Understanding the role of culture in the delivery of mental health programs in Indigenous communities: A narrative review of online mental health resources and perspectives on culture as treatment

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Table of Contents

Abstract

Cultural adaptation is an integral part to the implementation of mental health programs in Indigenous communities. Previous research has suggested that culturally adapted programs can increase program uptake and address the specific needs of Indigenous communities. In fact, Indigenous community members may see the teaching components of culture as a form of healing. "Culture as treatment" refers to the notion that strengthening and restoring cultural knowledge, traditional beliefs, and identity can have a preventive or curative effect on mental health related problems. However, there has been limited scholarly attention, especially supported by empirical data, exploring notions of culture as treatment. Moreover, with the onset of COVID-19 and government regulated health measures, mental health programs have had to adapt to online platforms, which poses new challenges on how culture may be integrated into mental health promotion. This thesis aims to address the gaps in the literature to better define notions of culture as treatment and best methods for implementing culturally adapted programs online. First, I conducted a narrative review of 33 articles with original data to better understand the resources required to implement online mental health programs and to review their effectiveness. This narrative review suggests that online mental health resources are a feasible strategy to implement services in Indigenous communities, though issues with access to high-speed internet and electronic devices, issues with the implementation, and questions about how to best culturally adapt materials remain. Second, to understand perspectives on the role of cultural adaption in mental health programs, I interviewed 11 program facilitators involved with the *Listening to One Another to Grow Strong* (LTOA) program. LTOA is a strength-based, mental health promotion program designed for Indigenous youth across Canada. Each Indigenous community across Canada culturally adapts the program to meet their local cultural

and mental health needs. Interviews with program facilitators indicate that there is high value placed on culturally adapting programs. While there is a focus on ensuring programs fit the local cultural and mental health needs of the community, participants in this study understood the teaching of local culture can be healing to communities they serve. Suggestions for introducing and teaching cultural elements online are further presented in this study.

Résumé

L'adaptation culturelle fait partie intégrante de la mise en œuvre de programmes de santé mentale dans les communautés autochtones. Des recherches antérieures ont suggéré que les programmes culturellement adaptés peuvent accroître la participation aux programmes et répondre aux besoins spécifiques des communautés autochtones. En effet, les membres des communautés autochtones peuvent voir les éléments d'enseignement de la culture comme une forme de guérison. La « culture comme traitement » fait référence à la notion selon laquelle le renforcement et la restauration des connaissances culturelles, des croyances traditionnelles, et de l'identité peuvent avoir un effet préventif ou curatif sur les problèmes liés à la santé mentale. Cependant, il y a peu d'attention scientifique explorant les notions de culture comme traitement. En outre, lorsque la COVID-19 et les mesures sanitaires réglementées par le gouvernement ont débuté, les programmes de santé mentale ont dû s'adapter aux plateformes en ligne, ce qui a posé de nouveaux défis quant à la façon dont la culture peut être intégrée à la promotion de la santé mentale. Cette thèse de maîtrise vise à résoudre les lacunes de la littérature afin de mieux définir les notions de culture comme traitement ainsi que les meilleures méthodes pour mettre en œuvre des programmes culturellement adaptés en ligne. Premièrement, j'ai effectué un examen narratif de 33 articles avec des données originales afin de mieux comprendre les ressources nécessaires à la mise en œuvre de programmes de santé mentale, ainsi qu'à l'évaluation de leur efficacité. L'examen narratif suggère que les ressources en ligne pour la santé mentale sont une stratégie réalisable pour mettre en œuvre des services de santé mentale dans les communautés autochtones. Toutefois, des problèmes d'accès à l'Internet haute vitesse et à des appareils électroniques, des problèmes de mise en œuvre, et des questions sur la meilleure façon d'adapter culturellement le matériel demeurent. Deuxièmement, pour comprendre les perspectives sur le

rôle de l'adaptation culturelle dans les programmes de santé mentale, j'ai interviewé onze animateurs du programme *S'écouter les Uns les Autres*. *S'écouter les Uns les Autres* est un programme de promotion de la santé mentale avec une approche axée sur les forces et conçu pour les jeunes autochtones à travers le Canada. Chaque communauté autochtone à travers le Canada adapte le programme pour répondre à ses besoins locaux en matière de culture et de santé mentale. Les entrevues avec les animateurs de programme indiquent qu'il y a une grande valeur accordée aux programmes d'adaptation culturelle. Bien que l'accent soit mis sur l'adéquation des programmes aux besoins culturels et de santé mentale locaux de la communauté, les participants à cette étude ont compris que l'enseignement de la culture locale peut être bénéfique pour les communautés qu'ils desservent. Des suggestions pour introduire et enseigner des éléments culturels en ligne sont présentées plus en détail dans cette étude.

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Contributions of Authors

For manuscript 1, I designed the research plan and objectives in consultation with Dr. Laurence Kirmayer. The methodologies for conducting this search were enriched through consultations with a medical Librarian at McGill University, who has expertise in mental health and psychiatric literature. I read the titles, abstracts, and articles found in the search, in full, and analyzed and organized the data for the manuscript. I wrote manuscript 1 with direct edits and input from Dr. Kirmayer.

Manuscript 2 is based on data collected from program implementers in the *Listening to one Another Program* (LTOA). I designed the study in consultation with Dr. Kirmayer, the Principal Investigator of the LTOA program. I recruited participants, conducted the interviews, analyzed the data, and wrote the manuscript. Dr. Kirmayer guided and supervised my research and edited manuscript 2.

My co-supervisor, Dr. Steven Shaw, and the members of my Advisory Committee team, Dr. Melissa Walls and Dr. Jacob Burack, provided feedback and support for the study design, and provided edits and suggestions to both manuscripts.

Introduction

The term Indigenous Peoples has been used to describe descendants of the first people who inhabited a territory prior to the arrival of settlers and the colonial regime (Niezen, 2009; Paradies et al., 2016; Wolfe, 2006). People who self-identify as Indigenous may be connected to a specific place, history, culture, or worldview (Cunningham & Stanley, 2003; Niezen, 2009). In the present day, settler colonialism still effects the lives of Indigenous Peoples. In Canada, for instance, Indigenous people make up roughly 5 percent of the total population and is a population growing faster than the non-Indigenous population (Statistics Canada, 2017). Yet, Indigenous populations experience a higher prevalence of mental health problems in some communities or segments of the population, despite being less likely to have access to health care services than non-Indigenous peoples (Browne, 2017; Davy et al., 2016; Martin et al., 2018). Rural and remote Indigenous communities may be most affected due to the geographical distance to health care services (Allan & Smylie, 2015; Smith & Humphreys, 2008). Online platforms are one strategy to improve access to mental health resources in Indigenous communities (Hensel et al., 2019; Khan et al., 2017; Reilly et al., 2020).

In general, there is evidence that the acceptability and use of Indigenous mental health resources can be improved by the inclusion of culturally relevant healing processes, symbols, and examples (Fletcher et al., 2017; Spanhel et al., 2021). Their inclusion can improve familiarity with the resource and help strengthen identity (Hensel et al., 2019). However, less is known about the role of culture in resources delivered online. The first paper in this thesis is a narrative review of the literature on online mental health resources for Indigenous youth. The purpose is to explore the steps required to design, implement, and evaluate the resources and identify the potential benefits of culturally adapted materials.

Cultural adaptation of online mental health resources for Indigenous youth: a narrative review

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Abstract

Indigenous communities face more challenges accessing mental health services than non-Indigenous communities. This lack of access may be most pronounced in rural and remote regions. Online mental health resources, such as smartphone applications, web-based applications, and video conferencing, among others, are some strategies to improve access. However, online mental health resources in Indigenous communities are an emerging field. Less is known about complexity of their delivery and their cultural adaptation process. I conducted a narrative review to provide insights on the multitude of steps required to deliver online mental health resources, such as perspectives on their benefits, their development, the training of local staff to adopt online mental health resources into their practice, the integration of culture into the resources, the implementation of the resources, and their evaluation. 33 articles with original data were identified in this search and were thematically coded to answer the research questions. Findings from the review suggest that implementation of online mental health resources is feasible, but barriers remain. A lack of internet access and electronic devices may impede their delivery. Although online mental health resources may have a positive impact on the mental health of Indigenous youth, it is unclear how to sustain these programs long-term. Cultural adaptation can increase engagement among youth participants, but may require extensive time and resources from local health organizations.

Keywords: Indigenous peoples; mental health; online health; narrative review

Introduction

Indigenous Populations in settler societies, including Canada, Australia, New Zealand, and the United States, have endured significant health inequities compared to the general population. In large part, this reflects the structural inequities and the transgenerational effects of settler colonialism, which have resulted in marginalization and disempowerment. One health inequity some Indigenous populations face is limited access to appropriate health services. Lack of access may be due to the geographical location of remote communities and a lack of available culturally safe health care settings (Allan & Smylie, 2015; Smith & Humphreys, 2008). These issues have led efforts to develop models of care that can reach underserved Indigenous populations (Browne et al., 2016; Clifford et al., 2015). More recently, online mental health resources have been mobilized to increase access to mental health services worldwide (Apolinario-Hagen, et al., 2018; Lal & Adair, 2014; Musiat et al., 2014). These efforts have been extended to develop culturally relevant online mental health resources for Indigenous youth (Hensel et al., 2019; Khan et al., 2017; Reilly et al., 2020). These resources tend to be mental health promotion programs used independently by youth or mental health resources used by youth in consultation with professionals. The growing role of internet and communication technologies in the lives of youth suggests that online mental health resources could increase the uptake of mental health services (Boydell et al., 2014; Burns et al., 2016). In this paper, I present findings from a narrative review of the scientific literature to consider best practices for the use of online mental health resources for youth in Indigenous communities.

The Potential of e-Mental Health for Indigenous Communities

The COVID-19 pandemic has increased the need for online mental health resources. Social isolation due to physical distancing measures has had negative impacts on all youth in the

general population, with many individuals without a prior history of mental illness experiencing an increase in anxiety and depressive symptoms (Cullen et al., 2020; Nearchou et al., 2020; Usher et al., 2020). In addition, the closure of schools and clinics, and limitations placed on in-person gatherings, has required implementers of mental health services to reconsider their usual methods of delivery (Moreno et al., 2020; Taylor et al., 2020). Given the rise in mental health related problems, the need for online mental health resources in Indigenous and non-Indigenous communities has increased (Kumar & Nayar, 2020; Smith et al., 2020). Indeed, physical distancing measures have led healthcare systems to adopt online resources such as videoconferencing, smartphone applications, SMS – among others – faster than initially anticipated (Golinelli et al., 2020).

For rural and remote communities, online methods of consultation and delivery can provide access to services that would not ordinarily be available (Davies et al., 2015; Jones et al., 2017; Maar et al., 2015). However, implementing online mental health resources in rural and remote Indigenous communities poses specific challenges. These include a lack of access to high-speed internet, a lack of culturally appropriate online services, and a lack of training for health care providers on how to implement or work with such services (Fraser et al., 2017; Jones et al., 2017). Furthermore, Indigenous community health organizations may not have the resources or technological infrastructure, such as broadband connections, necessary to implement online mental health resources (Jones et al., 2017; Maar et al., 2015). These barriers can potentially exclude a population who could, in theory, benefit most from online mental health resources (Madjedi & Daya, 2016; Mushquash et al., 2019).

Recent reviews on the use of online health resources for Indigenous Populations have largely focused on online health solutions for physical or general health (Brusse et al., 2014;

Fraser et al., 2017; Hobson et al., 2019; Reilly et al., 2020). One systematic review by Toombs et al. (2020) focused on the feasibility and effectiveness of online mental health solutions for Indigenous populations by summarizing findings from articles published between January 2000 to May 2019. Toombs et al. (2020) concluded that the implementation of online mental health resources is feasible, but more research is required to determine their effectiveness and to identify youth preferences. Although Toombs et al. (2020) provides a useful overview of online mental health resources in Indigenous communities, most studies focus on the impact of the medium of delivery, and less is known about the importance of cultural knowledge and cultural adaptation of online resources (Hensel et al., 2019).

Cultural Considerations of Online Mental Health

As online mental health resources have been scaled up from clinical trials to reach larger populations, studies suggest that the degree of youth engagement decreases (Fleming et al., 2016; Gilbody et al., 2015; Mohr et al., 2017). This difference in level of engagement may be due to challenges with the design of the resources and their implementation (Fleming et al., 2016; Gilbody et al., 2015; Mohr et al., 2017). Research has demonstrated that the cultural adaptation of materials may increase acceptability, fit, and uptake (Crook et al., 2019; Crooks et al., 2015; Kumpfer et al., 2016; Proctor et al., 2013). The level of cultural adaptation required for online mental health resources may vary. For instance, mental health resources designed to be used in consultation with mental health professionals may not require the same depth of culturally adapted materials as a mental health promotion tool used independently by youth.

Some resources have been developed to address the cultural adaptation of online mental health materials. Spanhel et al. (2021) developed guidelines to systematically adapt online mental health resources, including best ways to translate and design materials (among others).

Mushquash et al. (2019) provided recommendations for the implementation of online resources in Indigenous communities, including the tailoring of cultural content. However, questions remain about the challenges of integrating cultural content to online platforms. If youth are meant to interact with the online materials independently, this may limit or constrain the presentation of culturally relevant information. For instance, contact with an Elder or land-based activities that have been used in the past may not be feasible online.

To allow online delivery, mental health resources may simply require a surface adaptation rather than a deep adaptation. Surface adaptations include changes made to the language, visual presentation, format, examples, and appearance of the materials, whereas deeper adaptations integrate specific cultural, social, and historical factors that influence health (Cabassa & Baumann, 2013; Resnicow et al., 2000). However, these two broad levels of adaptation may have some overlap. Okamoto et al. (2014) describe the adaptation process on a continuum, from non-adapted programs to culturally grounded prevention programs. Mental health interventions can be qualified as non-adapted programs, surface-structure cultural adaptation, deep-structure cultural adaptation, and culturally grounded programs. Depending on the context of the adaptation, some surface adaptations may have more significance than others. For instance, the inclusion of local language in an Indigenous program may have a deeper historical and political significance that goes beyond linguistic accessibility to include recognition of cultural identity and revitalization of tradition.

