This is the peer reviewed version of the following article: [Frayme: Building the structure to support the international spread of integrated youth services. Early Intervention in Psychiatry 14, 4 p495-502 (2020)], which has been published in final form at DOI:10.1111/eip.12927

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## Abstract

Aim: Frayme is a Canadian-based international network designed to accelerate the adoption and scaling up of integrated youth services (IYS). This is done through the synthesis of evidence from a variety of sources and a commitment to integrated knowledge mobilization (KMb) to inform research policy and practice. Frayme is utilizing innovative approaches to stakeholder engagement (youth, families, policy makers, funders, researchers and practitioners) and KMb in order to co-design system change. The purpose of this paper describes the overall Frayme strategy and presents findings from a participatory needs assessment implemented to inform policy-related priorities.

**Methods:** The Frayme leadership team facilitated a participatory needs assessment with major stakeholder groups that applied a modified problem-solving activity. The needs assessment was on a designed to support diverse stakeholder perspectives on ways to improve knowledge mobilization of IYS. Qualitative data were analyzed using a thematic analysis.

**Results:** The four themes identified through the needs assessment were: 1) Traditional scientific practices, 2) Organizational obstacles, 3) Change-aversion, and 4) Pre-established stakeholder hierarchies.

**Conclusions:** Through the recognition of these challenges, Frayme has developed a set of major objectives to inform projects, opportunities for knowledge sharing, implementation of evidence

and scaling up of efforts. The Frayme integrated KMb model represents a unique applied example of an evidence-informed approach to practice collaboration in KMb to promote system change. The findings from this research also contribute to the expanding knowledge base with regard to complex evaluation and system transformation.

**Keywords**: Integrated youth services; Knowledge mobilization; Needs assessment; Complex evaluation; Youth mental health

### Introduction

Adolescence is a critical stage of development that is characterized by fundamental changes in brain development, shifting developmental contexts, and increasing capacity for independence (Lerner, 2018). This period has a fundamental influence on potential success over the lifespan (Patton et al., 2016). Adolescence is also a developmental stage characterized by vulnerability. 75% of lifetime adult mental disorders develop during adolescence (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). In the Canadian population, youth report the highest rates of mood disorders (8.2%) and substance use disorders (11.9%) (Pearson, Janz, & Ali, 2012) and suicide is the second most common cause of death in Canadian young people (Bennett et al., 2015). These findings highlight the need for investment in youth-focused services to promote positive development and transitions to adulthood. In spite of this evidence, experts have identified that services systems are weakest at this transition point, where they need to be strongest (McGorry, 2007). "The growing prevalence of youth mental health problems is a tsunami, and parents, the community and governments float in a small boat, named "denial", on the quiet sea." (Christensen, Reynolds 3rd, & Cuijpers, 2017, p. 328) In Canada and across the world, youth mental health and substance use service systems are fragmented and inaccessible (Biglan, Flay, Embry, & Sandler, 2012; Davidson, Kutcher, Manion, McGrath, Reynolds & Orbinne, 2010; Henderson et al., 2017; Kirby, Keon & Dinsdale, 2006; Waddell, McEwan, Shepherd, Offord & Hua, 2005). A recent review examining youth pathways to care identified that trajectories leading to appropriate care are complex and often characterized by long delays and multiple points of contact with a variety of providers (MacDonald, Fainman-Adelman, Anderson & Iyer, 2018). Youth need to receive support from comprehensive interventions in order to reach their full potential as adults (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Roth, Brooks-Gunn, Murray, & Foster, 1998; Roth & Brooks-Gunn, 2003) and researchers have recommended that there is a need for system transformation to support the integration of services (Christensen et al., 2017; Macdonald et al., 2018; Raballo, 2017).

Frayme (https://www.frayme.ca/) is a Canadian-based international network designed to facilitate the adoption and scaling up of integrated youth services (IYS) through the ongoing synthesis of evidence from a variety of sources and a commitment to integrated knowledge mobilization. Frayme defines youth as young people between 12-25 years of age. IYS were designed to address youth needs more holistically (Hetrick et al., 2017; Settipani et al., forthcoming) and overcome issues related to a lack of access and coordination of services (Henderson et al., 2017). IYS models vary across settings, however they often include mental health services, health care, and social services. Frayme objectives are achieved through the development of positive relationships among academics, practitioners, policymakers as well as youth and family members to enhance the identification of evidence gaps and build capacity to support service integration. Frayme is utilizing innovative approaches to stakeholder engagement and knowledge mobilization in order to co-design system change. The purpose of this paper is to

highlight these innovations by: 1) describing the overall Frayme strategy and 2) presenting the findings from a participatory needs assessment implemented to inform policy-related priorities. This paper also serves to enhance understanding about evaluation within complex initiatives focused on collaborative system change and describes strategies that can be used to knowledge mobilization at the system-level.

