.

Variable	Frequency	Mean, Standard Deviation
<b>Gender</b>		
Male	6	
Female	3	
<b>Age</b>		
16–17	6	M = 18, SD = 1.94
18–19	1	
20–21	1	
22	1	
<b>Community</b>		
Qamani'tuaq	2	
Iqaluktuuttiaq	3	
Kinngait	3	
Mittimatalik	1	

in the project. These questions served to remind participants that the current study is situated in the larger *I-SPARX* project. It also explored whether the pandemic has altered their relationship with the project and their perceived involvement as youth leaders. They were then asked about how their daily life, routines, relationships, and psychosocial wellbeing have changed since the beginning of the pandemic. Other questions aimed to understand how the virus impacted youth's communities; factors that helped with their coping and mental health during this time; and their thoughts on Nunavut's response to the virus. We also inquired about participants' engagement in traditional Inuit culture for the purpose of gaining insights into their application of IQ principles. The questions were purposefully constructed in a non-directive way to allow participants the freedom to express thoughts that were important and meaningful to them. Responses that were lacking in detail were followed up with general probes (e.g. "can you tell me more about that?"). If participants were unable to elaborate, specific prompts were given. The full interview script, questions, and prompts can be found in Appendix C.

### Procedure

The *I-SPARX* project, which encompasses the current study, has obtained ethical approval from the York University Research Ethics Board Committee (Research Certificate # 2018–089) as well a research licence from the Nunavut Research Institute (Appendix A).

Inuit youth leaders were contacted via the private *I-SPARX* Facebook page to inquire about their interest in participating in the study. Nine youth expressed interest and coordinated with the lead author to schedule a single interview. A community facilitator in Iqaluktuuttiaq was also apprised of this opportunity for youth to become involved in the sub-study, and one youth from that community was recruited to participate.

Over the course of January to March 2021, interviews were held using PHIPA-compliant Zoom, which is a secure, encrypted platform to host meetings virtually. Phone calls were also an option for those without internet access. The duration of each interview was between 25 and 60 minutes. Personal information, including the participant's name, age, gender, education status (high school, postsecondary, or other), languages spoken, and years spent as a youth leader (if applicable), were obtained (Appendix C). Participants were asked to respond to ten different questions regarding Inuit wellness and the pandemic (Appendix C). Interviews were recorded, anonymised, and

transcribed. Audio recordings and transcriptions were stored safely in a password-protected document on a password-protected USB stick. Following their interviews, participants were sent a message that thanked them for their time, provided payment, and contained a link to the *I-SPARX* website ([www.isparxnunavut.com](http://www.isparxnunavut.com)), which houses a list of resources to contact in times of emotional distress. The lead researcher's contact information was also given.

### Data analysis

Inductive thematic analysis was used to analyse transcriptions from the semi-structured interviews. Thematic analysis (TA) is a qualitative research method that involves labelling or coding meaningful topics or ideas that occur in the data and organising them into larger themes and concepts. Patterns that emerge repeatedly throughout the data are identified and merged into themes based on whether they capture relevant information related to the research questions [37]. TA uses intricate details provided by participants as a foundation for the development of overarching themes, making it a suitable technique for examining youth's individual experiences of the pandemic. Specifically, TA allows for the exploration of the unique individual perspectives of Inuit youth in Canada as experts in their own lives while also cultivating a broader understanding of the pathways that lead to Inuit coping and resilience.

The analysis for the current study used an inductive approach, meaning that themes emerged according to what was said by participants rather than a more deductive process of mapping data onto the researchers' preconceptions of participants' experiences. The steps outlined by 37 were followed. Accordingly, the lead researcher began by familiarising herself with the data through transcription and re-reading of transcripts. Initial codes were then generated, collated, and grouped into larger connective themes and subthemes. Data were coded and organised using the online computer software, Dedoose, a program that supports coding and analysis of qualitative data [38]. The final data were cross-checked by another lab member from the *I-SPARX* research group to ensure that the coding and organisation of themes were done in a consistent and unbiased manner. Extracted themes were shared with youth participants to obtain feedback on their perceived accuracy. Three extracted sub-themes that related to youth's pathways to resilience (*engagement in cultural hobbies and sport; connectedness to family and community members; and community cohesion and support*) were described using an IQ framework. These

themes were specifically chosen for analysis through the lens of IQ given their inherent relation to what IQ represents – Inuit culture, knowledge, and ways of life. The ways in which the IQ model was applied to the aforementioned themes were reviewed by an Indigenous *I-SPARX* researcher for accuracy.

## Results

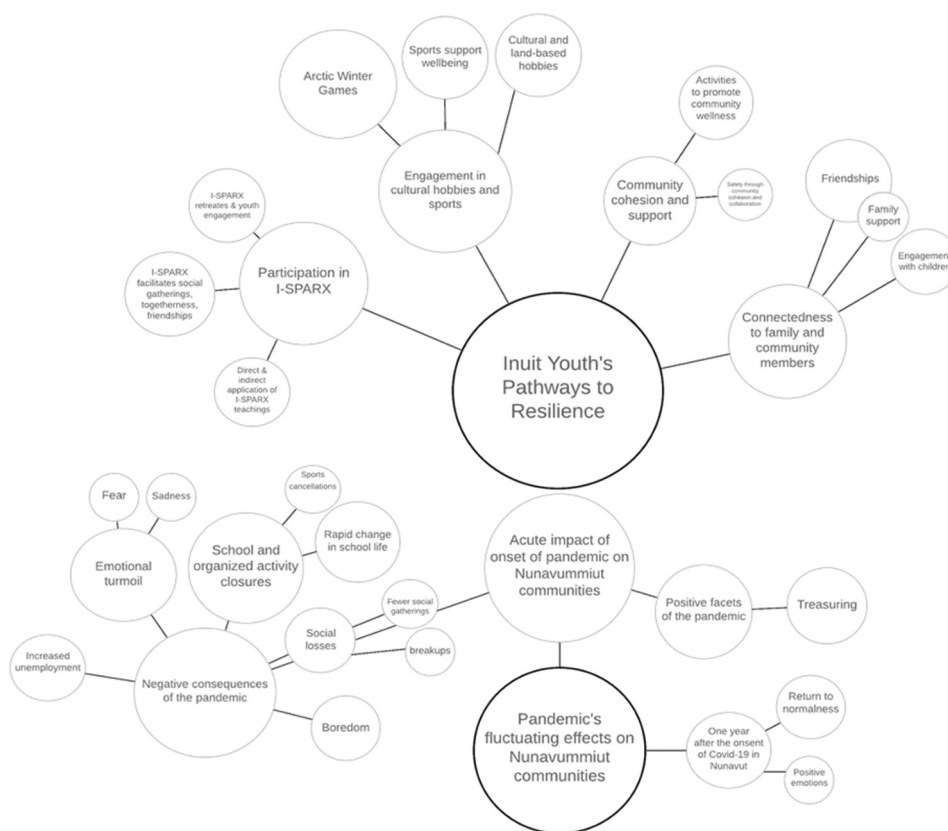
Among the nine youth recruited for this study (ages 16–22, see Table 1 for participant demographics), two central themes and seven sub-themes were identified (Figure 1).