Objectives of the Present Study

To better understand the complexity of culturally adapting materials and delivering online mental health resources in Indigenous communities, I conducted a narrative review about online mental health resources created for Indigenous youth. The aim was to examine Indigenous

community perspectives on the benefits and limitations of online mental health resources, their development and implementation, including the training of mental health staff on how to integrate online resources into practice, the cultural adaptation and integration of cultural elements, and their evaluation. Whereas a systematic review comprehensively assesses literature identified with a precise selection criteria to answer a specific research question, a narrative review allows for a more open-ended and exploratory process (Baumeister & Leary, 1997; Ferrari, 2015). Given the current state of the literature and the broad goal of gaining a better understanding of the multiple components involved in the development and use of online mental health resources for Indigenous communities, a narrative review was deemed more appropriate.

This narrative review sought to answer five broad questions: 1) Do Indigenous communities and mental health practitioners think online mental health resources are useful? 2) What types of online mental health resources for Indigenous communities have been developed? 3) What are the key issues in the development and implementation of online mental health resources for Indigenous youth? 4) How do these issues differ from those faced in developing and implementing resources for other groups in other settings; in particular, what role does cultural and contextual adaptation play in the development and delivery of these resources? 5) What methods are used to evaluate the effectiveness of online mental health resources?

Methods

Search Strategy

To begin this search, I conducted a preliminary review of online mental health resources for Indigenous youth on Google Scholar. Key articles found through Google Scholar were read in full to identify commonly used terminology, which was then added to the search terms used in the previous review by Toombs et al. (2020). The search was refined in consultation with a

medical librarian from McGill University who had expertise in mental health and psychiatric literature. The final search criteria for this narrative review were: (Aboriginal OR “First Nation” OR Indigenous OR Metis OR Native OR Inuit) AND (“Smartphone” OR "Short Message Service" OR “SMS” OR "Text Messaging" OR "Text Message" OR "Cellular Phone" OR “Telemedicine” OR “eHealth” OR “Telehealth” OR “e-Health” OR "Mobile Health" OR "Electronic Health" OR "Distance-Based Intervention" OR "Internet-Based Intervention" OR “Teleintervention” OR "Online Programs") AND ("Mental Health" OR “Wellbeing” OR "Mental-Health" OR "Mental Wellbeing" OR "Emotional health" OR "Wellness").

This search included articles with original data published between January 2010 to January 2021. I conducted this search across multiple databases, including Scopus, Medline, ERIC, Academic Search Complete (EBSCO), Cochrane, Jstor, PsychARTICLES, Social Services Abstracts, and Web of Science. The search terms were also inputted into Google Scholar and Google to determine if there were any relevant articles missing. I also scanned the bibliographies and reference lists of relevant articles found within this search to identify other articles that address the topic of online mental health for Indigenous communities.

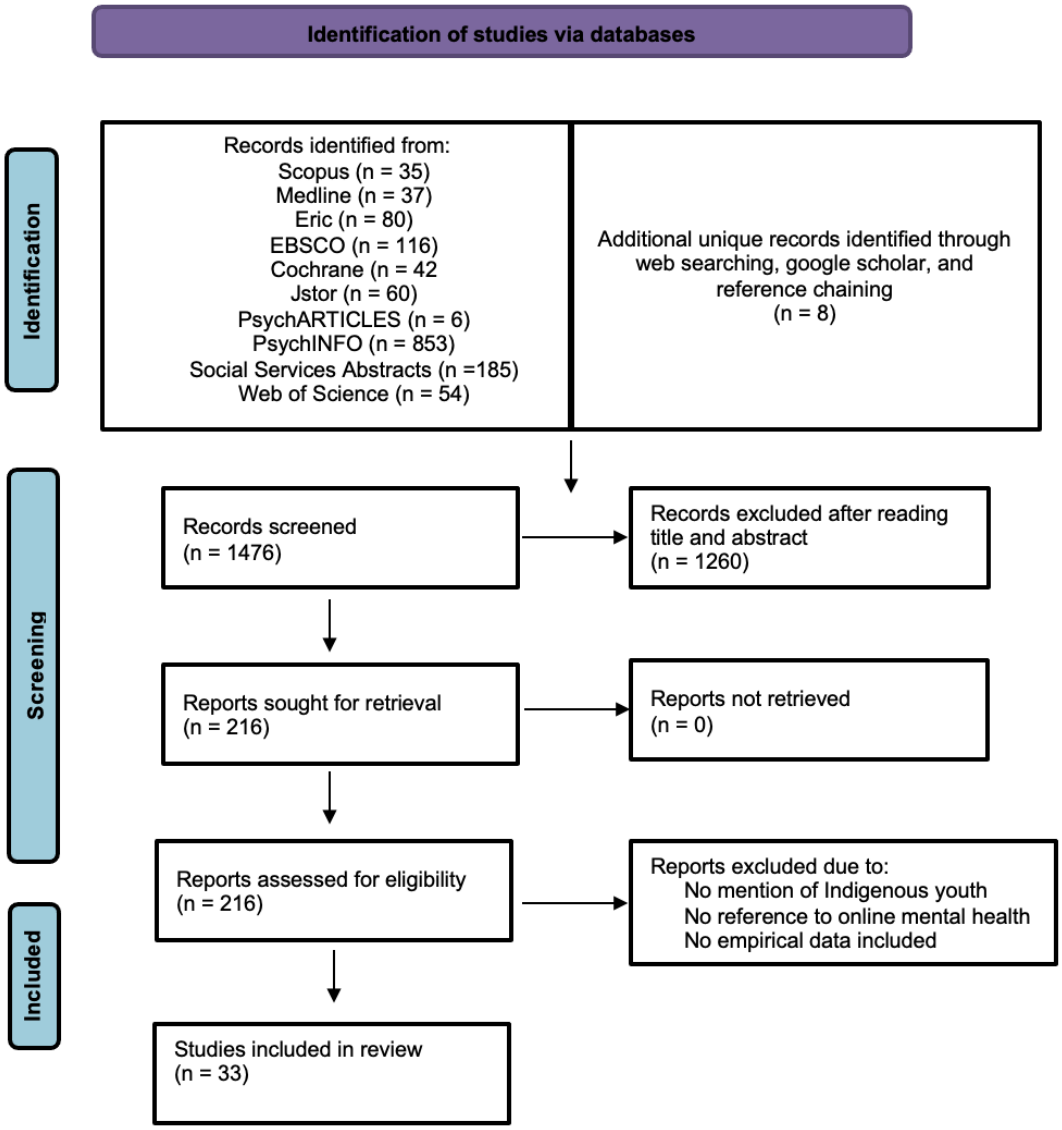
Selection of Research Articles

The PRISMA diagram in Figure 1 summarizes the search results. My initial search identified 1,468 potential articles. I exported the articles into Endnote and read the titles and abstracts in full. Following the inclusion criteria, I placed the articles into “keep,” “reject,” or “don’t know” categories. Next, I reviewed the 216 articles inputted into “keep” or “don’t know” folders to determine if the information in the abstract and title were relevant for this search, and I further removed articles using the exclusion criteria. Inclusion criteria were: 1) written in English; and 2) original empirical report describing some aspect of the development, training,

cultural adaptation, implementation, or evaluation of online mental health resources designed for Indigenous youth (aged 12 to 35). Exclusion criteria was: 1) not related to mental health (i.e., cardiovascular health, diabetes, eye health, etc.); 2) no original data presented in the article. Given that this narrative review aimed to offer an exhaustive account of all components of the implementation process, 33 articles that met criteria were kept for this narrative review, adding an additional 23 articles to the 10 identified in the search conducted by Toombs et al., 2020.

Figure 1.

PRISMA Diagram of Search Results



The 33 articles identified were read and thematically coded according to a deductive approach to answer the research questions (Boland et al., 2017; Nguyen et al., 2020). As demonstrated in Appendix 1, the articles were organized according to the topics of the research questions: 1) Perspectives on online mental health resources; 2) Development of online mental health resources designed for Indigenous youth; 3) Training facilitators to implement online mental health resources into regularly scheduled programming; 4) Cultural adaptations of online mental health resources; 5) Implementation of online mental health resources; 6) Outcomes of online mental health resources. The results section below also summarizes the literature according to these topics. I conducted a narrative synthesis to provide an in-depth examination for topic (Popay et al., 2006).

Results

The articles identified in this review were published in Australia (N = 13), Canada (N = 8), the United States (N = 8), and New Zealand (N = 4); 52 percent of the articles in this search used qualitative methods, 30 percent used quantitative methods, and 18 percent used mixed methods; 56 percent of the studies that measured outcomes used purely quantitative methods and 44 percent used mixed methods. Types of online resources this search identified include mental health applications, video games, web-based interventions, and text-based resources, and tend to be strengths-based resources that teach positive mental health strategies, target milder symptoms of depression and anxiety, drug-use, or complement visits with mental health professionals. Appendix 1 provides information on the 33 studies included in this review.

Perspectives on Online Mental Health Resources

Four articles found in this search answered the question about perspectives of online mental health resources. More specifically, all four of the articles, written in Canada, provided

insights on community perspectives, two articles provided insights on practitioner perspectives, and two articles provided insights from staff at community health organizations.

Community Perspectives

According to Indigenous community members participating in the four studies, online mental health resources are viable options for Indigenous communities (Gibson et al., 2011a; Leader, 2020; Monthuy-Blanc et al., 2013; Shang et al., 2021). Online mental health services can provide a sense of privacy by enabling patients to talk to a health care provider from outside the community (Gibson et al., 2011a; Shang et al., 2021). Being able to access mental health resources remotely also removes travel barriers and reduces travel cost for community members (Gibson et al., 2011a; Leader, 2020). However, some may need to travel to local community health centers to access online mental resources (Gibson et al., 2011a; Leader, 2020). Given that community health centers are public spaces, these centers may not be able to provide a quiet and private space for conducting online health sessions (Leader, 2020).

Practitioner Perspectives

According to two articles that provided insights on practitioner perspectives, mental health professionals perceive that video conferencing applications are useful resources to offer mental health services to Indigenous communities (Leader, 2020; Shang et al., 2021). When working in Indigenous communities, mental health professionals who do not reside in Indigenous communities are only able to travel periodically to communities and cannot offer ongoing (e.g., weekly) in-person services. Online resources provide mental health practitioners an alternative way to meet with patients more frequently and with greater flexibility (Shang et al., 2021). However, practitioners stated that videoconferencing cannot fully replace in-person meetings. Practitioners felt that their relationships with patients and Indigenous communities can

be developed and fostered more effectively in-person, and in-person meetings can improve the therapeutic alliance (Leader, 2020; Shang et al., 2021). In addition, online mental health resources may not be appropriate for all mental health related problems. Whereas online resources can support persons feeling anxious, depressed, desiring to reduce drug use, or provide other strengths-based mental health strategies, these same resources may not be appropriate for persons experiencing psychosis (Shang et al., 2021).

Community Health Worker/Organization Perspectives

Although online resources can improve access to mental health professionals in Indigenous communities, these resources require specific funding and human resources. As mentioned above, some Indigenous peoples will need to travel to local health organizations to access online mental health resources. Reliance on these centers means that Indigenous community health center workers – who already have multiple roles and responsibilities – will need to assume additional tasks (Leader, 2020; Shang et al., 2021). Additionally, resources will need to be adapted to meet the cultural and mental health needs of each community. In this case, Indigenous organizations without the necessary funds set aside for online mental health delivery will have challenges adapting materials (Leader, 2020; Shang et al., 2021).

Development of Online Mental Health Resources Designed for Indigenous Youth

This narrative review found seven studies that documented the development process of six unique resources designed for Indigenous youth. Appendix 1 provides additional details on the resources identified: Quest - Te Whitianga, Aboriginal and Torres Strait Islander Mental Health Initiative for Youth (AIMhi-Y), Honoring Ancient Wisdom and Knowledge 2 (HAWK2), Smart Positive Active Realistic X-Factor Thoughts (SPARX), CHAT, and SmokingZine. These resources have been implemented in Australia, New Zealand, and the United States.

Each study documented the development process by interviewing either Indigenous youth, healthcare providers, and key informants to collect community input on design, experience with the resource, and the inclusion of culturally relevant images and teachings. In terms of resource design, youth stated that online resources need to be easy to use and navigate (Povey et al., 2020). Two articles emphasized the need for resources to use an appropriate reading level for the intended age group (Shepherd et al., 2015; Shrestha et al., 2019). Youth also suggested replacing substantial amounts of text with images (Shepherd et al., 2015; Shrestha et al., 2019). To help motivate youth to consistently use the resource, indicators of progress and messages of positive reinforcement were integrated into the design (Christie et al., 2019).

Regarding the privacy of sensitive and personal information, many youths noted that they would feel more comfortable storing it on a password protected electronic device. For example, CHAT had a daily journaling component which included sensitive information such as birth control use and alcohol consumption. Youth reviewing the resource mentioned that if this were written in a book, anyone could pick it up and read the information inside, or if the book were lost, the confidential information could be exposed (Shrestha et al., 2019). Of interest, no studies in this review suggested that crowded households may be a deterrent to participation in programs due to issues of privacy. Issues of privacy in crowded households have become more frequent with schools closing due to COVID-19 regulations. Future research on online mental health resources should explore this issue further.

By conducting research with Indigenous youth, these studies reflected on how online mental health resources could address the mental health needs of Indigenous youth. For example, with the rise of cyberbullying, Povey et al. (2020) suggest teaching youth about strategies to address bullying was a key component of mental health resources. Youth also perceived that a

useful component of the resource was learning how to identify and cope with mental health problems (Povey et al., 2020; Shepherd et al., 2015; Tuaulii et al., 2010). Shepherd et al. (2015) emphasized that a strength of these resources was including components that increased youths' feelings of excitement for the future.

A final theme that emerged from the seven studies was the inclusion of Indigenous culture in online mental health resources. Some existing resources can be adapted to include Indigenous cultural content. For instance, SmokingZine was originally designed for non-Indigenous audiences; however, after consulting with Indigenous youth, surface adaptations were made to include more Indigenous images, music, and scenarios (Taualii et al., 2010). Deeper level adaptations can also be made to include Indigenous understandings of mental health and wellness (Shepherd et al., 2015; Shrestha et al., 2019). These adaptations include integrating traditional cultural teachings related to the theme of the intervention and reinforcing cultural identity (Christie et al., 2019; Fletcher et al., 2017; Shrestha et al., 2019). These types of adaptations require substantial engagement from Indigenous community knowledge holders. Raghupathy & Forth (2012) suggest that online mental health resources need to undergo local adaptation to better reflect the specific needs of each Indigenous community. Doing so can increase positive feelings of Indigenous identity and increase uptake of the resource because youth have been found to respond well to cultural images (Shepherd et al., 2015; Shepherd et al., 2018; Shrestha et al., 2019).