### Frayme

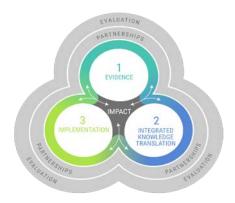
Frayme was developed to promote the uptake of IYS in order to address the fragmentation of youth mental health and substance use service systems. This need has been identified by consumers, practitioners, researchers and policymakers who have called for system transformation (Davidson, Kutcher, Manion, McGrath, Reynolds & Orbinne, 2010; Henderson et al., 2017; Kirby, Keon & Dinsdale, 2006; Malla et al., 2018; Provincial Territorial Working Group, 2016). This need is substantiated by a range of system-level challenges, including but not limited to the stigma of mental illness, a service-focused approach, a lack of funding for mental health services, issues related to privacy legislation, extended wait times and limited access to necessary care, limited engagement of youth and family perspective in system design, poor coordination and collaboration across sectors, inability to meet the unique needs of youth and families, and a lack of consideration of contextual and social determinants of health and wellbeing.

Frayme was officially launched in June of 2017 with the help of funding from Canada's Networks of Centres of Excellence (Networks of Centres of Excellence, 2018) as well as significant support from partners and philanthropic organizations. The name *Frayme* was selected to highlight our objective to develop supporting structures to facilitate the scaling up of youth-focused services. The inclusion of the "y" in Frayme symbolizes our commitment to youth

engagement and the inclusion of youth lived experience at the centre of our approach. Currently, the Frayme network includes over 280 partners from eleven countries working within research, practice, government and advocacy. The Frayme partners include individuals and organizations that are members of diverse communities. Our members represent varying perspectives from different sectors (e.g. health, mental health, addictions, education) through their various experiences in youth mental health and systems of care. Through the amplification and incorporation of these perspectives, Frayme ensures that its priorities and strategies are relevant to and representative of diverse stakeholders.

Frayme uses evidence-informed methods within knowledge synthesis, knowledge mobilization and implementation science to accomplish strategic objectives. The Frayme integrated knowledge mobilization model is based on the Co-produced Pathway to Impact (CPI; Phipps, Pepler, Craig, Cummings, & Cardinal, 2016). The CPI is a knowledge mobilization logic model based on multiple stages, including research, dissemination, uptake/accessibility, implementation and impact. It was designed to illustrate the iterative process of knowledge mobilization and has been applied in other Canadian networks. The model was adapted to incorporate the overall Frayme approach, which is illustrated in Figure 1.

Figure 1: Frayme integrated knowledge mobilization model



*Partnership* development is foundational to Frayme's work. Through the development of positive relationships, Frayme connects leaders in the field of IYS with interested stakeholders, to create new opportunities and leverage complementary work. Frayme's major stakeholder groups include researchers, service providers, policy makers, as well as youth and family members. Frayme has also been successful in engaging philanthropic partners to support this work. *Evaluation* signifies that all projects and objectives are being systematically evaluated and the findings will contribute to filling evidence gaps related to system transformation and will support other efforts designed to enhance the uptake of service innovations.

Evidence, integrated knowledge mobilization, implementation and impact are also major elements within the model. *Evidence* represents the Frayme strategy that aims to collect, synthesize and manage new knowledge related with IYS. The Frayme concept of evidence includes academic research, practice-based knowledge and the lived experiences of youth and families in navigating the mental health system.

*Integrated Knowledge Mobilization* involves activities focused on the co-production of events and resources to support the dissemination and uptake of IYS-related information. Knowledge users are engaged within all stages of the process to enhance uptake. The *Implementation* component of the strategy involves the development of tools to facilitate the uptake of IYS as well as the provision of consultations and supports to support site-specific realization of IYS models. Finally, these activities are designed to contribute to Frayme's overall vision, whereby: Youth receive the right care at the right time from the right provider in Canada and around the world.