**The COVID-19 pandemic's fluctuating effects on Nunavummiut communities.** Youth described the timeline of the COVID-19 pandemic in Nunavut as fluctuating between periods of normalcy and periods of severe restriction. Most youth's experiences of the pandemic were recounted in the following sequence. They first gave a distinct description of what life had been like following COVID-19's arrival in Canada and subsequently in Nunavut. This time was characterised as being restrictive and distressing on both a personal

and community level. Youth then described a second phase during the pandemic, which represented their feelings of personal and community wellness approximately one year after the onset of the virus in Canada. This period coincided with the time of the interviews. This second phase was marked by a return to normalcy and optimism. The two time periods are described along with their sub-themes and composite codes below. The chronological contrast is well captured by one youth here:

So, at the start of the pandemic, I was confused, you know? Like, how am I gonna survive now? Or how am I gonna ... deal with this? ... But right now, where I am right now, I just have to say that I'm happy. Like, I'm happy that I made it. I made it through all those hard times. -Youth 4

**Onset of the virus in Canada.** The majority of participants recounted the beginning of the pandemic in Canada, and the subsequent arrival of the virus in Nunavut, as having had significant implications for day-to-day life in their communities. Despite their communities having had no active COVID-19 cases at the time, heavy restrictions were enforced, including new social



**Figure 1.** A mind map illustrating the connections between themes and subthemes.

The frequency with which the themes occurred across interviews is represented by the size of the bubbles (i.e. a larger bubble indicates a higher incidence).

distancing guidelines, mandatory mask-wearing, limited travel, and organised activity closures. Youth emphasised the number of *negative consequences and stressors* that occurred during this period of the pandemic. *Positive reflections on the pandemic* were also discussed, although perhaps unsurprisingly touched upon to a lesser extent.

*Negative consequences of the pandemic.* This commonly endorsed theme was made up of five codes: *school and organised activity closures, emotional turmoil, boredom, unemployment, and social losses*. School and organised activity closures, including sports, had a profound effect on youth's wellbeing. Most schools transitioned to part-time classes. Sports and community activities were largely cancelled. An additional stressor at this time was increased rates of unemployment. Various youth expressed losing their jobs or having a family member become unemployed. The loss of jobs, activity cancellations, changes in school routines, and fewer social interactions were described as causing boredom and emotional turmoil, specifically sadness and fear:

We were really bored sometimes but it's just because [before COVID-19] we would always meet to play hockey everyday ... All the youth were bored without the activities that were open. Usually we would have a lot of activities that would open ... School got shut down for almost a year, too. That really sucked. Without all the sports and without school, it was pretty hard to keep up with the pandemic and all that. It's been kind of hard and a lot of youth here are sometimes ... sometimes [it's] hard for the youth here. Some kids were like really sad. - Youth 1

Before COVID I got my mindset out of smoking and just going down ... back into the pit. When COVID hit it took a toll on me and I went back into the drugs and just thinking a total different mindset. - Youth 5

Fear was often spoken about in the context of catching the virus, or the virus infiltrating the community:

The pandemic came ... I never left the house for two months, because I was scared, right? I didn't want to catch the virus. So yeah, I just stayed home ... took a lot of time for myself. - Youth 4

One youth described the fear that his community felt when a false positive case was detected:

I worry that you might have heard there was a false positive [case], when we were the first community to have gotten a case. That was a big scare for the whole community. - Youth 6

Youth's fear of the virus was exacerbated by social and structural inequities. Youth explained that issues such as lack of healthcare resources, overcrowded housing,

and rampant TB cases made their communities especially vulnerable to the effects of COVID-19. As one youth relates:

We were doing so good since the pandemic started, like [with] COVID in Nunavut, but it's like ... like we have like another one, it's TB, that's been here for a long time. - Youth 1

*Positive outcomes of the pandemic.* When youth were asked to talk about their emotions throughout the pandemic, almost all responses began with a description of ambivalence. Although the negative consequences of the pandemic dominated conversations, many youth were able to identify potentially positive outcomes. One code was derived from this subtheme: *treasuring*. *Treasuring* is related to Inuit culture. It refers to gratitude, or valuing a prized object or element of life [1]. Participants spoke of how they treasured the lack of cases in their communities, how parts of the pandemic were manageable, and how staying home helped some of them mend sibling and romantic relationships.

Well my relationships have changed very much [laughter]. I actually got back with my boyfriend so ... that changed ... And, I've gotten closer with my family and friends. Like, me and [my sibling] would never really go out but now we do everything [together]. - Youth 6

**One year following the onset of the virus.** This theme encompassed two codes: *return to normalcy* and *positive emotions*. At the time of the interviews, youth stated that their communities were returning to a state of fewer restrictions, including re-opening of some schools, sports, and leisure activities. Accordingly, at this time youth expressed greater positivity when thinking about the pandemic.

**Inuit youth's pathways to resilience.** Participants identified coping mechanisms and other protective factors that contributed to their wellbeing throughout the pandemic. Participation in *I-SPARX* appeared to foster adaptive coping and resilience among the youth. Other pathways to resilience included engagement in sports and cultural hobbies, social connectedness to family and community members, and strong community cohesion and support.

**Participation in the I-SPARX project.** It is important to note that this sample was recruited from youth leaders who were involved in a larger Nunavut-based youth wellness-focused study, the *I-SPARX* project [see 39]. Three codes were attached to this subtheme: *direct and indirect application of I-SPARX teachings; formation of friendships and togetherness; and I-SPARX retreats and youth engagement*.

*Direct and indirect application of I-SPARX teachings.* I-SPARX youth leaders have played the I-SPARX game and are familiar with its psychoeducational teachings and strategies, based on Cognitive Behavioural Therapy. Throughout the interviews, the youth leaders spoke of using I-SPARX game strategies in both direct and indirect contexts. One youth explained how he used the relaxation and breathing techniques taught in one of the game's levels to help with coping during the pandemic:

One thing that helped me a lot ... it's actually from I-SPARX, when I first played the game, one of the levels that's like ... take a deep breath and then just like, think. Have fresh air, go for a walk. That's what I did ... I-SPARX helped me a lot ... Good thing I – like, I'm glad that I was a part of it." - Youth 4

Another youth explained that he used I-SPARX to help manage tough times throughout the pandemic:

I went on I-SPARX, too, for a while on my computer. I still got in on my computer that we got ... I played it like a couple times. - Youth 1

The youth leaders also shared indirect applications of I-SPARX game teachings, which involved applying skills such as recognition and prioritisation of mental health, insights into adverse experiences, and restructuring unhelpful thoughts. In the following quote, one youth demonstrates the use of an I-SPARX strategy, restructuring thoughts to overcome catastrophic thinking:

At the end of the day it [negative feelings] helps you ... Like it gives ... you this kind of feeling that it's gonna be alright ... So, that's like, I just deal with that ... It's a bad day but not a bad life ... When I'm mad it's like the same thing. It's just one day. The next day I'm going to feel different. It's not gonna be everyday that it's gonna be like that. - Youth 4

*Formation of friendships and togetherness.* Across all interviews, the I-SPARX project was described as playing a role in facilitating social gatherings, creating new friendships, and fostering a sense of togetherness. Youth fondly described their favourite I-SPARX memories as being times when they met other youth leaders from across Nunavut at the youth retreats. These gatherings were among participants' favourite memories because of the team-building exercises, such as making igloos, sharing food, and playing the game together. Select youth also expressed gratitude to I-SPARX for allowing family members to partake in project activities, which added to their enjoyment and comfort.