Training Staff to Implement Online Mental Health Resources into Regularly Scheduled Programming

Some online mental health resources are designed to be used with staff, especially if the target population is experiencing more severe mental health problems. This section will examine

how staff were trained to integrate online mental health resources into their regular programming.

Some staff may think they lack the digital literacy to use online resources, lack the structures to integrate technology, or that their organization would not support it (Bennett-Levy et al., 2017). Some may believe online resources are not an efficacious method for connecting with clients (Bennett-Levy et al., 2017; Dingwall et al., 2015a). In contrast, if managers enthusiastically embrace online resources, staff may be more likely to integrate online mental health resources into regular programming (Bennett-Levy et al., 2017; Volpe et al., 2014).

Several studies suggest that providing training to properly integrate mental health resources into regular programming can increase their uptake amongst both staff and participants (Bennet et al., 2017; Bird et al., 2017; Dingwall et al., 2015a). Training sessions can make staff feel more confident about integrating online resources into programming (Dingwall et al., 2015a). Training can also be used to show how mental health mobile applications or platforms, such as YouTube and Facebook, can be integrated into programs, providing a resource youth can use at home (Bennet et al., 2017; Bird et al., 2017). For instance, youth can use *Stay Strong*, a strength-based mental health promotion application, to work on improving mental health functioning at home, as a supplement to meeting regularly with a staff (Bird et al., 2017).

Cultural Adaptations of Online Mental Health Resources

Cultural adaptation was discussed in 16 of the articles identified in this narrative review: seven from the United States, six from Australia, two from New Zealand, and one from Canada.

Culturally adapting resources can increase skill acquisition, uptake, and participant knowledge, while making the resource more interesting for youth (Bennet-Levy et al., 2017; Fletcher et al., 2017; Shepherd et al., 2015). Integration of culture can also help to build kinship

ties and give youth more pride in their Indigenous identity, while counteracting or deflecting negative stereotypes (Wexler et al., 2013). Indigenous youth are also more likely to use culturally adapted mental health resources over conventional ones, because culturally adapted resources enable deeper understanding of Indigenous contexts and the unique experiences of Indigenous youth (Peiris et al., 2019; Shang, et al., 2021; Shrestha et al., 2019; Stephens et al., 2020). Generic online resources can be used as a guide, but all adaptations should fit the unique needs of each community (Fletcher et al., 2017; Yao et al., 2018). For instance, if the aim is to reduce smoking rates among Indigenous youth, implementers may want the resources to integrate information on cultural uses of tobacco, depending on the community served (Taualii et al., 2010). Engaging with the target population can determine what types of adaptations that need to be made or if existing online mental health resources have been sufficiently adapted (Bowen et al., 2012; Christie et al., 2019; Povey et al., 2016; Raghupathy & Forth, 2012).

Long-term assessments suggest that culturally adapted resources may be more effective in reducing psychological distress and substance use than conventional ones (Povey et al., 2020; Peiris et al., 2019; Yao et al., 2018; Shepherd et al., 2015; Taualii et al., 2010). Despite efforts to develop more online mental health resources, there continues to be a lack of culturally relevant options (Bennet-Levy et al., 2017; Bird et al., 2017). One study found that male youth had the impression that culturally relevant information did not exist online (Fletcher et al., 2017).

The articles included in this narrative review also explored several types of adaptations. To make the resources more culturally relevant, many tended to make surface level adaptations, including the integration of cultural images and symbols such as feathers and drums, as well as music, language, and voices from the community (Bowen et al., 2012; Christie et al., 2019; Povey et al., 2016; Raghupathy & Forth, 2012; Taualii et al., 2010).

Deeper adaptations, such as those that integrate cultural teachings and cultural views on wellness, were not mentioned as often in the studies reviewed. Of the 16 studies included in this section, 6 mentioned adaptations that can be broadly defined as deep adaptations. These adaptations followed a ground-up approach by collaborating with Indigenous knowledge holders to identify and include culturally relevant information on mental health. Deep adaptations mentioned in this search included Indigenous cultural views on mental health, teaching of traditional Indigenous values on wellness, integrating Indigenous specific metaphors on mental health that resonate with Indigenous communities, and reinforcing cultural pride as a protective factor against future mental health related issues (Christer et al., 2019; Fletcher et al., 2017; Povey et al., 2020; Raghupathy & Forth, 2012; Shang et al., 2021; Shepherd et al., 2021).

Implementation of Online Mental Health Resources

Nine articles identified in this review provided insights on the implementation of online mental health resources. The implementation of online resources in Indigenous contexts may need to consider the specifics about its practicality, the advantages it provides, strategies to improve engagement and adherence to the resource, and sustainability.

In terms of practicality, staff may need to consider whether it is feasible to implement online mental health resources. In some communities, a lack of access to high-speed internet and electronic devices can impede the delivery (Puszka, et al., 2016; Raphiphatthana et al., 2020). When internet services are not readily available, implementers could consider the use of a text-based application or a smartphone application that can be downloaded at local internet hotspots and used at home (Fletcher et al., 2017; Titov et al., 2019).

A second consideration is to assess whether online resources can provide some advantages over in-person services. As mentioned above, online mental health resources can

increase access. Service providers using online mental health resources to supplement regular meetings with client may see a larger benefit to the implementation. Dingwall et al. (2015b) suggest that supplemental online mental health resources can increase client engagement and help build client and service provider relationships. However, strengths-based mental health resources designed to be used independently by youth may face different barriers. Povey et al. (2016) suggest that if youth do not believe that they have a mental health issue, it can be challenging to engage them. Online mental health resources may need to compete with other online and smartphone applications for the user's attention. Some youth who initially engage may not be motivated to regularly use online mental health resources, as intended by the application designers (Fletcher et al., 2017; Povey et al., 2016).

Applications can be expanded beyond simply providing information by integrating social elements and positive reinforcement, such as sharing progress with friends, or providing banner rewards and progress displays, to increase motivation for completion (Christie et al., 2019; Jongbloed et al., 2020; Peiris et al., 2019). The integration of cultural values and beliefs may also help to improve the uptake of online mental health resources. Fletcher et al. (2017) found that participants in their study engaged more with culturally relevant material. The value of cultural adaptation was also supported by Raphiphatthana et al. (2020) who suggested that service providers in Indigenous contexts are more likely to implement an online mental health resource if it meets the cultural needs of their clients. The cultural adaptation of these materials should aim to be specific to the contexts of Indigenous youth to improve their uptake.

Sustaining online mental health resources requires consideration. Funding for online health is limited and can be scarce in Indigenous health community organizations, especially in rural and remote areas (Gibson et al., 2011b; Jongbloed et al., 2020). Implementers need to

develop appropriate funding strategies to sustain the resources. Downloadable smartphone applications should aim to be free of charge and text-based resources should aim to cover the standard texting charges to encourage use and remove financial barriers (Bowen et al., 2012).

Outcomes of Online Mental Health Resources

Nine of the articles identified in this search evaluated the effectiveness of online mental health resources in Indigenous communities.

The articles reviewed suggests that online mental health resources can have a positive effect on symptoms of anxiety and depression, while teaching participants strategies to ask for help (Tighe et al., 2017; Titov et al., 2019). Some applications, such as those including elements of digital storytelling, can help youth focus on their positive attributes and may make youth feel more positive about themselves (Wexler et al., 2013). However, as mentioned previously, authors caution that online applications designed to be used independently may be less useful for youth experiencing psychosis or suicidal ideation (Shang et al., 2021; Tighe et al., 2017; Tighe et al., 2020). Youth who are at higher risk for self-harm will require follow-ups with professionals in addition to using online mental health resources.

Online mental health resources aiming to lower drug and alcohol use may have a more positive impact. Articles in this search suggests that online resources may be able to help reduce smoking rates and lower volume of alcohol consumed, while teaching youth about the negative effects of drugs (Bowen et al., 2012; Kypri et al., 2013; Taualii et al., 2010). Harm reductions strategies, such as lowering the frequency of substance use or level of consumption, are important outcomes to study because reaching complete abstinence may be a less attainable goal (Peiris et al., 2019). Peiris et al., (2019) also found that peer influence can deter the impact of these resources because seeing friends drink or smoke can persuade others to do the same.

Although online mental health resources can be effective, studies reviewed to date have limitations. Many of the studies had small sample sizes and many had issues with recruiting and retaining study participants, limiting the generalizability of their findings (Kypri et al., 2013; Peiris et al., 2019; Stephens et al., 2020; Tighe et al., 2017; Titov et al., 2019). The use of convenience sampling raises the possibility that higher functioning youth used the resource instead of the most at-risk. The lack of a control group in some studies means an inability to determine whether any observed effects are due to the online mental health resource (Stephens et al., 2020; Titov et al., 2019; Wexler et al., 2013). Some studies could not include measures such as depression and suicidal ideation scales or use laboratory drug measures because partnered communities deemed these measures to be culturally inappropriate (Kypri et al., 2013; Wexler et al., 2013). However, not including these measures in some studies may make it difficult to discern the impact of online mental health resources.

Discussion

The results from this narrative review confirm that online mental health resources for Indigenous youth are a viable avenue for mental health delivery in Indigenous communities. The findings of this review suggest that video conferencing, web-based applications, and mental health applications may positively impact mental health functioning. The introduction of the internet and technology into mental health services can 1) provide Indigenous youth with access to mental health resources and 2) supplement regular mental health interventions.

This review has highlighted the distinct types of online mental health resources and their target audience. The resources identified can be considered in terms of the three levels of prevention: 1) primary prevention for strengths-based resources designed for all Indigenous youth; 2) secondary prevention for resources designed for at-risk youth; and 3) tertiary

prevention designed to help youth who may already have an ongoing mental health issue. Most of the online mental health resources identified in this study were designed for primary prevention. Primary prevention resources should not require staff to implement them. However, tertiary prevention resources might be best used with trained staff.

Evidence-based and culturally relevant online mental health resources for Indigenous youth are in short supply and are needed (Mushquash et al., 2019). Resources designed for Indigenous communities can adopt a culturally grounded approach or incorporate Indigenous specific content to ensure that cultural values and worldviews are present (Mushquash et al., 2019). Cultural adaptation of online mental health resources can improve the fit with specific cultures and community contexts. This requires in-depth knowledge of the needs of the community. The online mental health resources identified in this study consulted key community members to inform their adaptation process; this included youth who would be potential users of the resource and practitioners with experience implementing online mental health resources.

The cultural adaptation process has some challenges. A systematic review and meta-analysis conducted by Balci et al. (2022) found that culturally adapted online mental health resources – including those designed for Indigenous youth – had an insignificant impact compared to conventional ones. Their review suggest that the cultural adaptation process is not recommended for online mental health resources, given the considerable time required. However, this finding, clashes with Mushquash et al. (2019) which suggests that online mental health resources in Indigenous communities should be culturally driven, incorporating traditional teachings, holistic approaches, and targeted to meet the specific needs of the community. Although more research is required to better understand the cultural adaptation of conventional resources, the cultural adaptation process may be important for Indigenous populations

independent of a potential insignificant impact. Given the history of cultural suppression, culture is a salient issue for Indigenous communities. Questions and challenges will undoubtedly arise; however, cultural adaptation can provide a degree of face validity and Indigenous communities may show an appreciation for culturally adapted materials.

In the literature on cultural adaptation, a distinction is made between surface and deeper types of adaptations. As I wrote in the results section, deeper adaptations were not mentioned as frequently as surface level adaptations. However, some of what is considered surface adaptation may have deeper implications. For instance, in consultation with youth from the community, Bowen et al. (2012) conducted a cultural adaptation that involved multiple components of their web-based resource. One adaptation mentioned in their study was to change a scenario from a shopping center to a powwow. Using broadly defined criteria, this adaptation might be viewed as a surface level adaptation. However, this surface adaptation may change how users relate to the resource, including their sense of familiarity and identification. The differences between surface and deep adaptation may have some overlap and can depend on the cultural meaning of specific changes and how the user construes the adaptation.

Not all Indigenous communities can adapt materials to the same level. Histories of cultural suppression have left some Indigenous communities with less readily available traditional cultural or linguistic knowledge than others. What counts as culture also may be a complicated issue for communities because it is not just about what historically counts as culture, but what has been preserved and is currently valued or being revitalized. Indeed, each community has unique cultural characteristics, but scaling-up the delivery of online resources may require a generic cultural adaptation that may be useful for many Indigenous communities. “Pan-Indigenous” identity, based on recognizing shared traditions, knowledge, symbols, and

practices, raises important questions about the ways that youth and others can engage with culture to strengthen their sense of identity. The challenge remains effectively incorporating diversity and intersectionality into the resource. Global definitions of Indigenous identity are starting to emerge online and can provide a framework for such an adaptation.

The articles reviewed in this study have implications for future research. The development, implementation, and evaluation of the online mental health resources have been researched with numerous methodologies. Studies on community perspectives, resource development, and staff training have employed qualitative methods. Some of the studies on the implementation of online resources employed qualitative methods, but the largest number of studies used mixed-methods. Many online mental health resource outcome studies have used quantitative methods. This variation in methodologies reflects the objectives of each study. At the development stages, the objective is often exploratory and aims to gather data on how to improve the design and training of the resource. As well, at this initial stage, it may be difficult to gather data from enough participants to conduct quantitative analyses. For implementation and outcome studies, quantitative data, such as pre-post surveys and completion data, can be beneficial to determine the effectiveness of the intervention.

Limitations of Online Mental Health Resources

Despite their promise, this review identified several prominent issues in the development and implementation of online mental health resources for Indigenous youth. The digital divide remains a persistent issue (Mitchell et al., 2019; Ramsetty & Adams, 2020; Robotham et al., 2016). Many of the articles included in the narrative review reported a lack of access to high-speed internet, which will remain a problem for rural and remote Indigenous communities

looking to implement online mental health resources. There is concern that rural and remote parts of Canada may not have access to high-speed internet until at least 2030 (ISEDC, 2019).

One consistent finding from this study is that youth have difficulties completing or finishing online mental health resources. This finding challenges the usual reasoning that a large number of youth are digitally literate and spend a sizable portion of their day on electronic devices, and therefore online resources are a potential avenue for teaching youth about mental health (Boydell et al., 2014; Burns et al., 2010; Burns et al., 2016). Youth may be more interested in using devices for social media applications or games. Further research is needed to clarify the factors that influence youths' uptake and adherence to online mental health resources.

Another issue is the maintenance of these online mental health resources. If these resources are to remain available for download on mobile devices, then developers need to update and maintain the application to match the new developments in mental health and changes in popular culture that may affect uptake. There is also an issue with using advertising to subsidize online resources once program funding ends. Strategies for the sustainability of these resources and ways to extend their reach to youth will require further study.