As an example of some of Frayme's activities that align with partnership, Frayme has assembled youth and family advisories and has youth and family representatives on its Board of Directors. This ensures that youth and family voices inform overall Frayme strategies. In addition, Frayme is implementing a participatory evaluation to examine the process and outcomes related with youth and family engagement in governance.

Frayme is also synthesizing practice-based evidence through a detailed scan of IYS from across the world. The scan is designed to explore how IYS are organized, implemented and operated in various contexts. Frayme also facilitates a range of activities focused on bringing stakeholders together virtually and in person to leverage their perspectives and maximize uptake through the co-creation of knowledge, tools and other resources. In addition, the Frayme website and our other communications vehicles are used to share knowledge, facilitate dialogue between partners, and disseminate the latest information about research and practice in IYS, as well as to be a platform for toolkits and guides to support practice change.

Frayme goes beyond knowledge mobilization and employs change management strategies to promote uptake and practice change related with IYS. For example, through the IYS scan, Frayme will develop resources and tools, such as terms of reference templates for governing bodies involved in IYS, as well as implementation guides to facilitate the organizational changes and collaborations that are needed to establish and maintain an IYS site. Ultimately, we are seeking to accelerate the creation a system of care that is more reflective of the needs of young people; a system that is linked to evidence with measurable impact over time.

#### Needs assessment

As an example of relationship building and co-creation, Frayme coordinated an Inaugural Convening in the spring of 2017. The event was designed to provide a forum for provincial and territorial government officials to gather with philanthropic partners, youth and family members and leaders in the field of youth mental health to discuss best practices, key issues and opportunities for reform in the mental health care sector. The event was planned in succession with an existing youth mental health policy-related event that draws strong engagement from high-level policymakers from across Canada. This opportunity was used to bring key individuals from policy together with other stakeholder groups involved in youth mental health. The Inaugural Convening was also used to facilitate initial planning meetings for major Frayme advisory and decision-making bodies, including the Board of Directors, the Advisory on Youth Matters (the Frayme Youth Advisory), the Frayme Family Advisory, the Leadership Team and the Funder's Table. These individuals were selected because they were all in significant positions to provide insight to the implementation and scaling of IYS in Canada. There specific perspective and insight is detailed in Table 1.During this event, the Frayme leadership team facilitated a needs assessment in order to inform priorities going forward. The activities and findings are described below.

## Method

There were 63 participants who attended the event and there was strong representation from all stakeholder groups (see Table 1). This included youth and family members, researchers, policy-makers, representatives from philanthropic organizations and practitioners working in the field of youth mental health and substance use. There was policy representation from ten provinces/territories as well as the federal government (see Table 2). In addition, there were 17 representatives from federal and provincial organizations with mandates to create system-level change within the mental health and addictions sectors.

# Table 1.

Stakeholder group	Number of	Specific perspective being contributed to
	attendees	strategic planning
Research	20	- Knowledge of evidence related to youth
		mental health and IYS
		- Engaged in research of IYS models
Policy	17	- Responsible for policy related with
		youth mental health services
		- Ability to support decision-making that
		facilitates implementation of IYS
Youth	8	- Engaged in implementation of IYS
		models
		- Lived experience of engaging with
		youth mental health services
Philanthropy	7	- Experience funding youth mental health
		initiatives
		- Ability to contribute funding that
		facilitates implementation of IYS
Family members	6	- Engaged in implementation of IYS
		models
		- Lived experience of engaging with
		youth mental health services
Service provider	5	- Engaged in implementation of IYS
		models

# Convening attendees by stakeholder groups

# Table 2.

Policy representation by government location

Alberta	1
British Columbia	2
Health Canada	1
New Brunswick	2
Newfoundland	1
Nova Scotia	1
Nunavut	2
Northwest Territories	1
Ontario	2
Prince Edward Island	1
Saskatchewan	1
Federal	2