*The importance of I-SPARX retreats for youth engagement.* The youth leaders were asked to describe whether they thought their engagement with I-SPARX had been different since the start of the pandemic. Each

youth leader expressed that their engagement had changed by virtue of the retreats being cancelled. It was clear that the I-SPARX youth retreats, and other in-person events, were critical for the leaders to feel involved in the project:

Mm, yeah. It affected my participation because ... I thought I was going to meet you guys again but everything [was] cancelled. I really wanted to meet you guys in person again ... We were probably going to meet up again down south as they said we would. But the pandemic hit, so we weren't able to do that. So it's pretty sad. - Youth 7

**Engagement in cultural hobbies and sports.** Three codes were attached to this sub-theme: *cultural and land-based activities; sports; and the Arctic Winter Games.*

*Cultural and land-based activities.* Participation in cultural and nature-centric activities were consistently mentioned as coping mechanisms throughout the pandemic. Youth cited activities such as hunting, going out on the land, Inuit art-making, beading, and sewing traditional clothes as being sources of tranquillity and joy:

Since the pandemic started I have been doing a lot of beading. I do beading necklaces. I've sewn my own sealskin mitts since the pandemic started ... What has helped me cope is ... my hobbies, most of my hobbies. Like, it just makes me feel calm. Even crocheting, it makes me feel calm and, I don't know, just passes the time doing all those things. - Youth 7

*Sports.* Participating in sports was endorsed by all youth except one as being critical to their daily enjoyment and wellbeing. Sports that were mentioned include Inuit games, hockey, basketball, wrestling, and volleyball. Although participants said that many fitness activities had been cancelled since the beginning of the pandemic, they still found ways to engage in the sports they loved. In a few cases, youth organised sports get-togethers despite the lockdown measures as a way to escape boredom, as explained by one youth:

When we were closed, school and everything, a lot of people were staying in, but me, I was all out and about with all my friends, even though we weren't supposed to, but anyways we did because it was so boring without our friends. So I just asked ... to hang out and my friends asked to hang out too ... You could hang out with [ten people] outside. That was how I got out of boredom and everything. - Youth 1

Sports were a lengthy topic of discussion for youth. Participants dedicated large parts of the interview to explaining how to play Inuit sports. In addition, many youth talked about their sports achievements as a source of cultural pride. Sports were commonly



endorsed as an activity that induces relaxation, promotes wellbeing, and decreases stress:

We are still allowed to play sports but it has to be a [maximum] amount of people. Just my family and I play sports because when I play sports, it takes everything off my mind. - Youth 3

In response to being asked to describe coping mechanisms, one youth answered:

It's the fact that I get to do sports like wrestling. That's the sport that changed my life around ... There's a negative way of putting yourself through stress and a positive way. And I always want to go to the positive side, which is stressing my muscles out by getting exercise. - Youth 5

*The Arctic Winter Games (AWG).* In addition to cultural activities and sports, participation in the Arctic Winter Games was another highly discussed topic. The Arctic Winter Games is a multi-sport, Indigenous cultural event where young Northern and Arctic athletes compete in winter sports. Youth in the interviews described it as the "North's Olympics". The AWG was cancelled in 2020 due to the pandemic. Indeed, many Inuit youth who were interviewed expressed disappointment and sadness upon its cancellation:

I was going to AWG, Arctic Winter Games, it's like the Olympics for the North. I was gonna go there last year but it got cancelled and when I heard that it got cancelled, I started crying because I was really looking forward to it. - Youth 3

Despite the cancellation of the 2020 AWG, the event was named as a sub-theme that contributed to youth's overall coping by virtue of how often it was talked about in the interviews and how frequently it was described as a source of enjoyment. The Games were also a notable source of collective pride for youth. Three participants who were interviewed took part in previous AWG competitions as athletes. They recounted many fond memories playing against other Arctic youth and even winning medals. One youth who was particularly talented in wrestling mentioned how he was proud to represent his community and other Inuit by excelling at his sport. Youth were proud to call themselves athletes and recount their AWG experiences with researchers.

**Community cohesion and support.** Two codes arose out of this sub-theme: *Safety through community cohesion and collaboration* and *activities to promote wellness*.

*Safety through community cohesion and collaboration.* Youth credited their safety against the virus to community efforts. Youth expressed gratitude to their

communities for doing their part to mitigate the pandemic:

I hear that down south there is a lot of deaths, so that's really fortunate [for] me because I still have my family members around me when they could have passed away from the pandemic, but they are still here. Because they're all doing their part in following the rules. And everyone in this community is doing their part in keeping COVID-19 out of [name of community] and it's helping all of us, like we are all helping each other, so ... COVID-19 won't hit [name of community]." - Youth 3

It was also evident through the interviews that youth's wellness is closely tied to that of their communities. When youth were asked to describe the effects of the pandemic on their personal wellbeing, they frequently situated their answers to reflect the feelings of the community rather than themselves. For example, when one youth was asked to describe his emotions throughout the pandemic, his response was "the whole community was scared" and explained that his personal wellbeing was fine on account of no one in his community having contracted the virus. Other youth frequently used inclusive terminology to answer questions such as "we" or "the youth here", rather than responding with "I" or "me" statements.

*Activities to promote wellness.* Several efforts were made in each community to promote members' health and wellbeing. Participants described new cultural programs and events that emerged during the pandemic, such as cultural activities for Elders, food distributions, land gatherings, and outdoor sports. These activities helped foster community connectedness during isolated periods of the pandemic:

[People] are still getting by because there's people ... like those food things. They have been really helpful for the people that lost their jobs, like we have a food bank here. They give out food. There is a hot lunch program. They give out, like, bags of breakfast for children who are in school. Those programs have been helpful for people in our community that can't really get by. - Youth 3

They have been having [programs] but there is limited people. And they have been having ... the men and the children meet at the KCC [Kitikmeot Chamber of Commerce] to make *kakivaks*. *Kakivaks* are used to like kill, uh no, to catch fish on the water. You just stab it [laughs]. Yeah, that's what they have been making. - Youth 4

**Connectedness to family and community members.** Three codes comprise the final sub-theme: *engagement with children*, *family support*, and *friendships*.

*Family support.* Youth described the importance of having strong family networks to support adaptation and coping during the pandemic. One participant shared:

[My family] helps me because they are good to me. Like, my mom and, especially my mom, she is always there to support me in every situation ... They're my family. They're just really loving and caring people. And without them, I think I would feel lonely or something like that. - Youth 3

While another stated:

Who would you really go to when you don't feel yourself? Like, you go to someone you know, right? And then, so, I go to my family. - Youth 5

*Friendships:* Maintaining meaningful social connections with friends in the community helped youth persevere. One youth highlighted the importance of being around his friends for motivational purposes:

I mean, there's times where I feel down but the fact that I get to [play sports], I get to be around my friends, and school. I get to be out more. That's what drives me to pursue what I wanna do. - Youth 5

During periods of pandemic restrictions, youth at times found themselves disobeying the rules to hang out with friends:

When school and everything [was closed], a lot of people were ... staying in, but me I was all out and about with all my friends, even though we weren't supposed to. But anyways we did because it was so boring without our friends. - Youth 1

*Engagement with children:* When participants were asked about coping mechanisms and activities that brought them happiness throughout the pandemic, three youth expressed their pleasure in helping out with programs for children. They were involved in various activities, including skating, sports, throat-singing lessons, and day care. One youth's response when asked about coping strategies was rooted in helping others:

[I like] helping out ... the young kids, like while they are skating around ... doing some programs for them, too. I don't know, it's just, [I] like to help out little kids for when they're not having fun. - Youth 9

Another youth talked about helping to start a program that sews traditional Inuit clothing to give to members in the community, specifically young kids who cannot afford warm outerwear. The role of caring for children

in the home was also discussed as a new and joyful experience. Specifically, two participants spoke about the life-changing experience of becoming mothers during the pandemic.