Limitations of this search

This study had several limitations. I did not review unpublished studies or gray literature. Online mental health resources, especially in Indigenous communities, are an emerging field and terminology for some types of resources is not settled and, therefore, some relevant studies may have been missed in the review. Given the broad scope of online mental health promotion, it may be difficult to identify exactly what counts as online mental health resources. This review followed protocols used by previous reviews on this topic. However, future reviews on this topic may consider widening the range of online resources included as the field continues to grow.

Another issue was the age range for the study. This study originally set out to identify resources geared towards Indigenous youth aged 12-25. However, multiple studies mentioned issues recruiting youth, and had to extend their age range to 35 to increase the sample size of their study. This review did the same and extended the age range to 35 to include these articles.

This study meant to examine online mental health resources designed for Indigenous youth, but not every study included in this review conducted research with participants between the ages of 12-35. Some of the research in these studies was conducted with older members of an Indigenous population or with service providers who have experience in the design, implementation, or training of online mental health resources. Therefore, this study cannot generalize how all Indigenous youth will respond to online mental health resources. Future research should aim to incorporate more youth-centered perspectives into their work, because youth perspectives can improve the design and implementation of these resources.

The articles in this review were limited to publications in English and all came from Canada, Australia, New Zealand, or the United States. However, the search terms for this narrative review were Canadian specific and studies that were only indexed by terms not used in Canada (e.g., Māori) may have been unintentionally excluded from this study. Despite the diverse experiences of Indigenous peoples globally, the results of this review suggest some important commonalities in Indigenous online mental health resources, including the potential for positive impact, the importance of cultural adaptation, and specific challenges to access due to limited infrastructure for internet and electronic devices.

Finally, not all the articles in this review provided a comprehensive account of all the steps undertaken to develop, implement, adapt, and evaluate online mental health resources.

Studies typically focused on one or two components. Some additional data might be obtained by contacting researchers directly.

Conclusion

This study focused on online mental health resources for youth in Indigenous communities and provided an overview of the current development, implementation, and evaluation issues. By building off the previous work of Mushquash et al. (2019), Spanhel et al., (2021), and Toombs et al. (2020), this study was able to critically examine the process of cultural adaption for online mental health resources and suggest that the benefit of cultural adaptation, specifically in Indigenous communities, may be worth the resources, time, and challenges.

In addition, I found that the adaptation of the online mental health resources is necessary to increase engagement and can have unintended positive outcomes. Their implementation is feasible, but internet access and access to electronic devices needs improvement. Although the findings from this study suggest that online mental health resources can have a positive impact, there are several diverse types of mental health resources that exist. Future research may need to independently evaluate these types of resources to understand the effectiveness of each.

Online mental health resources are an emerging field that has been accelerated by the public restrictions in response to the COVID-19 pandemic. These circumstances have also been speeding up the establishment of high-speed internet connections in rural areas. The pandemic has likely influenced the delivery of online mental health resources, but the time frame of my search meant I was not able to identify studies that have examined how mental health resources have adapted to COVID-19 regulations. As new studies are published in academic journals, future searches on this topic will be beneficial to determine the state of online mental health resources in Indigenous communities.

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Bridge

The narrative review identified the most recent articles on online mental health resources. I highlighted the several components involved in online mental health resources, including identifying community perspectives on online mental health resources; training staff to use them; the cultural adaptation process; the implementation process; and how the resources are evaluated. Most of the articles in this review (16/33) suggest that cultural adaptation is necessary component of online mental health resources. Questions remain about what exactly cultural adaptation means to researchers, services providers, and community members. For instance, no articles in this narrative review mentioned the notion of culture as treatment. Culture as treatment suggests that the learning culture, itself, is a form of treatment that has its own contribution to Indigenous Peoples' mental health. In the context of mental health resources developed for Indigenous populations, it is important to ask what is meant by cultural adaptation. For example, the cultural adaptation of materials could be a way to mobilize culture as treatment.

The Listening to One Another (LTOA) program provided an opportunity to collect data on the meanings of culture as treatment. LTOA is a 14-session mental health promotion program designed for Indigenous youth and their families living in Canada. Each session of the LTOA program is culturally adapted by a team of local program implementers and Elders to ensure the program fits the local setting. I conducted individual interviews with 11 program implementers who have experience with the LTOA program. The second paper in thesis sheds light on the relation between cultural adaptation and culture as treatment as perceived by LTOA program implementers.

Culture as treatment: Exploring the role of cultural adaptation in a mental health promotion program for Indigenous youth and their families.

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Abstract

In conventional settings, culturally adapted mental health programs consider the language, culture, and context of the program participants. In Indigenous settings, cultural adaptation may also be used to preserve culture, teach traditional healing practices, and affirm identity. Given these added benefits, it is possible cultural adaptation in Indigenous contexts can overlap with "culture as treatment," the notion that strengthening and restoring cultural knowledge, traditional beliefs, and identity can have preventive or curative effects on mental health related problems. Complexities about what counts as culture and the balancing of fit and fidelity may be a challenge. This study set out to better understand how culture as treatment can have implications for cultural adaptation and fit and fidelity. I conducted interviews with 11 LTOA program implementers who have experience implementing culturally relevant mental health programs. Results obtained through thematic analysis demonstrate that integrating culture into programs can itself be a mechanism for healing. Program implementers put particular emphasis on preserving culture, traditional forms of healing, building culturally safe spaces, and learning about culture as a form of healing. While the cultural adaptation process can be difficult, program implementers appreciated the flexibility for making program materials adaptable. Areas for future research on culture as treatment are discussed.

Keywords: culture as treatment; cultural adaptation; Indigenous Populations; mental health

Introduction

Globally, many Indigenous populations are actively engaged in revitalizing their languages and cultures. As many communities have endured health inequities, which are often traced back to the effects of colonialism and cultural oppression, the revitalization of languages and culture may provide an avenue for healing (Adelson, 2005; Greenwood et al., 2018; Stephens et al., 2005). Recognizing the importance of this history, culturally-based mental health programs are widely endorsed to improve mental health and wellness in Indigenous communities (Bigfoot & Schmidt, 2010; Kirmayer et al., 2016; Snowshoe et al., 2017). The purpose of integrating cultural elements into mental health programs for Indigenous populations is to strengthen cultural continuity and identity in ways that can counteract the experience of cultural loss or disconnection (Chandler & Lalonde, 1998; Chandler & Lalonde, 2009; Stewart, 2013). For Indigenous Peoples, the restoration of culture, language, and land-based practices are seen as crucial to individual and collective well-being as other forms of strengths-based mental health promotion (Kirmayer et al., 2003; Wexler, 2009). In this paper, I will explore ways that the integration of local culture into a mental health program can, itself, be a mechanism for healing.

Implementation of Culture as Treatment

The mobilization of culture as a resource for mental health and healing has sometimes been referred to as "culture as treatment." For example, Brady (1995) and Gone and Calf Looking (2011) have used culture as treatment to refer to the notion that strengthening and restoring cultural knowledge, traditional beliefs, and identity can have a preventive or curative effect on mental health related problems. Notions of culture as treatment can operate on an individual or collective level. Culture as treatment can build cultural knowledge for individuals within the community, while also collectively strengthening the community's cultural

connection. While this study is focused on the individual level, the individual and collective levels are connected in several ways. For example, issues plaguing individuals, such as suicide and drug use, could be due to a lack of cultural identity and cultural knowledge within the community and may require social change that can be achieved through a process of cultural revitalization (Barker et al., 2017; McCabe, 2007). Mobilizing culture as treatment can provide individuals with an opportunity to develop their cultural identity and cultural knowledge. Once a sizable number of individuals within the community have sufficient cultural knowledge, it would, in theory, be passed down and shared naturally, potentially lowering the rates of individual mental health issues.

The key idea is that, for both the individual and the collective, the process of learning about culture itself is part of the healing process that combats the negative effects of loss/taking of cultural knowledge and identity. Reconnecting with culture and tradition then becomes an important path to well-being. This reconnection can be achieved through culturally based or grounded interventions that engage participants in teachings and practices that are rooted in local cultural knowledge, values, and way of life. Conventional western evidenced-based programs that have been adapted to Indigenous cultures can be one way to mobilize culture as treatment (Brady, 1995; Gone & Calf Looking, 2015).

A few prominent issues about culture as treatment need clarification. One, culture as treatment – in this context – is not simply about traditional forms of healing, but about how the process of revitalizing culture in Indigenous communities can be a form of treatment in itself (Brady, 1995; Duran & Duran, 1995; Gone & Calf Looking, 2015). Two, a distinction needs to be made between cure and healing. In this context, cure implies that the wound is a lack of culture and providing a significant dose of culture would heal the wound. Healing implies that by

engaging in culture, individuals can go on a healing journey, and is a more process-oriented approach. Learning culture can offer protective factors that improve mental health over time, but does not necessarily lead to a complete elimination of all mental health symptoms.

The literature on culture as treatment has raised several important issues: 1) although restoration of culture directly addresses culture loss, it may be difficult to determine whether interventions that subscribe to culture as a treatment models of health promotion have an impact on the mental health of individuals; 2) while traditional forms of healing are important aspects of culture, it remains unclear whether and how specifically traditional forms of healing can improve mental health functioning; and 3) under what circumstances is it good practice to implement programs that have not undergone a systematic evaluation (Brady, 1995; Weibel-Orlando, 1989)? Duran and Duran (1995) note that these concerns do not derive directly from Indigenous communities, but from some non-Indigenous clinicians and researchers who express skepticism about the evidence for beneficial outcomes of culture as treatment. Many Indigenous healing practices have not been formally documented in research, in part due to concerns about appropriation and misuse of cultural knowledge that is considered sacred (Struthers et al., 2004). While some researchers have recognized that empirical evidence on the effectiveness of culture as treatment would be useful, Gone and Calf Looking (2011) have noted that a lack of funding opportunities has impeded such research. Furthermore, methodological limitations and narrow definitions of scientific evidence may have prevented some research on culture as treatment therapy from being published in scientific journals (Gone & Calf Looking, 2011).

Cultural Adaptation of Evidenced-Based Programs

Despite concerns about the evidence for culture as treatment, many clinicians, Indigenous scholars, and practitioners have suggested that conventional therapeutic practices may not be

appropriate for Indigenous populations (Stewart, 2013; Vicary & Bishop, 2005). Some of the values that underlie conventional practices may conflict with Indigenous paradigms of wellness (Barker et al., 2017), and conventional practices may not address the specific experiences of racism and marginalization experienced by Indigenous groups (Morrissette, 2003). Indigenous mental health programs may focus more specifically on strengthening Indigenous identity because positive identification with cultural identity has been related to improved well-being among Indigenous youth (Burack et al., 2014; Kirmayer et al., 2011; Williams et al., 2018). Indigenous youth may also recognize the potential of using Indigenous approaches to wellness. For instance, in a study of 99 First Nations students enrolled in post-secondary institutions, Wyrostok and Paulson (2000) found that the youth valued culture to build cultural identity and as a form of healing.

Culturally adapted evidenced-based programs can be one strategy to mobilize culture as treatment models of healing. Cultural adaptation involves the modification of an evidence-based treatment program to integrate the language, culture, context, and values of the targeted population (Bernal et al., 2009). In Indigenous contexts, this approach typically involves culturally adapting a program that has proven effective in non-Indigenous settings, with the expectation that integrating cultural activities will improve the fit of the program and that the adaptations will not reduce program effectiveness (BigFoot & Schmidt, 2010; Crooks et al., 2018; Ivanich et al., 2020).

These types of adaptations are often described as surface adaptations and deep adaptations. Surface adaptations typically include adaptations to appearance, language, stories, inclusion of people from the target population, and the inclusion of familiar cultural events and settings (Resnicow et al., 2000). Deep adaptations typically include the integration of cultural,

social, and historical factors that influence health (Resnicow et al., 2000). The difference also applies to the ways in which language, images, and examples are presented, and the underlying message of their inclusion. Adaptations in Indigenous contexts may include, but are not limited to, surface adaptations of program language and stories as well as deeper adaptations to integrate specific cultural knowledge, values, and practices (Gomez Cardona et al., 2021a; Vincze et al., 2021).

Cultural adaptation can also be characterized in terms of the process of adaptation itself, including how decisions about adaptations were made; who made the adaptations; what elements of the original program were modified; the goal of the modification; and whether modifications are consistent with program goals and objectives (Stirman et al., 2019). Another option would be to develop a culturally grounded program that prioritizes Indigenous cultural healing practices, values, and belief systems (Okamoto, et al., 2014a; Walters et al., 2020). Compared to developing culturally grounded programs, culturally adapted programs may be less resource intensive and faster to implement (Holleran Steiker et al., 2008; Ivanich et al., 2020; Okamoto et al., 2014b).

Program adaptation, however, is not a simple process. Adapting program content requires extensive knowledge of both the unique social issues and the cultural teachings of the targeted population, as well as a deep understanding of the intervention being adapted (Marsiglia & Booth, 2015). Even with this knowledge, persistent challenges are found in identifying appropriate cultural adaptation strategies, attempts to distinguish essential elements of culture from ethnicity, and the potential loss of program effectiveness due to changes in crucial elements (Castro et al., 2010). In some Indigenous communities, historical disruptions in the transmission of cultural knowledge may make it difficult to identify individuals with the necessary cultural

knowledge to adapt evidence-based programs. Moreover, Indigenous culture varies across communities, even within the same linguistic group. Operating within this cultural-adaptation framework requires specific attention to the local history and cultural practices of each community (Maher, 1999).

Fit and Fidelity in Evidenced Based Programs

Considering these challenges, program adaptations need to find a balance between cultural *fit* and program *fidelity* to maximize effectiveness. Fit refers to the degree a program is suited to match the local culture by including cultural relevant material and removing cultural mismatches, whereas fidelity refers to adhering to the theoretical foundations of a program and maintaining crucial elements that are necessary for program efficacy (Castro et al., 2004; Castro & Yasui, 2017; Elliott & Mihalic, 2004). While some researchers have argued that strict adherence to program guidelines is essential to ensure program effectiveness, others have suggested that program flexibility, that allows communities to make adaptations, can facilitate successful implementation (Bopp et al., 2013; Chambless & Ollendick, 2001; Durlak & DuPre, 2008; Kendall & Frank, 2018). Program fit has recently received more attention because some evidence suggests that incorporating local cultural values and traditions can increase program uptake and ease the implementation process (Crooks et al., 2015; Kumpfer et al., 2008). Even with manualized interventions, some researchers have argued that there can be no successful implementation without adaptation (Lyon & Bruns, 2019; Perera et al., 2020).