Scriven (1978) has defined needs assessment to be the "determination of the difference between what is and what ought to be, or between the actual and the ideal" (p. 1). Needs assessment is frequently used to support the development of objectives in strategic planning (Watkins & Altschuld, 2014) and in this case the approach was designed to integrate a broad diversity of stakeholders' voices from across Canada. Part of the overall Frayme strategy involved a needs assessment procedure based on a modified TRIZ exercise. TRIZ is a Russian acronym that stands for "Teorija Reschenija Izobretatel'skich Zadac" which translates to "Theory of Inventive Problem Solving" in English (Orloff, 2006). The TRIZ approach was originally designed to solve technology-related problems, however since its conception, it has been applied within a range of diverse fields (Ilevbare, 2013). The activity was based on an exercise developed by Liberating Structures that applies divergent thinking to generate innovative solutions (Cheuy, 2015). The modified TRIZ represented an innovative strategy to support needs assessment as the activity was designed to provide freedom for participants to be creative and reflect on and exchange experiences within an open atmosphere that invites honest reflection. This approach also supports the inclusion of a range of voices as it is not directly focused on finding solutions and as such, it does not privilege one form of knowledge over another. Through the exercise, the group reflected on three questions based on negative case examples related to the exchange of knowledge about IYS: 1) What conditions would ensure that knowledge is never created? 2) What conditions would ensure that knowledge is never shared? and 3) What conditions would ensure that knowledge is never implemented? Through the exercise, the group was able to brainstorm about a variety of circumstances that ranged from comedic and nonsensical to genuine scenarios that highlighted existing barriers. As such, gathered partners

were able to collectively shed light on the status of the current system and identify the existing challenges and barriers.

The participants were instructed to sit in mixed groups at ten tables so that each group had representation from each stakeholder group. After each question, groups worked at individual tables for about 15-20 minutes to create a list of responses to the question. Each table had a note-taker who reported the answers to the whole group at the end of the brainstorming session.

The notes for each group were collected and later analyzed using a thematic analysis (Braun & Clarke, 2006). This approach follows a process of familiarization with the full data set, development of initial codes based on patterns within the text, development of higher order themes and revision and elaboration of final theme categories. The sixth author reviewed the notes and generated initial codes. The first author reviewed and revised the codes and created higher order themes. These themes were discussed among the two coders to achieve final consensus. Finally, major Frayme objectives were developed based on the nature of the challenges identified within the themes. These findings were reported back to the participants several weeks after the convening and shared with the Frayme leadership team to inform strategic and operational planning.

Applying Tracy's (2010) 'Big-Tent" model for quality in qualitative research methodology, this study demonstrates several criteria, including *worthy topic*, *resonance* and *significant contribution*. This research demonstrates the criteria of *worthy topic* as it is focused on the critical modern issue of youth mental health, whereby there are broad-ranging implications with respect to future societal functioning and there is currently a significant lack of investment. This research achieves *resonance* as it describes in detail the methods and procedures followed to combine the rich experiences and diversity of perspectives of key stakeholders across Canada and demonstrates how these can be used to inform the real-time functioning of a knowledge mobilization network. This demonstrates how to apply these methods within other contexts that are focused on interdisciplinary and collaborative work to enhance health and wellbeing. Finally, this research meets the criteria of *significant contribution* as it describes work that is currently being used to inform projects, policy and practice to enhance across Canada and the world. This work has the potential to reach national populations and to promote mental health and wellbeing in youth as well as to enhance their potential engagement as future citizens within their communities.

## Results

The themes identified highlight the major systemic challenges and barriers that prohibit the creation, dissemination and uptake of knowledge related to IYS. Many of these challenges relate to established cultural norms associated with the youth services system, as well as society at large. Four main themes were identified: 1) Traditional scientific practices, 2) Organizational obstacles, 3) Change-aversion, and 4) Pre-established stakeholder hierarchies. All comments are direct quotes that describe actions that exacerbate these barriers. As such, they are worded as recommendations that would prohibit or inhibit the dissemination and uptake of knowledge.

**Traditional Scientific practices.** The first theme relates to processes and practices within the research context that diminish opportunities for engagement with affected communities, thus reducing potential knowledge sharing and practical impacts. For example, the traditional scientific reward system that focuses on scientific journal publications and impact factors was one of the identified barriers: "Have research reward based on results that fit status quo (journals, etc.)." "Have universities and institutions be super traditional with types of

knowledge." "Set up incentives for only journal publications." Participants recognized that placing pressure on researchers to invest in more exclusive formats of sharing research findings limits their ability to engage with other stakeholders and to target findings to non-academic audiences. They also suggested the need to reform the metrics of academic success and advancement to put increased emphasis on real world knowledge sharing with a diversity of stakeholders and the applied impact of research findings.