**Additional Findings: Suicide.** Two youth who participated in the interviews had experienced a recent personal loss due to suicide. The youth spoke about the profound distress this had on their lives and their communities. This theme was not included in the main analysis for two reasons: first, suicide is not pandemic-specific, but rather a common occurrence in Nunavut. It is unclear if these losses were a side effect from pandemic restrictions or simply the reality of life in their communities. In addition, suicide was discussed outside the context of the interview questions. This theme was still included under *additional findings* to highlight the urgency of mental health and suicidality in Nunavut, and to stress the importance of finding pathways to resilience.

## Discussion

The current study is a subset of the *I-SPARX* project; it aims to shed light on the pandemic's effect on Inuit youth leaders' participation in *I-SPARX*. More expansively, this study also queries the impact the pandemic has had on the daily lives and wellness of youth in Nunavut. We sought to examine whether the mental health of *I-SPARX* Inuit youth leaders has suffered throughout the COVID-19 pandemic and if specific cultural factors might have acted as protective mechanisms. The last aim of this study was to use the *Inuit Qaujimagatuqangit* (IQ) model as a framework for understanding the culturally specific factors that contribute to Inuit youth's adaptive coping and resilience. This study had no specific causal predictions by virtue of the exploratory nature of the research and the lack of literature on this topic with this population. Rather, this study was designed to capture youth's experiences, organise participant contributions in terms of common themes, and make meaning of these themes embedded in an Inuit cultural framework guided by IQ.

The first goal of this study was to determine if the pandemic had affected youth leaders' engagement in the *I-SPARX* project. Youth leaders described their involvement in the project as being tied to their attendance at the youth retreats; due to the cancellation of the Summer 2020 youth retreat, they expressed that their participation in the project had diminished. The majority of the leaders' comments and memories of *I-SPARX* were described in the context of the retreats. During our conversations, youth spoke frequently of their sadness and disappointment when the *I-SPARX* project was

unable to host a gathering in Nunavut in 2020. Youth's fondness towards *I-SPARX* seemed rooted in the cultural and social activities that took place at the retreats. Activities that incorporated team-building and cultural components were among their favourite memories. These findings shed light on the value of the *I-SPARX* retreats for engaging youth leaders. Furthermore, these findings reinforce the importance of taking an activity-based, collaborative, and culturally driven approach to research with Inuit youth in Nunavut.

Although youth leaders' perceived involvement in *I-SPARX* decreased during the pandemic, the lessons and skills they acquired by playing the game and participating in the project apparently endured. Youth leaders were exposed to various psychoeducational experiences throughout their involvement in the project, including playing the original *SPARX* game, providing input on the design of the Inuit-specific *I-SPARX* game, and participating in seminars on mental health literacy, research skills, and ethics at the youth retreats [4]. In their interviews, youth leaders alluded to the use of skills acquired in their *I-SPARX*-related activities to help them manage during the pandemic. Youth showed a sophisticated understanding of mental health; several participants explained that they sought out ways to prioritise their mental wellbeing during difficult times, which included playing *I-SPARX*. Furthermore, many youth exhibited keen insights into adverse pandemic experiences, as well as an ability to recognise negative thinking patterns and propose solutions. They referred to *I-SPARX* as a tool that promotes mental health coping and resilience. These findings align with the results of a previous pilot study that investigated *SPARX*'s utility in enhancing resilience [36]. That pilot study found that Inuit youth who played the original Māori version of the game reported increased resilience, emotional regulation, and emotional intelligence.

The second goal of this study was to report on how the pandemic had more generally impacted the daily lives and wellbeing of Inuit youth leaders in Nunavummiut communities. Specifically, this study queried whether the mental health of Inuit youth leaders had suffered throughout the COVID-19 pandemic, and whether and how this was mitigated by specific cultural factors that served as protective mechanisms. In the interviews, participants cited that their communities enforced heavy pandemic restrictions since the onset of the virus in Canada, despite their communities having had no confirmed cases of COVID-19. Although each youth brought a unique individual perspective to how the pandemic had impacted them, youth unanimously expressed that community restrictions were

related to negative consequences and poorer wellbeing. Youth conveyed the closure of schools, cancellation of community activities, particularly sports, and fewer social outings and employment opportunities as being prominent stressors. As a result, many youth reported experiencing boredom and emotional distress. Youth emphasised the pervasiveness of sadness and fear for their own health and that of their communities. Notably, social and economic challenges that are unique to Northern communities under colonialism were mentioned as being an acute source of fear as well. Youth described issues such as overcrowded housing, high rates of TB, and a lack of health resources as threatening Inuit's wellbeing during the pandemic.

Previous literature examining mental health amid the pandemic indicates that adolescents and young adults are currently among the most vulnerable to psychological distress [9]. The potential psychosocial effects of the pandemic are particularly concerning for Inuit and other Indigenous Peoples in Canada, for whom the impacts of colonialism, with its cultural annihilation and intergenerational trauma, have, all too often, been a death sentence. These findings highlight the complex contexts of distress in Northern communities, reiterating how mental health challenges for Inuit youth have numerous historical, systemic, and structural roots. Inuit youth's psychological wellbeing must be supported during this time, and a commitment made to addressing continuing systemic inequities and injustices.

Despite the distressing fallout of pandemic-related restrictions, participants shared multiple pathways to resilience. The last aim of this study was to acquire a culturally specific understanding of Inuit youth leaders' coping mechanisms and resilience strategies through the lens of IQ. IQ, which encompasses traditional knowledge and wisdom around childrearing, connecting with nature, thriving in a Northern climate, and building a harmonious family and community life [1], is an organising framework that youth leaders have previously chosen to integrate into the larger *I-SPARX* initiative. Thus, youth's coping strategies are analysed and described in the context of IQ.

Throughout the interviews, it became evident that participants' wellbeing was intrinsically tied to their involvement in cultural, community-based activities. Engaging in land-based and cultural hobbies, such as hunting, outdoor drum dancing, sports, and Inuit games were frequently described as activities that promoted wellness during the pandemic. Inuit culture, expressed through IQ, is uniquely designed for an Arctic environment. Inuit thrive with regular gatherings and ample time spent in nature, congregating on the

land to hunt and perform cultural activities like dancing [1]. Sports and Inuit games were another important aspect of youth's wellness. Games and physical fitness are emphasised in IQ, providing spiritual and mental exercise and fostering a happy spirit, strong friendships, and supportive attitudes [1].