The effort to balance fit and fidelity is usually weighed in terms of two sets of issues: 1) improving program acceptability and accessibility and 2) maintaining connections to underlying social and psychological processes assumed to account for the efficacy of the program (McHugh

et al., 2009; Zayas et al., 2012). For Indigenous communities, a third component may be that adapting a program to local culture is itself a mechanism for healing for the community.

Questions about Culture as Treatment

Based on the current state of the literature of culture as treatment and its deployment in mental health programs, several questions remain. For one, little is known about how Indigenous communities consider culture as treatment. There is also little work that examines how Indigenous communities understand cultural adaptation when considering issues of fit and fidelity. Addressing these research gaps may identify strategies for the mobilization of culture as treatment and may improve strategies for culturally adapting mental health promotion materials. To better understand the interplay between culture as treatment, cultural adaptation, and fit and fidelity, program implementers[1] involved with *Listening to One Another* (LTOA) were interviewed.

Listening to One Another to Grow Strong

Listening to One Another is a culturally adapted mental health promotion program that aims to enhance the psychological, social, and emotional well-being among Indigenous youth, their families, and their communities. The program consists of 14 weekly sessions designed for Indigenous youth and their caregivers and is delivered by a team of local Elders and program implementers. LTOA was developed in partnership with Indigenous communities across Canada and is based on an earlier Ojibwe adaptation of the *Strengthening Families Program* (SFP) (Kirmayer et al., 2016).

[1] By program implementers, I am referring to LTOA partners who are involved in the aspects of program implementation, such as program adaptation, program facilitation, and program administration.

In its original conception, SFP was designed to reduce levels of youth crime, drug use, and child abuse for families in the United States, through a program aimed at building peer and family communication, improving family interactions, understanding emotions, problem solving, resisting peer pressure, handling anger, learning to asking for help, and adequate parenting skills (Kumpfer et al., 1996). After the SFP program demonstrated a positive effect to lower drug rates and improve parenting skills for American families, culturally relevant versions of the program were implemented and the positive effects were replicated (Kumpfer et al., 2008). Since then, the program has been culturally adapted and implemented on a larger scale, to fit the cultural context of multiple ethnic populations, including Indigenous Populations (de Menezes & Murta, 2020; Kumpfer et al., 2008). For example, SFP was adapted to Ojibwe culture, which included the integration of Ojibwe language, cultural strengths, and teachings to increase program effectiveness and improve participant retention (Ivanich et al., 2020; Whitbeck et al., 2012). The program integrated cultural components at both the surface level such as language, stories, and context, as well as deeper components such as traditional ways of healing and cultural understandings of wellness (Ivanich et al., 2020). LTOA builds on the foundation of the Ojibwe adaptation and has been implemented in Indigenous communities across Canada. A unique feature of LTOA is that each First Nation is encouraged to adapt the program to their local culture and context, integrating their own language and stories, as well as each community's understanding of wellness.

The LTOA central team, based at the Culture and Mental Health Research Unit of the Lady Davis Institute, offers support for First Nation partnered communities across Canada. Engagement typically begins with interested communities reaching out to the LTOA national coordinator. The LTOA central team then offers program materials, guidance on cultural

adaptation, and training on program delivery. Each community oversees the entire implementation process, from the cultural adaptation of program materials to recruitment of program attendees[2] and delivery of the program. The LTOA program is guided by a framework based on the principle of Two-Eyed Seeing, developed by Mi'kmaq Elders Albert and Murdena Marshall, that aims to bridge western science and Indigenous knowledge to inform Indigenous health programs (Bartlett et al., 2012; Marshall et al., 2015). A voluntary research and quality assurance component is also offered to allow interested community partners to evaluate program implementation and outcomes. As part of sustainability, the LTOA central team also aims to create a community of practice by linking partnered Indigenous communities to each other to share experiences of cultural adaptation, facilitation skills, and implementation and recruitment strategies, among others.

Implementation activities for the LTOA program were impacted by public health COVID-19 safety measures put into effect in March 2020. Delivery of the program with groups of families or in schools has not been feasible during the pandemic. Strategies for program evaluation were also impacted. For instance, this research study was originally meant to explore the implementation of the LTOA school-based program. The constant closing and reopening of schools in addition to school staff feeling overwhelmed by the changing environment meant that past evaluation strategies were no longer feasible. Conversations were held with community partners to discuss the feasibility of delivering programming online. However, many stated that a lack of access to technology and stable internet connections would be a barrier to online

[2] While "program participant" is typically the word used in LTOA's practice, differentiating program participants from study participants in this manuscript became confusing. Program attendees refer exclusively to community members who take part in the program. Participants will be used exclusively to refer to program implementers who participated in this study.

implementation because technology and internet connections are luxuries that are not available to all members of their communities. An alternative strategy suggested by LTOA community partners was to take the Tree of Life Activity, a central component of the program, and turn it into a self-guided workbook that could be completed in the homes of Indigenous youth.

The Tree of Life, an activity specific to the LTOA adaptation of SFP made by Indigenous communities in Canada, is included in every session of the full LTOA program. At the end of each session, program attendees draw a different part of the tree and incorporate a teaching related to the session's theme and activities. This component of the program builds on a technique used in narrative therapy which helps program attendees to create and visualize a story of their process towards learning positive mental health skills (Etchison & Kleist, 2000). Distinct parts of the tree are given specific meaning: the roots of the tree symbolize community history and culture; the trunk symbolizes individual strengths and skills; the branches symbolize interpersonal skills; and the leaves and fruits symbolize hopes for the future. By drawing the roots, trunk, branches, and leaves of their trees, program attendees can visualize their growth through a range of individual and family strengths.

To produce a workbook that can be self-guided, the Tree of Life activity required some adaptation to better fit the home setting, as well as adding more explanation and information about the program materials that is usually provided by program implementers. To develop this workbook, I conducted focused literature reviews on topics related to each activity including balancing emotions, problem solving skills, effective communication skills, refusal skills, empathy and compassion, bullying and cyber-bullying, trust and trust-building behaviours, and effective goal setting. Input from LTOA program implementers was integrated throughout the development process. I held discussions with community partners to refine the workbook.

Although the workbook has updated information and is informed by community partners, the expectation is still that each participating Indigenous community implementing the workbook will further adapt it to their local culture. As the workbook is meant to be adapted to incorporate local culture, the process of development offered an opportunity to discuss topics of culture as treatment and cultural adaptation with program implementers.

Research Objectives and Research Questions

The objective of this study was to better understand how Indigenous program partners involved in a mental health promotion program understand and use concepts of culture as treatment, cultural adaptation, and balancing fit and fidelity. Specifically, I sought to answer the following research question: "How do program implementers understand the role of community, connections, and culture in the Listening to One Another program?" The research interviews explored the following topics:

1. How do program implementers understand concepts of culture as treatment?
2. What were the main objectives and intended outcomes in conducting cultural adaptation?
3. What were some barriers and facilitators to the cultural adaptation of program materials?
4. How did program implementers balance fit and fidelity?

Ethics

The data collection for this study was conducted as part of an ongoing Indigenous mental health promotion research project approved by Research Ethics Committee (REC) of the CIUSS du Centre Ouest-de-l'Île-de Montréal. Due to the restrictions of COVID-19, evaluation strategies, the research protocol, and consent forms were modified to follow the remote research and remote consent protocols by the REC. To increase protection of the privacy of participants in

this study, all the interviews were conducted using a version of Zoom Pro or over the phone. Changes to the protocol were approved by the IRB through an amendment.

Given the low-risk nature of this study, no major concerns were raised about confidentiality between the research team and the participants. Participants were told that they were at liberty to drop out of the study at any moment, without concern over how it would affect their role in the LTOA program.

Methods

Design and Interview. Qualitative description was used to explore and understand how a distinct group of people understand a phenomenon (Bradshaw et al., 2017). In this case, the focus was on how program implementers understood the concepts of culture and culture as treatment in the LTOA program.

Participants. LTOA program implementers from Indigenous communities across Canada were best suited to provide the explicit knowledge required for this study. Purposive sampling was used to select the program implementers from the LTOA program who had experience implementing and culturally adapting components of the program. Out of the 15 program implementers who were invited to participate, 11 expressed interest in participating. The $N = 11$ participants in this study had between 1 to 10 years of experience (average of 3.5 years) delivering or adapting the LTOA program in their region. The program implementers were from five different Indigenous health organizations: two in Nova Scotia, two in British Columbia, and one in Ontario. Participants in this study were between 25-50 years of age.

Study interviews were conducted over the course of six months, from December 2020 to May 2021. Interviews ranged between 45 to 90 minutes. The data were analyzed continuously

throughout the data collection process, and recruitment ended when there was evidence of saturation in thematic analysis. None of the 11 participants withdrew from the study.

I had met LTOA program implementers over the course of my Master's degree (2019-2022) and during my time as a research assistant on the LTOA program (2018-2019). I had met some through program trainings where I travelled with the LTOA National Coordinator to local Indigenous health organizations interested in implementing the program. The Project Principal Investigator introduced me to the rest of the LTOA implementers during yearly team meetings held in Montreal, attended by program implementers from across Canada.

Interview. Semi-structured interviews were used to conduct an in-depth exploration of each participant's viewpoint on the research questions (Barriball & While, 1994; DiCicco-Bloom & Crabtree, 2006; Green & Thorogood, 2018). The Tree of Life workbook was used to better explore the research questions of this study. Semi-structured interviews began with introductions to learn each participant's role within their respective organization and their experience with culturally adapting mental health program materials. The participants were asked what components of the Tree of Life activity require cultural adaptation; how decisions about cultural adaptations are made; how cultural teachings get integrated into program materials; and what their main goals were when culturally adapting program materials. While fit and fidelity are important aspects of adaptation, this technical language was not used during the interviews. Accordingly, explicit mention of fit and fidelity was left to be secondary probes to see if these topics came up unprompted in conversations.

Procedure. Recruitment was conducted online and began with an email invitation to each program implementer to find a time that worked best for them to participate and whether they preferred conducting the interview over Zoom Pro or over the phone. Once the date for the

meeting was confirmed, consent forms were emailed to the program implementers. To ensure that program participants understood the research activities, the consent forms were read to the participants, who were encouraged to ask questions before consenting to the study. All the participants granted permission for the consent procedures and the interviews to be audio-recorded. Questions and probes were continuously added throughout the interview process to explore important viewpoints and emerging themes. All the participants received a $20.00 gift card for participating in the study.

Data Analysis

All the interviews were transcribed verbatim. Thematic analysis was used to identify data related to the research question and objectives, and to generate themes from the data (Braun & Clarke, 2006; Braun & Clarke, 2021; Green & Thorogood, 2018; Terry et al., 2017). Using NVivo 12, the thematic analysis process followed the step-by-step guide outlined by Braun and Clarke (2006). To proceed through these steps, I first familiarized myself with the data by reading all the transcripts in Microsoft Word, highlighting potentially relevant passages, and taking notes to identify emergent themes across participants. Second, I worked systematically through the transcript by importing the Word documents into NVivo 12 and organizing the content from the transcripts into codes. Third, I reviewed the codes that I identified using NVivo 12 and started to conceptualize, organize, and group them into initial themes. Fourth, I further refined and merged themes to ensure each had their own unique set of codes. Fifth, I organized the themes to answer the research questions. Sixth, I synthesized the findings that emerged from my analysis and related the findings to the literature of culture as treatment and cultural adaptation.

Results

This section describes the LTOA program implementers' views on the role of culture in the LTOA program, strategies used for incorporating cultural teachings into mental health programs, and challenges of balancing program fit and fidelity. Results are organized by themes identified in the data collected from interviews with 11 participants.

What counts as culture?

One focus during data analysis was on how participants used the concept of culture during the interviews. Although not an explicit topic in the interview guide, notions of what counts as culture emerged in all the interviews. While no clear definition of culture was provided by participants, the themes that emerged can be divided into four categories: 1) language (n = 11); 2) stories/histories (n = 11); 3) land-based activities (n = 7); and 4) spirituality/beliefs (n = 4). These four categories had specific meanings related to the context of these discussions. When talking about language, participants often talked about incorporating words in the program materials so that youth could start to learn their traditional language. Stories and histories referred to learning about the origins of the community, including creation stories, community history, and traditional teachings. Although the specifics of land-based activities varied, the central theme was about revitalizing traditional forms of learning that took place on the land and how being on the land itself served as a form of healing. Spirituality and beliefs were only brought up by a few participants who did not go into much detail but made references to the importance of connecting to spirituality and beliefs within their community.

Despite conducting this study with different Indigenous communities across Canada, participants held similar views about what counts as culture. Many program implementers saw the integration of language and stories as useful introductions to each community's culture.

However, one word of caution is that the participants were involved in the initial adaptations to the program manuals. Therefore, they may have focused more on descriptions of culture and cultural activities that could be integrated into LTOA, than would have participants not familiar with the program. For instance, language and stories are facets of culture built into the program. Given that the basis for LTOA was a version of the Strengthening Families program adapted to Anishinaabe culture, new LTOA Indigenous community partners received this Anishinaabe version of the program. This version included Anishinaabe language and stories to give new partners an idea about how they could adapt the program to their own culture and context. New program partners typically focused on adapting the Anishinaabe language and stories to reflect those of their own community.

While other components such as land-based activities and Indigenous spirituality were welcome additions to the LTOA program, such notions of culture were not explicitly mentioned in program materials. As a result, the participants may not have been less likely to consider those elements during their adaptation process, which, in turn, could mean that these components would come up less frequently in discussions than language and stories. Given this lack of prompting by the program itself, the mention of these elements may be especially significant.

Culture as Treatment

How did culture as treatment emerge in discussions?

The participants were not explicitly asked for their viewpoints about culture as treatment. Questions in the interviews concerned how culture can be integrated into a mental health promotion workbook such as the Tree of Life and whether cultural teachings are important in mental health programs. Comments related to culture as healing came directly from the participants when talking about the significance of cultural components in programming.

The participants often spoke about the impacts of culture loss, stating "a lot of people in my community are heavily impacted in terms of loss of language, loss of culture" (*Program Implementer, NS*). Based on their work in communities, the participants highlighted that youth often struggle with mental health issues due to the loss of culture, language, and identity.

> Many have lost their culture, their language, their identity, and they are trying to cope in different ways, and they resorted to alcohol and drugs to fill that void and feeling from a loss of language and identity. (*Program Implementer, NS*).