Another obstacle that was associated with research practices was the tendency to place an emphasis on positive results, "Only report what looks good." "Create unsafe culture for sharing." Participants recognized that there is a bias to publish positive results, rather than negative or inconclusive results. Further, with respect to demonstrating accountability in evaluation research, there is also pressure to present findings in a more positive light. The tendency to publish only positive results limits the ability of decision-makers to learn from the work of others and avoid efforts that have not been shown to be effective.

**Organizational obstacles.** The challenges that were identified within the second theme highlight the structures and processes within practice and among organizations that restrict sharing of information. This is particularly relevant to IYS where knowledge sharing and working collaboratively are essential. Some of the comments related to the difficulties created by having highly specialized disciplines and problem-focused practice, "Reinforce silos – Can't communicate with one another." "Create layers of approval, legal contracts." "Never deal with others external to your organization." Silos describe the lack of integration between sectors and the difficulties that are created by having highly regulated internal systems, specialized language and a lack of space to facilitate external exchange.

In addition to bureaucratic obstacles among organizations, the participants also highlighted the climate of competition that undermines collaboration among organizations. For example, some comments discussed the oppositional relations among organizations, "Pit organizations against each other." "Don't facilitate bringing people together." Some participants also noted that organizations are encouraged to take exclusive ownership over products and innovations "Encourage proprietary-ship."

**Change-aversion.** Some barriers that were noted were common across settings, including academic, practice and related contexts. The general disposition of being averse to change was mentioned several times. This included some reflections that within some circumstances, there are incentives for avoiding change: "Reward change adverse bullies", "Don't deal with challenges to change", "See change as burden", "Be as critical as possible about new information". Some comments highlighted the that there is also existing reluctance to apply strategies that promote system change, such as change management approaches and the measurement of readiness for change: "Don't understand readiness for change", "Don't include change management."

**Hierarchical influences.** The fourth theme that emerged was centred on hierarchies of influence among stakeholders: "Ensure hierarchy." Comments indicated that these hierarchies diminish engagement both within organizations, "Don't include staff in planning change", as well as among groups, "Be responsible to only certain groups."

Among the stakeholder groups who are often excluded, youth and families were emphasized. For example, it was highlighted that many projects and initiatives continue to exclude youth and family within their planning, "Don't involve families or youth", "Don't see youth and families as knowledge experts", "Never include youth and family in implementation." Participants also noted that youth and family engagement strategies were sometimes flawed in that there is a lack of diversity of perspectives included, "Keep engaging the same few youth, families, etc." In addition, participants acknowledged that the system continues to place the onus on the individual with mental health issues, rather than seeking to make changes to external factors, "Victim blaming/not acknowledging systemic influences."

#### Discussion

The inaugural convening and the TRIZ exercise was designed to bring key stakeholders together within the Canadian mental health and addictions system to build relationships and to collectively identify Frayme priorities. The TRIZ exercise created a non-traditional space for participants to identify a range of current issues that hinder system transformation and the uptake of new innovations, including traditional scientific practices, organizational obstacles, change-aversion, and pre-established stakeholders hierarchies. The exercise itself role modelled innovation as stakeholders engaged in common dialogue in a method that was equally novel for all participants.

There is consensus among experts that the youth services system is fragmented and lacks integration (Biglan et al., 2012; Henderson et al., 2017; Kirby et al., 2006; Waddell et al., 2005). This is consistent with our findings with respect to organizational obstacles such as interorganizational competition and challenges related to collaboration. When agencies are not encouraged to work together and processes and procedures are designed to isolate their work, the organization and delivery of youth services will continue to be based on systemic preferences, rather than individual needs. This perspective envisions individuals based on both isolated problems and isolated strategies to respond to those problems without considering strengths, or the dynamics of developmental changes.

There is a significant body of implementation science research that considers the challenges related with overcoming traditional scientific practices and methods to manage change aversion to influence practice change (see Metz, Bartley, Ball, Wilson, Naoom & Redmond, 2015; Meyers, 2012; Nilsen, 2015; Tabak, Khoong, Chambers & Brownson, 2012 for reviews). More recently, research has begun to examine the implications of applying strategies derived from implementation science within complex systems and the factors that influence change (Braithwaite, Churruca, Long, Ellis & Herkes, 2018; Reed, Howe, Doyle & Bell, 2018). For example, Braithwaite and colleagues (2018) identifies that "the health system is probabilistic and stochastic rather than deterministic and causal" and that earlier notions of implementation science approaches were linear and mechanistic and their application to complex systems is limited. (p. 3). Recognizing that Frayme is working at the broader system-level and targeting the integration of community-based systems of service, it will be important to integrate concepts from complexity science and systems-level approaches to inform implementation and scaling efforts. In addition, behavioural economics may help to inform new methods to incentivize behaviour change using the online and policy environment (Halsall, Garinger, Dixon & Forneris, 2019).