Interviews with youth clearly revealed a collective spirit, with their wellbeing intrinsically tied to that of their families and community members. Three IQ principles – *Pijitsirniq*, *Inuuqatigiitsiarniq*, and *Piliriqatigiinni/ Ikajuqtigiinni* – situate the family and community at the centre of Inuit life. *Pijitsirniq*, roughly translated, denotes willingness to serve and provide for others [1]; youth demonstrated this principle through their commitment to helping children adjust to pandemic life. Interestingly, children's wellbeing was a primary concern for participants; many youth expressed that they joined programs to teach or take care of young kids during the pandemic. *Pijitsirniq* is also evident through youth's community-focused comments and through the use of inclusive language such as “we” or “the youth here” rather than citing their individual perspectives. *Inuuqatigiitsiarniq* – respecting others and valuing relationships – is another IQ principle that emphasises the role of family and community in fostering resilience [1]. The youth expressed this in their reverence for family and community members. Youth credited the support from their families, friends, and communities for helping them manage throughout hard pandemic times. Finally, *Piliriqatigiinni* or *Ikajuqtigiinni* approximates to working together for a common cause and looking out for each other. This aspect of IQ appeared through the youth's description of community cohesion and collaboration. Youth explained that everyone in the community banded together to protect themselves against COVID-19.

The above findings reveal intricate pathways to resilience exhibited by Inuit youth in the age of a global pandemic. The implications of these results are discussed below, after we identify and describe the study's limitations.

## Limitations

This study is one of the first to look at the impact of the COVID-19 pandemic on a select group of Inuit youth's daily lives and wellbeing. The study derives much strength from its embeddedness in the *I-SPARX* initiative, a youth and community-driven project, and its in-depth, semi-structured approach to qualitative interviews. However, there were several limitations.

First, this research is cross-sectional. It only captures life in Nunavut during a specific time in the pandemic, which has implications for the findings' external

validity. The pandemic was, and at press time continues to be, an unpredictable and ever-changing phenomenon; youth's thoughts and opinions during the interviews may represent neither their thoughts and feelings since our conversations, nor their future perceptions as COVID-19 continues to reshape societies.

Second, the results are not applicable to all Inuit youth in Nunavut. The opinions and perspectives provided by these nine participants may not reflect the experiences of other youth in Nunavut, for several reasons. First, the sample size was relatively small. Although this is a preliminary study, future research should aim to include perspectives from a wider variety of Inuit youth. In addition, the adolescents who were interviewed were *I-SPARX* youth leaders and participants. These youth may possess unique characteristics unrepresentative of a “typical” youth from Nunavut, further limiting the study's generalisability. This study also sampled from only four of the 25 communities in Nunavut. Future research should aim to interview youth from more communities to enhance external validity.

The fact that interviews had to be conducted virtually due to travel restrictions is another limiting factor of this study. Virtual interviews in Northern Canada, with their inherent technical difficulties (all internet service in Nunavut is via satellite connection, which is sensitive to weather fluctuations), made it difficult for some youth to participate with ease. Another potential accessibility issue is the design of the interview questions. It is possible the wording of these questions may have been too advanced. Future research should consult with Inuit youth on the wording and structure of interviews to ensure that all youth's opinions, and the myriad aspects of community culture they express, are well represented.

## Implications & future directions

Understanding how Inuit youth leaders and participants have been affected by COVID-19 and identifying their pathways to resilience is informative for the *I-SPARX* project. First, these findings emphasise the importance of in-person retreats for maintaining youth engagement. Moving forward, the *I-SPARX* team should prioritise retreats and other non-virtual team-building activities to keep the youth interested in participating. Overall, this study sheds light on how *I-SPARX* youth leaders have managed throughout the pandemic, as well as factors that contribute to their wellness, giving the *I-SPARX* team an improved understanding of how to support our leaders moving forward.

The findings from this study may also be useful for cluing the *I-SPARX* research team into the wellbeing of other

*I-SPARX* participants. The team is currently conducting a testing trial of the game; Inuit youth across Nunavut have the chance to play *I-SPARX*, give feedback, and get paid for their time. The findings of this study will enable *I-SPARX* researchers to better interpret the results from the youth who participated in the test trial. It may provide context to allow researchers to better understand trends and patterns that appear in the data.

In addition to this study's implications for *I-SPARX*, we hope the current study will help direct future interventions more generally, by furthering the literature on Inuit youth's coping and resilience. Future research should build on this groundwork of information about Inuit wellness and the pandemic. Future studies, however, should derive a larger sample size that captures a more diverse range of Inuit youth.

Future studies should further delve into the pandemic's impact on suicidality in Inuit communities. Although suicide was mentioned as a stressor by two youth participants, their discussions took place outside the formal interview context and thus were not included in our main analysis. Youth suicide is a pressing issue in Inuit communities; it is of utmost importance to understand how pandemic restrictions have affected suicidality, and to identify factors that support resilient functioning in this context.

To provide a more nuanced understanding of risk and resilience factors during the pandemic, it will be important to incorporate culturally specific frameworks [e.g. *Inuit Qaujimajatuqangit*; 1] into future mental health research, as well as other emerging suicide and mental health frameworks, such as *meaning in life and demoralisation* [40]. A multidisciplinary approach to mental health and suicide during the pandemic may be useful in understanding the complex nature of risk and resilience in vulnerable communities [40].

Additional research should investigate aspects that nurture cultural and community connection among Inuit youth, given that participants in this study frequently mentioned this as a pathway to resilience. Furthermore, research should consider examining ways in which this kind of connection can be created in a technological "Zoom" age. Finally, studies should invest in examining the direct impact of poor social and structural systems on the mental health of Inuit youth, in order to better advocate for long overdue policy changes.

## Conclusion

This study examined the impact of COVID-19 restrictions on a select group of Inuit youth involved in a larger project focused on mental wellness. This

research further sheds light on some of the unique challenges faced by Inuit youth in Nunavut, identifying several distinct paths towards resilience from the perspective of youth themselves, most notably the significance of community connectedness. The study highlights the importance of cultural and community factors in how a specific population responds to a global pandemic.

## Acknowledgement

We acknowledge the work of all our team members and gratefully recognize the contributions of the Inuit youth leaders in Nunavut for sharing their knowledge and guiding our work together.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This work was supported by Canadian Institutes for Health Research [152865].