When reflecting on the loss of culture within their communities, some of the participants considered what the state of health in the community would be if their culture had never been disrupted. As one participant stated: "if we had our cultural identity, that was forcibly removed from us, we might be in a different situation than we are today" (*Program Implementer, NS*). Many other participants also suggested that issues faced in communities would not be as prevalent had cultural continuity remained intact.

To improve mental health functioning in their communities, the participants noted that youth needed to feel a sense of belonging to their cultural roots and their community. According to the participants, having Indigenous youth learn their identity as an Indigenous People could increase their sense of belonging and strengthen their cultural identity. The participants noted that Indigenous youth have a desire to learn about their culture and to engage in cultural activities, but that Indigenous communities may not have the necessary resources available to teach them about their culture. These discussions suggest that the loss of cultural identity increases the difficulty of supporting Indigenous youth to learn their culture, and ultimately to further loss of cultural identity in the community.

Many of the participants observed that cultural teachings were traditionally passed down through informal conversations and storytelling between older and younger generations. Some of the participants gave specific examples about how cultural suppression experienced in residential schools disrupted the transmission of culture from one generation to the next. For instance, when talking about residential school survivors, one participant elaborated, "a lot of the time, [our grandparents] were beaten for speaking their language, so why would they teach it to their children" (*Program Implementer, BC*).

Many participants expressed concern that without transgenerational continuity the knowledge and stories of older generations will eventually all be lost. As one participant eloquently explained:

> Eventually, somebody is going to stop sharing those stories and all of those stories will be lost. And like Albert Marshall says, for every Elder that dies, it's like a whole library set on fire. And you'll never get those books back and you'll never recover what was written in those books. So how can we incorporate our Elders, incorporate their stories, so that is becomes everyday language, everyday life. (*Program Implementer, NS*).

The participants in this study agreed that embedding traditional stories and other stories from Elders in programs such as LTOA can increase cultural knowledge of individuals and communities. They concurred that the goal of preserving culture is to pass down the wealth of knowledge held by Elders to build a sense of cultural identity among youth in the community.

Preserving Culture

The participants clearly valued their culture and saw a need to protect it. They noted that preserving and protecting culture requires reintegrating cultural teachings into the lives of Indigenous youth. In this context, the intended goal of transgenerational continuity is to

revitalize cultural teachings and their traditional ways of life. However, this reintegration process is challenging because sharing of stories and teachings has decreased over the years:

> The creation stories we would hear as kids embedded some of that knowledge with us. But somewhere along the way that has shifted, and no one really knows the creation stories anymore. So, weaving and bringing those values and stories into our lives is important for us (*Program Implementer, NS*).

To combat cultural loss and strengthen cultural knowledge and identity in the communities, participants expressed the importance of programs, such as LTOA to provide cultural teachings as a way for program attendees "to learn about themselves" (*Program Implementer, ON*).

Two ways of preserving culture were seen as important components of culture as treatment. One, teaching culture to youth was seen as a way of healing, as several noted that learning aspects of one's culture can play a role in improving their mental health, as explained by one participant: "I would say the healing piece is a closure to the loss of culture because regaining it is a big healing piece of that trauma for their mental health" (*Program Implementer, BC*). Two, the process of sharing culture was thought to provide healing. For example, some participants mentioned that when Elders were able to freely share their culture this provided a space for healing for everyone present. One participant expanded on this point and explained: "there is a healing aspect that came from when you saw those children who didn't get their language to change from that" (*Program Implementer, BC*)

The participants also touched upon the sense of building pride in sharing and learning their culture:

> All the tools that they get from this program, they are walking away with a sense of pride of who they are, where they come from, along with their culture, their values, their language. It is all in one. (*Program Implementer, NS*).

In line with notions of culture as treatment, the participants thought that wellness programs could teach elements of Indigenous culture. Therefore, in their adaptations and implementations of LTOA, the participants aimed to include cultural elements that fit or are consistent with the mental health promotion teachings of a specific session.

Traditional Forms of Healing

According to the participants, one beneficial consequence of teaching culture to Indigenous youth is that it can lead youth to learn traditional healing activities. Indeed, Indigenous communities have a history of traditional healing practices involving ceremonies, medicines, and other activities (Gomez Cardona et al., 2021b; Lavallee & Poole, 2010; Struthers et al., 2004). While each Indigenous community has forms of healing that are commonly accepted by the community, participants in this study often brought up land-based activities:

> I am 100 percent sure that being out on the land and learning is not only an amazing way to learn, but it gives space for healing in ways that we cannot even predict. It is holding a space that is what fosters a spiritual connection (*Program Implementer, BC*).

The reference to spiritual connection may demonstrate that some traditional healing practices can be holistic, meaning that it includes every aspect of the person. In this instance, land-based activities can be a form of healing, can help program attendees identify with a location, and a reconnection to Indigenous spiritual practices.

Many participants spoke about efforts in their respective communities to create land-based healing and to invest in properties that would be used for land-based activities. When

asked about the specific meaningful components involved in land-based healing, one participant shared that proper guidance and engagement is required:

> I wish that I could tell you. I wish there were words that I could say that if you go to this place and we do this at this time that magical things will happen, but it is the process. It's trusting the process of putting your feet on the earth and whatever comes next. (*Program Implementer, BC*)

Many other participants also agreed that there are specific cultural processes for traditional activities. These participants expressed that the inclusion of cultural materials within the LTOA program can lead program attendees to engage in traditional forms of healing and to learn the specific cultural processes.

Cultural Adaptation

LTOA is designed to build upon local cultural concepts of wellness. Integrating culture can strengthen youths' sense of identity and mobilize cultural ways of healing tied to experiences of wellness. Adaptations can be done in two ways. One, there is a formal adaptation which occurs before the program begins. This part includes the program implementers adapting materials to decide which cultural components should be included in the program. Two, the program implementers may also make on the spot adaptations, sometimes referred to as "cultural accommodations,"[3] depending on how program attendees respond to program content. This section refers to the formal adaptation process. Therefore, the ways that culture gets integrated

[3] Burrow-Sanchez et al. (2011) refer to cultural accommodations as "the process of adjusting components of an intervention to increase congruency with the cultural norms of a particular group" (p. 204). According to Burrow-Sanchez et al. (2011), cultural accommodations are distinct from cultural adaptation, which they define as "modifying the underlying structure of an intervention to increase correspondence with the cultural norms of a particular group" (p. 204).

into mental health programs may reflect the participants' understanding of the objectives and strategies of cultural adaptation.

When adapting materials, participants stated that the goal of the adaptation process was to make the program more relatable to the community members they work with. Participants tended to integrate local stories, histories, languages, and teachings associated with the themes of each program session. The goal of adding these components was to increase program uptake and engagement by making community members more interested in attending and completing the program. For instance, the participants stated that both parents and children were more likely to commit to local community programs that include cultural activities.

To make these adaptations, the participants emphasized the need to identify local experts who are knowledgeable about the culture. Working with Elders from the community was one strategy often brought up by participants. Program implementers mentioned how they had built relationships with Elders over the course of their careers and could identify Elders within the community who had the requisite knowledge to adapt mental health programs. This knowledge included language as well as ceremonial practices and life skills:

> When I do workshops, I go to her [Elder] and she helps me a lot, too. She teaches me how to say words or if I know a word and I don't know what it means, I'll tell her and she'll translate for me (*Program Implementer, NS*).

In practice, however, Elders were not always available. In some instances, finding Elders from the community who speak the language and are willing to share their knowledge was difficult. Participants mentioned that due to the cultural loss, there were not many Elders that had the cultural expertise required. Those who did have this expertise were often relied upon by

many different groups, making it difficult for them to commit amount of time needed to culturally adapt a 14-session program.

If Elders were not available, participants stated that they could use online cultural resources to translate and identify cultural activities. When asked about which online tools were used, some participants mentioned using iOS and Android applications, such as *L'nui'suti* (https://apps.apple.com/ca/app/lnuisuti/id918629700) which can translate some words from English to Mi'kmaq, and others went to websites, such as First Voices (www.firstvoices.com), which can provide useful translations of a variety of First Nation languages. Program implementers also identified using online websites, such as the one set up by the Thunderbird Partnership Foundation (https://thunderbirdpf.org**)**, which includes guidelines for integrating holistic healing practices and promoting cultural values to address issues of substance use in First Nations communities. Indeed, different cultural elements and different depths of program adaptation can occur depending on the available resources within the community and the resources program implementers have access to.

Additionally, depending on the regions covered by Indigenous health organizations, program implementers collaborated with multiple communities. For example, one participant in this study works at an Indigenous health organization that provides services to thirteen communities, each with their own unique cultural features. Cultural adaptation then requires partnering will local experts to find a method of adaptation and program delivery that works best for that community. One participant expanded on this idea by stating:

> Every community is different. You have to have a different approach for each community and you have to walk in very humble. And knowing that those community members are the experts (*Program Implementer, ON*).

As a result, there was not one uniform method of cultural adaptation identified by the participants. While the availability of local Elders and knowledge holders can be a barrier to the adaptation of the LTOA program, program implementers might be able to use other local resources and online tools to help the adaptation process.

Integration of Cultural Content

The participants were also asked questions about the role of creating a culturally safe space for implementing program activities. They mentioned that communities will have different levels of cultural knowledge, which must be taken into consideration when integrating and implementing cultural activities. As one participant noted: "we can't just start with the deep stuff without getting the easier stuff first, and like the steps you have to take to get there" (*Program Implementer, NS*). Other participants mentioned that some program implementers are enthusiastic about teaching cultural knowledge through mental health programming, and they wanted to start with large, meaningful cultural activities. Instead, these participants said that the level of cultural knowledge of each community must be identified before culturally adapting program materials. They warned that overwhelming community members with cultural activities is inadvisable as some attendees can be made to feel shame for not knowing their language or their culture.

One participant illustrated this example of feeling shame when speaking about difficulties arising from debate between communities on how words should be pronounced or written:

> One of the problems that I had first coming into communities and going to people was that we have two different dialects and we have two or three forms of writing

> [...] so when asked 'why are you doing it like this?' Then it is harder for me to get up and go again the next time (*Program Implementer, BC*).

In addition, the participants suggested that efforts should be made to cultivate a positive learning environment that encourages program attendees to engage with the cultural teachings and start to learn their language. Cultivating this setting requires patience from all program implementers present during program implementation. One participant likened learning language and culture to learning how to ride a bike but noted that it requires consistent practice with knowledgeable community members.

Fit and Fidelity

During the discussions on cultural adaptation, participants emphasized that adaptations were done to make the program more appealing to each region, while also meeting the specific needs of each community. Providing culturally adapted materials that fit the community required that program implementers identify the level of cultural knowledge of program attendees and provide cultural resources that were most appropriate for that level.

Concepts of fit also extended beyond traditional cultural teachings. One participant mentioned that because every community is different program content may need to be altered to better fit the issues currently faced by communities: "I changed a lot of the scenarios [in the program] because the stuff the youth and parents experience here is different" (*Program Implementer, NS*).

For instance, some scenarios that derive from the original SFP are about being a good student. While these scenarios are important, participants stated these issues were not as large of a concern in their communities and wanted program activities to reflect issues of developing

healthy peer relationships, cyberbullying, or asking for help when feeling stressed or anxious. These adaptations help to better meet the needs of the communities they serve.

Many of the participants have stated an appreciation to the flexibility of the program, stating flexibility is the main feature for making program materials adaptable. The participants mentioned it was difficult to use program materials that are expected to be followed "word by word" (*Program Implementer, ON*) and did not allow for adaptation because those programs may not always meet the needs of the community. In this case, 'word by word' refers both to the presentation of content and the content that gets integrated into the program. These two are not mutually exclusive. There is a need to use the language and metaphors that resonates with the community, but there is also a need to adapt the content of the program to meet the needs of program attendees. Furthermore, other participants spoke about how they bought into the program because they were allowed to customize it: "When I did it, I really made it my own. And I think that is what you have to do. Especially to make it work for more people" (*Program Implementer, ON*).

During research discussions, the balancing of fit and fidelity was not an initial focus of inquiry, but came up in follow-up probes. When discussing cultural adaptation, the participants were eager to speak about how improved local cultural fit was a benefit of program adaptation. The researcher explicitly mentioned concepts of fidelity as a follow-up probe. Although the participants spoke about concepts of fidelity, such as stating a need to stay close to the content and the specific theme of each program session, participants had more to say about program fit.

Discussion

This study is one of few to explore the use of the concept of culture as treatment with Indigenous program implementors. Although this study did not attempt to systematically

evaluate culture as treatment, the findings confirmed the importance of preserving culture as was identified in the literature. Participants in this study discussed a lack of culture as being a problem in the communities they serve. They saw a need to teach components of culture to help strengthen cultural identity among program attendees.

This study identified culturally adapted, strengths-based mental health programs as one strategy to mobilize culture as treatment. Integrating cultural activities can increase buy-in for both program implementers and program attendees. In addition, integrating cultural teachings into a program that has shown to work in other settings can provide program attendees with the mental health knowledge and tools needed to cope with day-to-day stressors, while also helping to build cultural identity.

This study identified two strategies to mobilize culture as treatment in mental health interventions that may be distinctive for Indigenous Peoples. Participants often suggested land-based activities as a potential source of healing, and a way to maintain or return to aspects of traditional ways of life. Land-based activities may also require specific guidance. The knowledge that arises from land-based activities is not necessarily descriptive or discursive (*knowing that*), but more about the process of participating in a ceremony and about relating to a particular context. What is being learned is not simply the steps involved in a process, but also learning the context of the communal relationships that emerge. Ways of knowing can emerge from the affordances of a specific place, setting and ceremony, and something outside viewers would have difficulty grasping without the cultural background knowledge necessary to appreciate the context (Basso, 1996). This understanding of cultural conventions speaks to the cultural affordances of the context and the ability to respond to social cues in a culturally appropriate manner (Ramstead et al., 2016).

While there is a growing literature showing that land-based activities can improve mental health (Kirmayer et al., 2000; Walsh et al., 2020; Wildcat et al., 2014), much of the literature on culturally adapted programs in Indigenous communities has focused on the revitalization of language and local stories, history, and teachings. It is also noteworthy that participants in this study spoke to the spiritual component of land-based activities. The importance of spiritual components in mental health interventions in Indigenous communities have been highlighted in prior research. For instance, some research has suggested that spiritual practices should be included as part of holistic healing, which includes healing the mind, body, and spiritual aspects of a person (Hill, 2017; Moorehead et al., 2015; Struthers et al., 2004). More specifically, Reeves & Stewart (2017) suggest that mental health interventions in Indigenous communities should incorporate spiritual activities (among others) to address the historical and social contexts surrounding mental health issues. While some mental health interventions in Indigenous communities may avoid the topic of spirituality altogether, Indigenous program attendees may see value in including spiritual practices to improve mental health (Wendt & Gone, 2016). Therefore, mental health promotion programs could benefit from identifying culturally appropriate healing practices that aim to incorporate many facets of the human experience, such as mind, body, spirit, and integrate these practices into programming. Findings from this study can provide some insights about introducing land-based activities and spiritual activities in evidenced-based mental health programs that could prove fruitful for future interventions.