### Frayme priorities informed by the TRIZ exploration

Through the recognition of these challenges, Frayme has developed a set of major objectives to inform projects, opportunities for knowledge sharing, implementation of evidence and scaling up of efforts. More specifically, the previous obstacles indicate the importance of investing in the following strategies: 1) Building relationships in order to foster an atmosphere of collaboration (within and across sectors, stakeholder groups and geography), 2) Creating incentives for knowledge sharing, 3) Building capacity regarding change management strategies, 4) Raising

awareness regarding the importance and effectiveness of youth and family engagement, and 5) Leveraging technology to facilitate collaboration and uptake of new knowledge. These have all been addressed in the processes that Frayme follows in its work as well as the priority projects that it has identified to move the sector forward.

## Future research and practice

As a result of the method used to collect stakeholder perspectives on current issues within youth mental health, it was not possible to examine differences among stakeholder groups. Frayme engages several individual stakeholder perspectives to support their engagement and provision of their unique lens toward future strategies, such as the family advisory and the Advisory on Youth Matters. Collaborative networks must create opportunities to inform design through the engagement of unique stakeholder perspectives in addition to opportunities for relationship building and engagement of the collective voice.

The Frayme integrated knowledge mobilization model represents a unique applied example of an evidence-informed approach to practice collaboration and knowledge mobilization to promote system change. This model can be applied within similar organizations with the objective to enhance practice on a broad scale. From this foundation, Frayme will work to "Act locally, connect regionally, learn globally" (Wheatley, 2007; 2015, p. 3). The Frayme approach is evergreen and will be adapted based on contextual changes, shifting stakeholder needs, and evaluation findings.

The TRIZ activity represents an innovation to traditional knowledge mobilization techniques and needs assessment. This approach is typically applied to generate novel solutions to technical problems (Ilevbare, 2013) and, in this context it was used to leverage knowledge and capacity of key players within the Canadian mental health and substance use system. Major stakeholders, including youth, family members and key decision-makers from policy roles across Canada were brought together to reflect on shared experiences within system transformation to identify common challenges. By creating an open forum to share these perspectives, Frayme generated an opportunity to co-create a path forward and to enhance investment and uptake in identified priorities.

Finally, as Frayme advances on targeted projects to promote implementation and uptake of IYS, it will develop new knowledge to advance the field with respect to implementation and practice change at the system-level. The TRIZ needs assessment is a starting point for Frayme to reflect on relevant system-level attributes that must be targeted to advance change. Frayme will continue to build on these innovative strategies and will share lessons learned related with system-level transformation through ongoing evaluation that is informed by complexity science, youth engagement and systems theory (see Halsall, Manion & Henderson, 2018; Hargreaves, 2014; Pawson, 2013; Zeldin, Bestul and Powers, 2012).

#### Conclusion

This paper presents the Frayme integrated knowledge mobilization strategy and describes the findings from a participatory needs assessment conducted to inform priority planning. It highlights system-level challenges related to youth mental health services transformation, and showcases the role of integrated knowledge mobilization as a vehicle for advancing that transformation. The world has recognized the virtue of upstream and holistic interventions, as has been demonstrated in the application of systems-level models of transformation (Bronfenbrenner & Morris, 2006; Sallis, Cervero, Ascher, Henderson, Kraft & Kerr, 2006) and global policy. For example, the UN Sustainable Development Goals encompass a multitude of objectives that are interconnected, and are all crucial for the wellbeing of individuals and society (United Nations, 2015). Similarly, we must recognize that efforts to promote youth well-being are not one-dimensional investments, as they will have impacts on the community, economy and society, including the natural world. Youth are the keepers of our future, we must help them now.

## Funding

Social Sciences and Humanities Research Council of Canada, Grant/Award Number: 756-2018-0559

## **Conflict of Interest**

There is no conflict of interests.

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