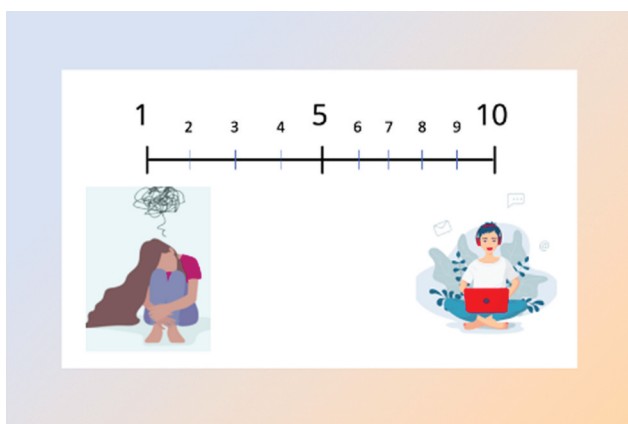
## References

- [1] Karetak J, Tester F, Tagalik S. Inuit Qaujimajatuqangit: What Inuit have always known to be true. Halifax: Fernwood Publishing; 2017.
- [2] Pedersen C, Otokiak M, Koonoo I, et al. SciQ: an invitation and recommendations to combine science and Inuit Qaujimajatuqangit for meaningful engagement of Inuit communities in research. *Arctic Science*. 2002;6(3):326–339. [10.1139/as-2020-0015](https://doi.org/10.1139/as-2020-0015)
- [3] Williamson LJ. Inuit gender parity and why it was not accepted in the Nunavut legislature. *Études/Inuit/Studies*. 2006;30(1):51–68. <https://doi.org/gn3k>.
- [4] Bohr Y, Litwin L, Flett G, et al. Accessed 2 September 2021. Making SPARX fly in Nunavut: pilot testing an innovative computer-based intervention for reducing youth depression as a preamble to the development of a culturally specific, community led prevention program;2016. (Research report No. 2016-1 prepared for the Department of Health, Government of Nunavut) [www.isparxnunavut.com](http://www.isparxnunavut.com)
- [5] Douglas K, Katikireddi S, Taulbut M, et al. Mitigating the wider health effects of Covid-19 pandemic response. *BMJ*. 2020;369:m1557–m1557.
- [6] CDC. Coronavirus Disease 2019 (COVID-19). Centers for Disease Control and Prevention; 2020 February 11. [Accessed 2 September 2021]. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/parental-resource-kit/adolescence.html>
- [7] Gao J, Zheng P, Jia Y, et al. Mental health problems and social media exposure during COVID-19 outbreak. *PLOS ONE*. 2020;15(4):e0231924.

- [8] CAMH. (2020). *Pandemic impacting the mental health of young people in Ontario*. [cited 2020 Nov 23]. Available from: <https://www.camh.ca/en/camh-news-and-stories/pandemic-impacting-the-mental-health-of-young-people-in-ontario>
- [9] Xiong J, Lipsitz O, Nasri F, et al. Impact of COVID-19 pandemic on mental health in the general population: a systematic review. *J Affect Disord*. 2020;277:55–64.
- [10] Arriagada P, Hahmann T, O'Donnell V. Indigenous people and mental health during the COVID-19 pandemic. Ottawa: Statistics Canada; 2020. [Accessed 2 September 2021]. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00035-eng.htm>
- [11] Follent D, Paulson C, Orcher P, et al. The indirect impacts of COVID-19 on aboriginal communities across NSW. *Med J Aust*. 2021;214(5):199–200. doi:10.5694/mja2.50948.
- [12] Usher K, Marriott R, Smallwood R, et al. COVID-19 and social restrictions: the potential mental health impact of social distancing and isolation for young indigenous Australians. *Australas Psychiatry*. 2020;28(5):599–600.
- [13] Kumar M, Tjepkema M. Suicide among First Nations people, Métis and Inuit (2011-2016): Findings from the 2011 Canadian Census Health and Environment Cohort (CanCHEC); 2019. [Accessed 2 September 2021]. <https://www150.statcan.gc.ca/n1/en/pub/99-011-x/99-011-x2019001-eng.pdf?st=supDrlQa>
- [14] Bartlett C, Marshall M, Marshall A. Two-eyed seeing and other lessons learned within a co-learning journey of bringing together Indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies and Sciences*. 2012;2(4):331–340.
- [15] Driscoll K. Nunavut enacts strictest travel regulations in Canada. APTN News; 2020 March 23. [Accessed 1 February 2022]. <https://www.aptnnews.ca/national-news/nunavut-enacts-strictest-travel-regulations-in-canada>
- [16] CBC News. Nunavut confirms 8 new COVID-19 cases Monday, territory-wide restriction period to start Wednesday. CBC News; 2020 November 16. [Accessed 1 February 2022]. <https://www.cbc.ca/news/canada/north/nunavut-premier-give-update-on-covid-19-outbreak-1.5803373>
- [17] Dawson T. The benefits of isolation. *National Post*; 2020 April 9. [Accessed 1 February 2022]. <https://nationalpost.com/news/the-benefits-of-isolation-nunavut-doesnt-have-a-single-confirmed-case-of-covid-19/wcm/9d946af0-03f9-4d91-8f4b-76ead89a62c3>
- [18] GN Department of Executive and Intergovernmental Affairs; 2020. [Accessed 1 February 2022]. <https://www.gov.nu.ca/news/350https://www.gov.nu.ca/news/350https://www.gov.nu.ca/news/350https://www.gov.nu.ca/news/350>. Latest news. <https://www.gov.nu.ca/news/350>
- [19] Healey G. Inuit parent perspectives on sexual health communication with adolescent children in Nunavut: “It’s kinda hard for me to try to find the words. *Int J Circumpolar Health*. 2014;73(1):25070.
- [20] Kral MJ. “The weight on our shoulders is too much, and we are falling” Suicide among Inuit male youth in Nunavut, Canada. *Med Anthropol Q*. 2013;27(1):63–83.
- [21] Pauktuutit Inuit Women of Canada. *Pavva: National Inuit sexual health strategy*; 2017. [Accessed 2 September 2021]. <https://bit.ly/3rk0iE6>
- [22] Hillier S. Indigenous nationhood in the age of COVID-19: reflection on the evolution of sovereignty in settler-colonial states. *Scholars’ Hub @ Home, Toronto (ON Canada)*; 2020. October 9. [Accessed 2 September 2021]. <https://www.youtube.com/watch?v=r5-OLctipHw>
- [23] Lapointe-Shaw L, Rader B, Astley CM, et al. Web and phone-based COVID-19 syndromic surveillance in Canada: a cross-sectional study. *Plos One*. 2020;15(10):e0239886.
- [24] Leblanc-Laurendeau O. 2020. [YMB1] *food insecurity in northern Canada: an overview*. Library of parliament. Food Insecurity in Northern Canada: An Overview (parl.ca)
- [25] Jetty R, First Nations, Inuit and Métis Health Committee, Tuberculosis among First Nations, Inuit and Métis children and youth in Canada: beyond medical management. *Canadian Paediatric Society*. 2020;26(2):e78–e81.
- [26] Hick S. The enduring plague: how tuberculosis in Canadian Indigenous communities is emblematic of a greater failure in healthcare equality. *J Epidemiol Glob Health*. 2019;1. DOI:10.2991/jegh.k.190314.002.
- [27] Sawchuk J. Social conditions of Indigenous peoples in Canada. *The Canadian Encyclopedia*; 2011. October 31. [Accessed 2 September 2021]. <https://www.thecanadianencyclopedia.ca/en/article/native-people-social-conditions>
- [28] Kirmayer LJ, Dandeneau S, Marshall E, et al. Rethinking resilience from Indigenous perspectives. *Can J Psychiatry*. 2011;56(2):84–91.
- [29] Korhonen M. Resilience: overcoming challenges and moving on positively. Ottawa: National Aboriginal Health Organization; 2007. [Accessed 2 September 2021]. [https://ruor.uottawa.ca/bitstream/10393/30325/1/2007\\_Inuit\\_Resilience\\_Book.pdf](https://ruor.uottawa.ca/bitstream/10393/30325/1/2007_Inuit_Resilience_Book.pdf)
- [30] Ungar M. Resilience, trauma, context, and culture. *Trauma, Violence, & Abuse*. 2013;14(3):255–266.
- [31] Kral MJ, Salusky I, Inuksuk P, et al. Tunngajuq: stress and resilience among Inuit youth in Nunavut, Canada. *Transcult Psychiatry*. 2014;51(5):673–692.
- [32] MacDonald JP, Willox AC, Ford JD, et al., IMHACC Team, Rigolet Inuit Community Government, Protective factors for mental health and well-being in a changing climate: perspectives from Inuit youth in Nunatsiavut, Labrador. *Soc sci med*. 2015;141:133–141.
- [33] Freeman MA. Inuit. *The Canadian Encyclopedia*; 2010. June 8. [Accessed 2 September 2021]. <https://www.thecanadianencyclopedia.ca/en/article/inuit>
- [34] Greig M. The Inuit way: a guide to Inuit culture. Ottawa: Pauktuutit Inuit Women of Canada; 2006. [Accessed 2 September 2022]. [https://www.relations-inuit.chaire.ulaval.ca/sites/relations-inuit.chaire.ulaval.ca/files/InuitWay\\_e.pdf](https://www.relations-inuit.chaire.ulaval.ca/sites/relations-inuit.chaire.ulaval.ca/files/InuitWay_e.pdf)
- [35] Shepherd M, Merry S, Lambie I, et al. Indigenous adolescents’ perception of an eMental Health Program (SPARX): exploratory qualitative assessment. *JMIR Serious Games*. 2018;6(3):e8752.
- [36] Litwin LH, (2020). *Exploring resilience and mental health among Canadian Inuit youth: Understanding wellness and piloting a prevention program*. [Doctoral dissertation, York University]. Yorkspace Institutional Repository.
- [37] Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101. <https://doi:10.1191/1478088706qp0630a>.