Second, participants emphasized the importance of developing culturally safe spaces for the mobilization of culture as treatment. The history of systemic suppression of Indigenous cultures and the lack of recognition of Indigenous ways of knowing have made sharing cultural perspectives unsafe in some mental health settings. Cultural safety is a concept developed by

Maori nurses in response to experiences with discrimination in western medical settings and usually refers to efforts to address the power dynamics that Indigenous people encounter (Papps & Ramsden, 1996). Participants in this study had unique perspectives on cultural safety in program implementation when discussing the integration of culture into programming. In these discussions, study participants referred to the structures and processes required to build culturally safe spaces. Previous research in the LTOA program on culturally safe spaces suggested that careful consideration of program location encourages feelings of safety and support among participants (D'souza et al., 2020). The findings from this study add to the findings in D'souza et al. (2020) by identifying the role of implementers in helping to foster culturally safe spaces for program delivery. Building this space would allow participants learn more about their culture without experiencing negative feelings or shame for any lack of knowledge. The creation of this space can complement other approaches to culture as treatment.

This study provided some insights into the challenge of balancing fit and fidelity. Results from this study suggest that balancing fit and fidelity can be assessed in terms of several different goals: 1) program acceptability and accessibility; 2) ability to mobilize underlying psychological and social processes conducive to health and well-being; and 3) wider effects on individual and community processes not considered in the intervention. Study participants seemed more concerned with integrating culture to make the program represent the knowledge and values of the community than with reproducing specific facets of the intervention. Indigenous communities implementing the LTOA program may be more invested in delivering programs that fit the mental health and cultural needs of their target audience than academic considerations of fit and evidence-based practice. Wendt and Gone (2011) suggest that strictly adhering to practices of fidelity can limit Indigenous communities to make surface level adaptations.

Program implementers who aim to deliver a more robustly adapted program may find it challenging to maintain program fidelity. However, integrating cultural teachings to improve program fit, may have the added benefit of delivering a program in a culture as treatment framework, strengthening cultural identity in the community that was disrupted by enabling program attendees to learn more about cultural forms of healing. These observations reflect the sense that the inclusion of cultural elements was the key element in making the intervention acceptable and potentially effective. It is worth considering specific reasons why an emphasis on culture might be especially appropriate in Indigenous youth mental health promotion.

The notion of cultural continuity offers one explanation. Ball and Chandler (1989) suggested that as youth develop, they preserve a sense of self over time by constructing a narrative that links their identity in past, present, and future selves. In a clinical study, they found that adolescents who were suicidal had difficulty warranting continuity with future selves (Ball & Chandler, 1989; Chandler, 1994;). Chandler and Lalonde (1998) applied this idea to a study of suicide in Indigenous communities. They found a lack of cultural continuity at community levels was associated with higher rates of suicide (Chandler & Lalonde, 2019; Chandler & Proulx, 2008). The ways in which cultural continuity might function as a protective factor will vary depending on the level of cultural preservation and restoration in each Indigenous community (Chandler & Lalonde, 1998).

Disruptions to cultural continuity may also affect the clarity of cultural identity (Taylor, 2002). *Cultural identity clarity* refers to having and feeling social validation from a clear identity and belief system (Hogg & Mullin, 1999; Taylor & Usborne, 2010). Cultural identity clarity has been theorized to offer a degree of protection for communities that have endured collective cultural loss (Taylor & Usborne, 2010; Usborne & Taylor, 2010). For Indigenous communities,

the dominance of Euro-Canadian culture has made it challenging to revitalize and maintain traditional cultures and has left some youth with confusion or uncertainty about their identities (Taylor & Usborne, 2010). It may be more difficult for individuals to make use of culture as treatment models of healing if communities have experienced higher levels of disruptions to cultural continuity and cultural clarity.

In response, some Indigenous communities have made deliberate efforts to design, adapt, and implement cultural interventions (Bourke et al., 2018; Rowan et al., 2014). Other studies have also recognized the importance of language and cultural teachings for promoting physical and mental health (Gonzalez, et al., 2021; Oster, et al., 2014; Whalen, et al., 2016). Kirmayer et al. (2012) have suggested that learning about community heritage and stories can help individuals and communities create a meaningful identity and situate their experiences within a moral epistemology. The present study found that many participants focused on themes of language, stories, and cultural teachings in the adaptation process. The inclusion of elements of local culture in the program also led program implementers and program attendees to become interested in other types of cultural teachings. For example, one program community partnership in B.C. reinstituted a naming ceremony for children, an unintended positive consequence of reintroducing cultural teachings.

Choosing the appropriate cultural activities can be a complicated process. The dichotomy between Indigenous cultural revitalization and Christianity has created tensions within some communities. Brady (1995) describes that some Indigenous communities with large Christian followings may oppose the integration of Indigenous cultural activities within communities. These issues were also raised by some study participants. For instance, some participants mentioned that more traditional practices, such as a sweat lodge, made a small portion within

their communities feel uncomfortable. A subset of the participants in this study stated that even simple activities such as beadwork provoked tensions. Therefore, the types of activities integrated into LTOA and the types of activities that emerged in the research discussions could have been influenced by these tensions. Although it was not a major focus of this study, it is worth noting how tensions between Christianity and Indigenous traditions may post a potential barrier to the implementation of culturally relevant mental health programs in Indigenous communities.

As communities continue to make efforts to reintroduce culturally relevant programs, it is also worth examining how the different activities in the LTOA program serve different group members. I suggest that the activities in this program can be divided into community, family, and individual levels. For the community level, these would be activities with the intended outcome of benefiting the whole community. This may include teaching culture to youth and families enrolled into the LTOA program to reintroduce culture into the community, build cultural identity within the community, and preserve the community's cultural teachings.

Activities in the LTOA program are also aimed at building relationships and communication within families. For instance, the disruption of familial and communal ties meant a loss of parenting skills and the carryover of abuse from the Residential School system (King et al., 2009; Kirmayer et al., 2003; TRC, 2015). Having programs that improve family communication skills and strengthen connections within families can help parents to make better parenting decisions and improve parenting skills (Smith et al., 2005; Toombs al., 2021).

At the individual level, the program aims for youth and their caregivers to learn evidence-based mental health promotion skills such as balancing emotions and asking for help. Pilot data from the LTOA program has shown that, compared to controls, mental health promotion skills

can help program youth to cope with everyday stressors, identify signs of anger, and have better control over impulsive behaviours, compared to controls (Kirmayer et al., 2016). Individual skills can help children to identify problem behaviours and learn to seek for help.

Culture as treatment can be mobilized well into mental health programs. Programs aiming to teach culture to the community members to mediate the effects of colonization can also benefit from providing evidenced-based mental health skills, while programs aiming to build mental health skills in communities would also benefit from introducing cultural teachings. While the fit of the program can build up the necessary cultural knowledge that can benefit the community, the fidelity of the program, grounded in established evidence-based program activities, can provide the necessary skills for mental health promotion.

Limitations

The design of this study went through many changes in response to the challenges of the fast-changing pandemic situation. The study had a small pool of potential participants who were program implementers from Indigenous communities across Canada. Conducting research online had an effect on building relationships with Indigenous community partners. The importance of building meaningful partnerships when conducting research with Indigenous communities has been well-documented (Brant Castellano, 2004; Castleden et al., 2012; Koster et al., 2012). It is much easier to build relationships in person through informal conversations, thereby connecting on a personal level. That process is more difficult when first meeting partners online. The participants in this project were limited to partnerships established in person prior to the pandemic. Indeed, had I not built relationships with program implementers prior to COVID-19, it would have been extremely difficult to build sufficient trust to engage with community partners.

The recruitment was further limited by the impact of the COVID pandemic on the program. LTOA has partnered with Indigenous communities from B.C., Manitoba, Ontario, Quebec, and Nova Scotia. Yet, the largest number of program implementers in this study were in Nova Scotia, which had the lowest COVID rates. Many LTOA program implementers had to become crisis workers in their communities, and it proved much more difficult to recruit program implementers from provinces with stricter COVID regulations. While there were commonalities in the experience of program implementers across Canada, the challenges in recruitment may have resulted in less diversity of perspectives. In addition, many program implementers had been trained in or exposed to current professional and cultural psychological approaches to mental health, which influenced their responses to interview questions.

LTOA provides cultural adaptation guidelines to partners. Developed in collaboration with past and present program implementers, these guidelines identify specific adaptations that can be made, including language translations; use of cultural images and symbols; incorporation of traditional stories; cultural teachings; and the inclusion of cultural activities. Given that participants were exposed to these guidelines, it is unclear how to determine if the responses of participants reflect these suggestions or previously identified best practices.

Other resources identified in this study, such as the frameworks developed by the Thunderbird Foundation, likely influenced how the notion of culture as treatment gets mobilized in program adaptation. Of course, it is difficult to trace where some ideas originate. All participants in this study have had post-secondary education and continue to expand their learning through local Indigenous health courses. Their views may also be influenced by the specific experiences they have had implementing culturally relevant mental health promotion programs in the multiple Indigenous communities they serve, making it difficult for a nation-

wide Indigenous mental health promotion program to identify generalizable results for all Indigenous communities.

That said, the fact that many participants mentioned land-based teachings as a way of culturally adapting LTOA program content is especially significant because LTOA does not explicitly include attention to land. The LTOA program evolved out of the SFP, which operated within a Euro-American, psycho-educational mental health framework (Kumpfer et al., 1996). This approach did not consider land-based activities in its conception. Although LTOA aims to be experimental and locally relevant through the cultural adaptation process, by virtue of being delivered in a manualized way, there are limits, such as land-based teachings not being a component of program manuals. That is not to say that all Indigenous communities would integrate land-based teachings into a program such as LTOA. For instance, while urban communities have led efforts to reclaim traditional healing practices (Hartmann & Gone, 2012; Waterfall et al., 2017), some urban Indigenous communities may not have similar forms of land-based teachings.

Conclusion

This qualitative description study explored how some Indigenous program implementers in Canada conceptualize culture as treatment, traditional healing practices, and their importance for the wellbeing of Indigenous youth. Previous work by Brady (1995) and Gone and Calf Looking (2011) helped to shape the interpretation of the findings. Participants in this study emphasized the need to provide culturally relevant mental health content in communities because few mental health programs allow cultural adaptation or program flexibility. In theory, program implementers could take any evidence-based program that offers no flexibility for cultural adaptation and deliver that program as is. Instead, LTOA program implementers saw the

potential benefit of providing culturally relevant programs that they can adapt to better meet their local needs and provide Indigenous youth enrolled with a stronger sense of cultural identity.

Culture as treatment is an appealing idea when it comes to the implementation of mental health programs. Being flexible in program implementation can encourage program implementers to conduct a deeper program adaptation, rather than a surface level adaptation. Integrating cultural activities into a program such as LTOA can help reintroduce Indigenous culture, which can, in turn, lead youth in the community to culturally appropriate ways of healing. However, cultural adaptation is a time consuming and resource intensive task, requiring collaboration with local knowledge holders, the establishment of a culturally safe space, and ensuring the cultural material in the program matches the level of cultural knowledge of program attendees. Although difficult, learning traditional forms of healing can enhance feelings of self-determination and ownership over one's well-being, both of which have been found to be key determinants of health for Indigenous populations (Auger et al., 2016; Tiessen et al., 2009). This process could help reinstate traditional forms of both building social and psychological forms of strengthening mental health and learning traditional ways to cope with feelings of stress and anxiety, among others. Conducting a meaningful cultural adaptation may also bring the program closer to a culturally grounded approach.

An issue that remains is that there is not much research on whether culture as treatment can reduce rates of suicide, alcohol, and drug use, nor improve mental health functioning. While there may be limitations with definitions around program effectiveness (Gone & Calf Looking, 2011), there may be challenges in systematically evaluating cultural ways of healing (Struthers et al., 2004). Healing practices viewed as sacred or valuable to the community may be difficult to evaluate simply in terms of their effectiveness in harm reduction That said, the development of a

community of practice between all programs across Canada that wish to mobilize culture as treatment may serve well to help increase the impact culture as treatment may have on the scientific community.

Future research on the topic of culture as treatment can clarify its impact on programs designed for Indigenous youth and guide the interaction of culture as treatment in implementation research. Future research should also examine how youth and families view culture as treatment. Such studies could provide unique insights about what youth and families may need such program to address. Findings from these studies would identify best practices for future program adaptations and implementations. This study could provide a necessary first step to discuss these best practices and for future research to do a more in-depth examination on the role of culture as treatment in mental health programs.

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Conclusion

The two manuscripts included in this thesis provide complementary perspectives on the process of cultural adaptation of mental health programs and guidance on how these programs can be delivered online. With more online mental health resources being developed to increase the reach of services in Indigenous communities, it is important to highlight communities' understandings of culture as treatment, the cultural adaptation process, and program fit.

LTOA program implementers valued cultural teachings and saw the benefit in building the cultural identity of youth within the community. Participants in this study saw the loss of culture as "a wound" that has been harmful to the mental health of youth in their community. In Indigenous communities, culturally adapted materials can mobilize the 'culture as treatment' model of healing. Facilitators thought that culturally adapted evidence-based programs are one way to meet the cultural and mental health needs of program participants. In culturally adapting an evidence-based program, the goal of LTOA is for families enrolled in the program to develop the mental health skills they need to address everyday stressors while also helping to increase the level of cultural knowledge in the community.

These findings also have implications for the future development of online mental health resources. As identified in the narrative review, it may be easier to integrate surface level cultural adaptations such as symbols, language, and specific stories or examples. Other activities such as land-based practices, which LTOA program implementers spoke highly about, may be harder to integrate in online programs. Initial reactions to land-based programs online may suggest a dichotomy that cannot be bridged. However, youths' relationship to the online world continues to evolve. Chalmers (2017) argues that experiences in virtual realities, or in computer-generated environments, can be a genuine, valuable type of experience that are no less real than physical

realities. Chalmers also argues for the value of mixed realities that merge interactive virtual experiences and physical environments. This claim resonates with two recent studies that have demonstrated potential avenues to merge the physical and virtual realities to teach Indigenous culture to youth. Marques et al. (2019) used augmented reality to teach Māori cultural landscapes and cultural values. Bujold et al. (2021) have used online resources to encourage and support youth to explore land-based teachings. In both studies, virtual experiences were utilized to develop new ways to teach cultural values to youth. In fact, LTOA program implementers have started mixing these realities by implementing QR codes into LTOA cultural activities to enhance the experiences for program youth. In relation to the Tree of Life workbook developed as a simple self-guided supplement to LTOA, program implementers spoke positively about the potential use of QR codes to provide additional information for workbook activities.