- [38] Dedoose. *Software for managing, analyzing, and presenting qualitative and mixed method research data* (Version 8.0.35). SocioCultural Research Consultants; 2018. [Accessed September 2 2021]. [www.dedoose.com](http://www.dedoose.com)
- [39] Bohr Y, Armour L, Abdelmaseh M, et al. 2021. Making I-SPARX Fly in Nunavut. Interim research report to the Canadian Institutes of Health Research.
- [40] Costanza A, Baertschi M, Richard-Lepouriel H, et al. The presence and the search constructs of meaning in life in suicidal patients attending a psychiatric emergency department. *Front Psychiatry*. 2020;11:327.

## Appendix A – Nunavut Research Institute Certificate



## Appendix B – Consent Form & Consent Video

- a. Informed consent form

### INFORMED CONSENT FORM

Date: April 2020

Study Name: Making I- SPARX fly in Nunavut

Principal Investigator: X

Co-Investigators: X

Sponsor: X

**PURPOSE OF THE RESEARCH:** The goal of this project is to develop and evaluate an Inuit-specific adaptation of the computerised SPARX (Smart, Positive, Active, Realistic, X-factor thoughts) intervention program for youth. 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 Phase 1 of the project, we visited 5 communities across Nunavut and gathered information about how we could make the SPARX program more relevant for Inuit youth. The Pinnguaq organisation has taken this feedback and has generated a modified version of the SPARX game: I-SPARX. We are now in Phase 2 of the project, where Inuit youth in several communities 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. Play 7 levels of the new I-SPARX game over the course of about 3 weeks. Each level should take 20–30 minutes to complete.

B. Provide feedback on your thoughts and mood in a questionnaire that has been designed with members of your community to assess wellness, resilience and general mental health. The questionnaire should take 10–15 minutes to complete.

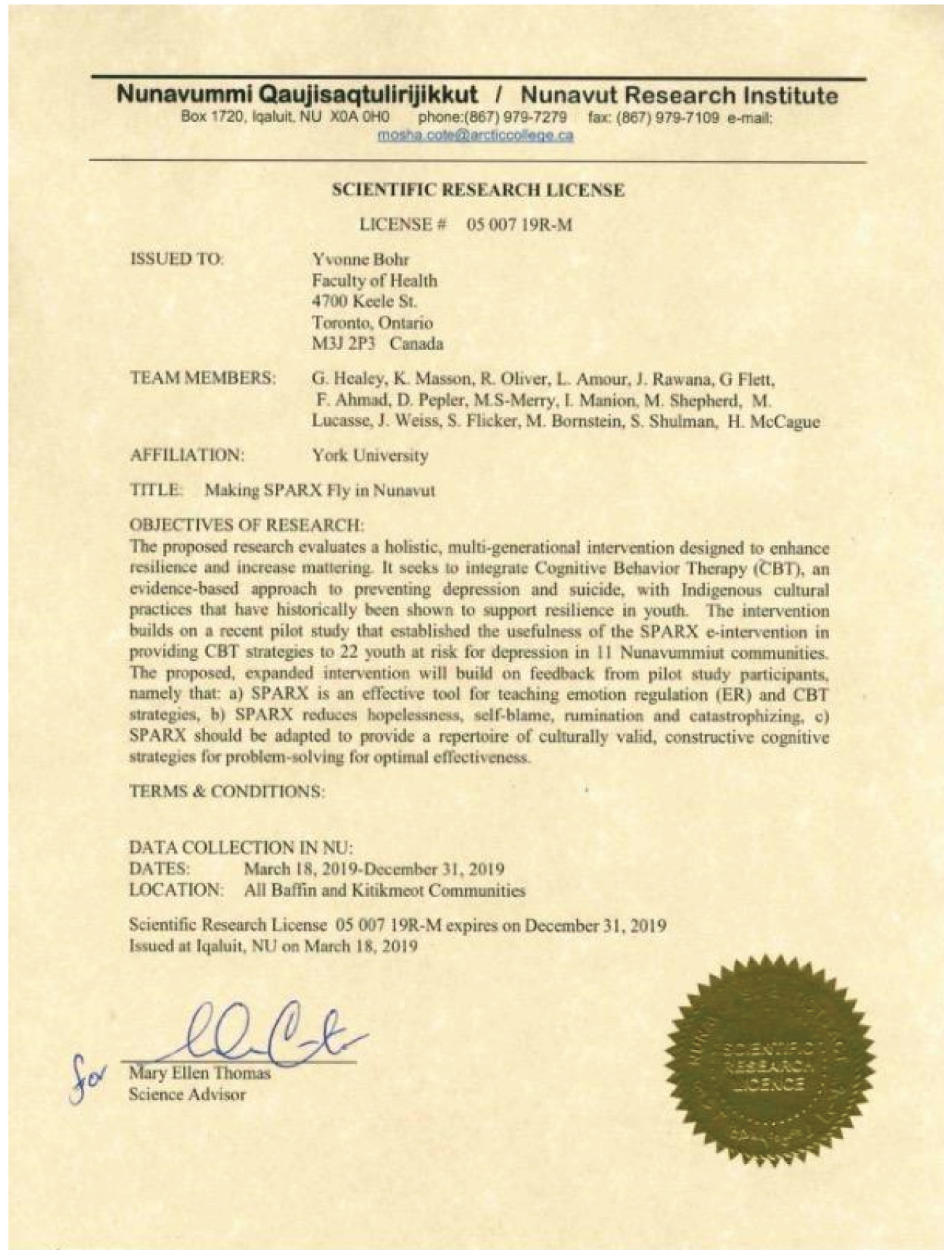
C. If you are interested, you may be asked to provide feedback on your thoughts and moods through interview and/or focus groups. Interviews/focus groups may take approximately an hour to complete.