Of course, some the examples presented may require more time and resources to develop than others and exceed the capacity of individual communities to implement. That said, initial research is demonstrating how cultural values and land-based teachings can be taught in a mixed reality. It also demonstrates new avenues for program implementers to consider when developing and designing future online mental health programs that make use of cultural teachings. Future research can provide further insights on the possibilities and practicality of merging physical and virtual experiences in the mobilization of culture as treatment.

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Appendix 1: Summary of Studies Included in the Narrative Review

First Author/ Date	Type of Study/Program being Evaluated	Study Sample	Country	Methodology and Sample	Findings
Perspectives on Online Mental Health Resources					
Gibson (2011)	Examining First Nation Community members perspectives with using Telemental health	First Nations community members from two First Nations in Ontario, aged 18 and up.	Canada	Qualitative (N = 59) Structured interviews with 59 First Nations community members.	● Participants were comfortable using telemental health. ● Lack of human contact a concern ● Concerns about safety if crisis emerges
Leader (2020)	Examining telemental users' experiences with telemental health	Telemental users from 4 Indigenous communities in Saskatchewan	Canada	Qualitative (N = 24) Semi-structured Interviews with 24 telemental health users from 4 First Nations communities	● Accessing healthcare from community is an advantage ● Cannot replace in-person consultations ● Communities need more infrastructure to support online mental health ● Issues with Internet access
Monthuy-Blanc (2013)	Examining mental health worker intention to use Telemental health	Mental health workers who provide services to 32 unique Indigenous communities in Quebec	Canada	Quantitative (N = 205) Telepsychotherapy Acceptance Questionnaire used to access intention of using technology to delivery mental health resources by sampling 205 mental health workers in Quebec	● Ease of use predicts usefulness ● Ease of use predicts intention to use ● Perceived usefulness of telepsychiatry will increase uptake among providers
Shang (2021)	Examining Psychiatrist and Support staff experiences using telemental health services	Mental health workers and support staff working in Northern Quebec	Canada	Qualitative (N = 8) Semi-structured interviews with 8 mental health workers	● Cannot replace in-person consultations ● Being in community can build relationships with patients

					● Appropriate for depression and anxiety ● Need for newer technology
Development of online mental health Resources designed for Indigenous youth					
Christie (2019)	Quest – Te Whitianga, mobile phone application	30 "young people"	New Zealand	Qualitative (N = 30) Think aloud interviews. Youth tested the app and expressed their thoughts as they went through the application	● Youth favour positive reinforcement features in apps (points, leveling up) ● Youth are receptive to cultural elements integrated into the app ● Requests for social elements to be integrated in apps
Povey (2020)	AIMhi-Y Mobile Application	Aboriginal or Torres Strait Islander youth aged 10-18 years old	Australia	Mixed methods Quantitative (N = 75) Gathering information on youth use of technology and knowledge on available mental health resources Qualitative (N = 45) workshops with youth to learn how to improve the app design and content.	● Youth saw app as one strategy to prevent more serious mental health issues later ● Youth wanted more content on cyberbullying ● Youth found the resources easy to use, relatable, and understandable
Raghupathy (2012)	The HAWK2 Program	Indigenous youth aged 11-13	USA	Qualitative (N = 45) workshops with youth to learn how to improve the app design and content	● Tailor images to Indigenous youth ● Integration of community perspectives ● Shortening program would make the tool more flexible
Shepherd (2015)	SPARX, free online computer game	Maori youth, young Maori mothers (16-18 years old), and Maori families	New Zealand	Qualitative (N = 26) focus group discussions to determine acceptability and culture relevance of SPARX	● Inclusion of community understandings of mental health would be beneficial ● Less text to not overwhelm readers

					● Easier to understand language
Shepherd (2018)	SPARX, free online computer game	Maori youth aged 14-16	New Zealand	Qualitative (N = 6) semi structured interviews to gather youth perspectives on SPARX	● Game was good at teaching psychological skills ● Maori designed increased Maori identity ● Customizable avatar improved reception to the app
Shrestha (2019)	CHOICES for American Indian Teens (CHAT), web-based application	AIAN community members, Elders & school counsellors, and adolescent girls	USA	Qualitative (N = 30) Semi structured interviews with community members, Elders, and school counsellors. Focus groups with adolescent girls. Data was used to inform the app content and appeal for youth.	● Information can be made more appealing through use of graphics and pictures ● Touched upon topics not readily discussed in communities or schools ● Learning about cultural values could be beneficial
Taualii (2010)	SmokingZine, web-based application	AIAN youth aged 13-18	USA	Qualitative (N = 15) focus groups with AIAN youth to improve web-based application design and content	● Tool was helpful for giving real world scenarios for youth ● Added Indigenous graphics, music, and more representative of Indigenous culture ● Teachings traditional vs. recreational use of tobacco
Training facilitators to implement online mental health resources into regularly scheduled programming					
Bennett-Levy (2017)	Stay Strong Program, iPad application	26 health care providers who attended a Stay Strong training program (21 Aboriginal / Torres	Australia	Qualitative (N = 26) Semi structured interviews with program trainees to see if trainings improved awareness of and competence to use mental health resources.	● Technology use must fit with the organizational objectives ● Management enthusiasm towards technological resources improves integration

		Strait Islanders & 5 non-Aboriginal participants)			• Incorporating multimedia as an educational tool
Bird (2017)	AIMhi Stay Strong Mobile application	16 participants who attended an AIMhi training. 15/16 participants identified as Aboriginal or Torres Strait Islander	Australia	Qualitative (N = 16) semi structured interviews to determine if trainings helped service providers integrate online mental health resources into regular programming	• Training taught practitioners how to integrate multimedia • Allows clients to learn mental health information at home • Provides emergency contact information
Dingwall (2015)	AIMHi Stay Strong mobile application	130 participants who attended an AIMhi Stay Strong training	Australia	Quantitative (N = 130) pre- and post-questionnaires to determine if the training built participant knowledge and confidence to use mental health online resources	• Trainings improve awareness of online mental health resources • Program trainees felt more confident using online mental health resources
Volpe (2014)	Telelink Mental Health Program, videoconferencing technology	Health staff in Nunavut, Telelink psychiatrist consultants, and health organization coordinators	Canada	Qualitative (N not defined) Focus groups with Nunavut health workers who participated in the training, and individual interviews with consulting psychiatrist and lead program coordinator to study the effects of building capacity to Nunavut health staff.	• Videoconferencing is an effective means to provide education opportunities to mental health providers • Videoconferencing can be an effective form of capacity building
The implementation of online mental health resources					
Campbell (2015)	Web-based Therapeutic education system (TES)	40 Urban AIAN who used TES	USA	Mixed methods Quantitative (N = 40) participant feedback after the completion of a TES module	• Moderate adaptation would improve acceptability • Must account for difference in Indigenous cultures in the US

				to determine satisfaction of the module Qualitative (N = 26) semi structured interviews to access TES content and delivery	● Culturally adapted web-based information could address treatment barriers
Dingwall (2015)	AIMhi Stay Strong Mobile Application	15 service providers who provide services for Aboriginal and Torres Strait Islander clients	Australia	Qualitative (N = 15) semi-structured interviews were conducted to determine perceived barriers and enablers to the Stay Strong app.	● Helped practitioners engage with younger clients who had difficulty talking ● Simple language and straightforward user interface were a bonus ● Offering translated options can help with language barriers
Fletcher (2017)	Stayin' on Track, phone-based text messaging program	20 young Aboriginal fathers aged 18 to 25	Australia	Qualitative (N = 20) participated as co-investigators to evaluate the feasibility of a phone-based text messaging program	● Participants noted a need for culturally relevant information online ● Study noted an elevated level of engagement from participants, due to integration of cultural elements
Gibson (2011)	Videoconferencing for Mental Health Consultations	Online survey with mental health workers from across Canada, and interviews with participants familiar with using telemental with rural First Nations communities	Canada	Mixed Quantitative (N = 63) online survey & Qualitative (N = 5) interviews were conducted to determine attitude towards technology and how it influences engagement with online mental health resources	● Practitioners who thought online resources were easier to use were more likely to use it ● Online mental health resources can bridge barrier of geographically distance ● Infrastructure to support online mental health is poor and more funding is required to make it sustainable

Jongbloed (2020)	The Cedar Project - Mobile Health	131 young Indigenous people in Vancouver	Canada	Quantitative (N = 131) participants completed a questionnaire related to mobile phone use and online mental health resources. Qualitative (N = 131) open ended questions at the end of the questionnaire were thematically analyzed to supplement findings related to mobile patterns and use of online mental health resources.	● Majority of participants said a mobile phone would be helpful to reach online health care options ● Phone could be used to connect to family, as a tool for social support ● Increasing access to mobile phones would help youth access online mental health resources
Maar (2015)	Developing a research agenda for online mental health resources	40 stakeholders from the Aboriginal Telehealth Knowledge Circle	Canada	Mixed Qualitative (N = 40) interviews with stakeholders were supplemented by Quantitative (N = 40) surveys to identify information gaps that comprises the adoption of online mental health resources	● Educational resources are required to promote online mental health in Indigenous communities ● Partnerships with local communities are crucial ● Online mental health tool must have a direct application and address a problem within the community to improve uptake
Povey (2016)	AIMhi Stay Strong mobile application & iBobbly suicide prevention mobile application	9 Aboriginal and Torres Strait Islander community members with participants who were at least 18 years old.	Australia	Qualitative (N = 9) explore participant experiences using culturally related online mental health resources	● Difficulty motivating people to use the app if participants do not think they have mental health issues ● Culturally relevant images can improve understand and engagement, but must be culturally specific

					• Social components can improve adherence to app completion
Puszka (2016)	Discussions with stakeholders on the implementation of online mental health resources	32 participants made up of health organization managers, directors, chief executive officers, and senior practitioners	Australia	Qualitative (N = 32) semi structured interviews to explore the infrastructure required to implement online mental health resources	• More research needs to find which online mental health resources are evidence-based and effective • Lack of budget to integrate e-mental health • Staff might be overwhelmed by adding new tasks (online mental health)
Raphiphatthana (2020)	Evaluating the integrated Promotion Action Research Implementation in Health Services (i-PARIHS) for online mental health resources	57 services providers who provide services to Aboriginal and Torres Strait Islanders	Australia	Qualitative (N = 57) semi structured interviews to determine what influences the uptake of online mental health resources	• Online mental health interventions are often brief and not in line with organization philosophy • Many avoid using generic apps • Internet access is an issue, requiring organizations to provide iPads with apps already downloaded • App cannot overwhelm and exhaust clients
Outcomes of online mental health Resources					
Bowen (2012)	SmokingZine web-based application	AI youth aged 12-18 years old	USA	Quantitative (N = 113) randomized controlled trial to determine if a cultural adapted SmokingZine website improved smoking attitudes and behaviours among AI youth	• Non-smokers in the intervention group were less likely to smoke than controls • Changed attitudes intervention non-smokers had about tobacco use • Intervention group learned skills to help peers quit

Kypri (2013)	Web-based alcohol intervention for Maori university students	Maori youth aged 17-24 years old	New Zealand	Quantitative (N = 1789) randomized control trial to determine if a web-based application can reduce harmful drinking among Maori university students	• Web-based intervention effective at lowering frequency of alcohol consumption and the amount of consumed • Odds of drinking reduced for acute or chronic harm
Peiris (2019)	A Smartphone App to Assist Smoking Cessation Among Aboriginal Australians	Aboriginal and Torres Strait Islander youth aged 16 years or older	Australia	Mixed methods Quantitative (N = 49) randomized control study to evaluate the effectiveness of intervention Qualitative (N = 15) semi structured interviews to better understand how the app can improve smoking cessations.	• Few achieved abstinence, likely due to generic program design • Participants more likely to play games on phone than use app • Peer groups and social settings have a strong influence on smoking behaviours
Stephens (2020)	BRAVE, SMS Help Seeking Intervention	AIAN youth aged 15-24	USA	Quantitative (N 1030) randomized control trial to determine if culturally based applications can improve retention and adherence to the application	• Programs opt out due to message fatigue and loss access to technology • Messages that included cultural elements received higher engagement than generic messages
Tighe (2017)	iBobbly mobile health	Indigenous youth aged 18-35	Australia	Quantitative (N = 61) randomized control trial to determine the effectiveness of iBobbly at reducing Suicidal ideation, depression, and distress	• Mental health apps target mild disorders and were not effective at lowering suicidal ideation • iBobbly app more well designed for severe psychological distress and teaching youth to ask for help
Tighe (2020)	iBobbly mobile health	Indigenous youth aged 18-35 years old	Australia	Mixed methods	• iBobbly did not have significant improvements for suicidal ideational or depression, but all

				Quantitative (N = 13) surveys to address general technology use Qualitative (N = 13) semi-structured interviews to determine experiences and views with iBobbly app	regression analysis associations were in a positive direction ● Participants mentioned traveling with the app was a positive
Titov (2019)	Mindspot digital mental health service	Indigenous participants mean age 32 and non-Indigenous participants, mean age 35	Australia	Quantitative (N = 23235) compares treatment outcomes for Indigenous participants to non-Indigenous participants	● Mindspot was accessible for rural and remote Indigenous peoples in Australia ● Mindspot was effective at lowering feelings of anxiety and depression
Wexler (2013)	Digital Storytelling	Adolescent Alaska Natives	USA	Mixed methods Quantitative (N = 299) exit surveys to determine participants satisfaction with digital storytelling Qualitative (N = 27) interviews to determine the impact of digital storytelling	● Positive response to digital story telling from youth ● Storytelling had youth feeling positive and was one method to combat negative stereotypes about Alaska Natives
Yao (2018)	Texting 4 Sexual Health	AI youth aged 15 to 24 years old	USA	Mixed methods Quantitative (N = 408) regression analysis to assess pre and post attitudes towards sexual health Qualitative (N = 81) 60 AI/AN youth assessed their satisfaction with the text message service, and 21 young adults evaluated the functionality of the service	● Intervention youth more likely to agree with safe sex practices ● Integrating more scenarios and negotiating skills is helpful ● Romantic partners should be integrated into future interventions