D. If you are interested, you may be asked to provide feedback on your experience of the process of being involved in this project through interviews and/or focus groups. Interviews/focus groups may take approximately an hour to complete.

E. If you are interested, you may participate in workshops led by the I-SPARX research team. Workshops will vary in length.

**RISKS AND DISCOMFORTS:** Some of the questions regarding mental health 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. 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 I-SPARX retreat, the community facilitator will be available to answer any questions you may have. We have also gathered information about resources in your community that you can access for help and support. This information will be shared with you by your community facilitator. You can also stop participating in the study at any point because participation is voluntary.

**BENEFITS OF THE RESEARCH AND BENEFITS TO YOU:** The goal of this study is to develop a culturally appropriate wellness 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 evaluate 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 organisation 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 parts that 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 organisation 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: that means that 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 only for the purpose of the evaluation of the I-SPARX program.

**USES OF RESEARCH DATA:** The data collected for this project belong to the individual communities in which these data were collected. With community representatives' permission, the information will be presented to the communities, and also to scientific meetings, and published in scientific journals (always without any names attached). Some of the information may be written up in research reports including PhD dissertations and/or Masters' theses. Data will be used as long as the community deems it useful.

**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. You can also contact XXX.

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 XXX or XXX.

**Legal Rights and Signatures (for youth under 16):**

I \_\_\_\_\_, consent for my child 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 child's participation. I understand that steps will be undertaken to ensure that the information collected will remain anonymous and confidential. I also understand that, if I wish to withdraw my child from the study or if they wish to withdraw themselves, they 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  
(Parent/Guardian)  
Signature Date  
(Participant)  
Signature Date  
(Witness)

**Audiotape Consent (if participating in Interviews/Focus Groups)**

I \_\_\_\_\_, give my consent for my child to be audiotaped during discussion about the I-SPARX program. I understand that the purpose of the audio-recording is strictly for this study, and to benefit the evaluation of the current I-SPARX program. My questions have been answered to my satisfaction and I agree for my child to participate in this study. I understand that my child 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):

research  
Signature Date  
(Parent/Guardian)  
Signature Date  
(Participant)

**Re-Contact for Future Research Consent**

Please check the appropriate box below and print your name:

I \_\_\_\_\_, give my consent for my child to be contacted in the future for the purpose of (please check to indicate consent):

follow-up to the I-SPARX research study.  
**Legal Rights and Signatures (for youth over 16):**

I \_\_\_\_\_, consent to participate in the research project "*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 and confidential. 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 (if participating in Interviews/Focus Groups)**

I \_\_\_\_\_, give my consent to be audiotaped during discussion about the I-SPARX program. I understand that the purpose of the audio-recording is strictly for this study, and to benefit the evaluation of the current I-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):

research  
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):  
c follow-up to the I-SPARX research study.**

b) Consent Video

The I-SPARX team created a 4 minute consent video that explains the main points of the consent form (i.e. purpose of the project, benefits & risks, confidentiality, etc.) in an animated, youth friendly manner. The consent video can be found on I-SPARX's private youtube account.

## Appendix C – Interview Questions & Script for the Youth

*Hello [x]. Thank you so much for taking the time to meet with me today. My name is Alaina, and I joined the I-SPARX team this summer as a research assistant and thesis student.*

*[For youth leaders only:] I understand that you have been working on the I-SPARX project as a youth leader. How long have you been a youth leader?*

*The I-SPARX team is so appreciative of all the amazing work and ideas that you have contributed to make the game what it is now.*

*As I explained in my Facebook message, I am conducting a study which will look at the impact of COVID-19 on how the I-SPARX project has progressed, as well as the daily life and wellness of Inuit youth in Nunavut in general during this time. It's important to the I-SPARX team that we gather information on how Inuit youth have been managing throughout the pandemic. It will hopefully help us better understand how you, as our I-SPARX leaders have been coping, and also some aspects of the mental wellness of the I-SPARX participants when they start playing the game.*

*In today's meeting you will participate in a 20–25 minute interview and answer ten open ended questions on how COVID-19 has affected you and your community.*

*It's important to note that the interview will be recorded. The information that is discussed will be analysed and written about in a York University thesis paper. To maintain your confidentiality, your name will not appear in any report or publication of the research. If you wish to stop the interview, you can do so at any time.*

*And lastly, to show our appreciation for your contribution to this study, you will be paid 40.00 USD for your time.*

*Do you have any questions or concerns?*

*To start off, I'm going to gather some background information from you:*

### **Demographic information:**

- What community do you live in?
- How old are you?
- Are you in school? If so, what grade?
- What gender do you identify as?
- What languages do you speak?
- If applicable: How long have you been involved with the I-SPARX project, and in what way have you been involved?

### **Interview Questions**

**Ice Breaker question:** What is your favourite memory of I-SPARX?

- (1) **Would you say the pandemic has affected your participation in I-SPARX? If so, in what way?**
- (2) **What is new or different in your life since the start of the pandemic – Has anything changed at home, at school, or in other parts of your life?**

Prompts (to be used only if topics don't emerge spontaneously):

- What are your favourite **hobbies**? Do you still keep up with them since the start of COVID-19?
  - How has **school** been during pandemic?
  - Have your relationships changed in any way?
    - How have your **friends, family, and the people you care about** managed throughout this time?
    - Has COVID-19 impacted how often you **talk** with **elders** or other community members?
  - What are the kinds of things that you do to **engage with your culture** (i.e. traditional hobbies, ceremonial participation, conversing with elders)? Has the pandemic affected this at all?
- (3) **How would you say you have managed overall throughout the pandemic?** On a scale of 1 to 10 how would you say you've managed over the past couple of months? Ten would be that you have managed really well and one would be that it has been really tough. Five is in the middle which indicates that sometimes you have felt a mixture of good and bad.
  - (4) **Can you describe the emotions you have felt throughout the pandemic?**
    - Follow up question: Can you tell me about the times when you felt [insert emotion]?
  - (5) **Is how you felt at the start of the pandemic different from how you feel now? If so, how is it different?**

(6) **What has helped you cope throughout the pandemic? Why do you think these strategies have helped?**

- Examples could be certain activities, friends, or aspects of your community?

(7) **How has the pandemic affected your community?**

• **How is the community engagement different?**

- Have new programs started?

- Has there been a lot of community support? Can you explain what this support looks like?

(8) **Are you involved with traditional Inuit practices (eg. Lighting the quilik, going out on the land, Inuit Qaujimagatuqangit, ect.)**

(9) **Compared to the rest of Canada, Nunavut has done a good job in keeping COVID-19 cases low across the territory. What are your thoughts on Nunavut's response to COVID-19?**

(10) **Do you have any stories about how the pandemic has affected you or your community. Is there anything we should have asked you that we didn't?**

*Those are all of my questions for today! Do you have any questions for us?*

*That concludes the interview. Thank you so much for setting aside your time today and for providing such thoughtful answers. This research will be a valuable contribution to the I-SPARX project. If you think of any questions later on, you can send me a private message through the I-SPARX Facebook page and I will get back to you as soon as possible.*

*I will be in touch shortly to let you know how and when you will be paid for your participation today.*

*Thank you again [X] for all that you do for the I-SPARX project. I-SPARX wouldn't be possible if it weren't for the help of you and the other youth leaders.*

*Take care.*