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THE CRISIS

Indigenous is a collective name for the original peoples of North America and their descendants. The First Nations, Innuit, and Métis groups represent the fastest growing and youngest populations at more than 1.6 million as of 2016. The long legacy of colonial Canada has instilled many problems upon Indigenous peoples. Consequently, Indigenous youth are more likely to experience abuse, discrimination, suicidal thoughts, and shorter life expectancies. 2,3

Historical injustices have been present since settlers introduced a variety of infectious diseases (e.g. smallpox, influenza, measles) to Indigenous communities in the 16th century.2 In 1831, the Canadian government opened the first residential school on the nearby Six Nations of the Grand River, called the Mohawk Institute (1831-1996). In 1831, this Anglican Church-run boarding school only accepted boys, before beginning to accept girls in 1834. This institute is now a memorial site and museum, known as The Woodlands Cultural Centre. Residential schools emerged across Canada and forcefully removed Indigenous children from their homes and placed them in a physically, psychologically, and sexually abusive environment.4 Their goal was to eliminate Indigenous cultural identity by assimilating Indigenous youth into Euro-Canadian Christian culture.4 To date, over 4000 burials have been discovered at residential school sites -this number continues to grow as investigations continue. These premeditated attacks did not take place in a distant world; in fact, several occurred just a 30-minute car ride from University McMaster in Brantford, Ontario.6 "Hunger was never absent"; despite the children being able to visibly see full apple trees and milk cows for local farmers, abundance this not offered Indigenous youth.5 In 2013, Historian Dr. Ian Mosby published Administering Colonial Science, which discussed

how nutritional experiments for Canada's Food Guide were performed in residential schools. According to Dr. Mosby, "The nature of the experiments that [Pett] conducted in residential schools was determined based on a whole series of internal debates among nutrition professionals and bureaucrats about Canada's Food Guide and about what a healthy and nutritionally adequate diet looked like. Pett used the opportunity of hungry kids in residential schools ... who had no choice in what they were going to eat and whose parents had no choice in what they were going to eat ... to attempt to answer a series of questions that were of interest to him professionally and scientifically."

Current health inequities that Indigenous people face include high unemployment rates, social exclusion, primary care inaccessibility, and inadequate health infrastructure.⁸⁻¹⁰ To that end, one of the greatest challenges in First Nations reserves is insufficient access to clean drinking water. Unlike off-reserve communities, the Canadian government does not regulate the water quality on First Nation reserves.¹¹ This water crisis not only strips First Nations persons of their basic human rights of health, hygiene, and participation, but also prevents community members from performing customary cultural traditions such as fishing practices, medical ceremonies, creating ceremonial objects like water drums, and supporting childbirth.

THE RESULT

I had the privilege of interviewing Makasa Looking Horse —a local Indigenous leader and internationally prominent water right activist— to learn more about the cultural importance of water and the individual effects of water insecurity.

Makasa Looking Horse is of both Mohawk Wolf Clan and Lakota heritage, living on a reserve at the Six Nations of the Grand River, Ontario, Canada. Following her completion of the Six Nations Traditional Medicine Practitioners course, she enrolled in the Indigenous Studies program at McMaster University. Her accomplishments include co-creating and hosting a YouTube and podcast series called *Ohneganos: Let's Talk Water*, which discusses traditional ecological knowledge and current events. She also works as a health research trainee on adapting a resilience mobile app, JoyPopTM, to an Indigenous context.



Acting as a Youth Leader of Ohneganos, she teaches young women useful skills, such as basket-making, and speaks to audiences across North America and abroad about Indigenous rights. In 2016, she was present at the Standing Rock protest against extractive exploitation of the land and personally handed Nestless CEO a

cease and desist letter in 2019 after learning that they removed 4.7 million litres of water from her community's aquifers daily. Nestlé obtained a permit from the Ontario government to take water from the reserve without their knowledge. Canada's Truth and Reconciliation Report, as well as the United Nations Declaration on the Rights of Indigenous Persons, call on Indigenous participation in the decision-making for the environment as stewards, and sovereignty for their treaty lands.

Makasa shared how water is essential to most Indigenous traditional ceremonies and teachings, such as the daily Thanksgiving Address, which gives thanks for natural living. Its basis regards the Creator of the world's gifts as kin and upholding a law of peace among peoples, animals, and the environment. It forms the basis of a unified mindset for the greater good of one's personal and community life, creating the inner resourcefulness to practice a good mind. Additionally, it is believed that it is the woman's responsibility to protect the water since it played a vital role in the creation story of Sky Woman falling to earth. Water was here first, humans are developed in a water womb, and water is, thus, considered humanity's first medicine. To the Six Nations, water does not merely represent hydration. As stated by Makasa, "It's alive, it's a spirit, and it's a powerful being."

Looking Horse describes the physical and emotional suffering caused by water insecurity. According to the water protector, sewage tanks from the elevated surrounding cities have been dumping waste into their water reserve, contributing to the erosion of the water sensors that the Ohneganos' water project put into the Mackenzie Boston Creek. Furthermore, Makasa personally discovered traces of contaminants in the tap water which are poisonous and detrimental to health; this finding drove her to begin

THE SOLUTION

These deeply-rooted discriminatory policies need a comprehensive solution, but change takes time. Indigenous youth must learn resilient strategies so that they can protect their mental wellness as the fight for equality continues. As Makasa shows, there is much resilience in resistance, to be part of the fight for rights and adhere to the time-honoured responsibility of showing respect and care for the environment. A rich heritage of resilience comes from connections to both ancestors and future generations, allowing traditional ecological knowledge to carry forward. In recent years, grants from Global Water Futures and the Canadian Institutes of Health Research have supported the potential combination of Western psychological science and Indigenous science philosophies to resolve a lack of ecological care.

In affiliation with McMaster University, Dr. Christine Wekerle's research team and I have worked to support Indigenous communities by discovering methods to promote resilience in Indigenous youth. The JoyPopTM app is a mobile application based on trauma-informed care models that have shown promise in reducing depression and increasing emotional regulation among first-year university students. JoyPopTM was developed in response to youth adversity experiences. Users can engage in positive thinking via journaling or art exercises, find relaxation in the breathing or sleeping functions,

and receive personalized



investigating Nestle's water theft. The Youth Leader then spoke about the emotional burden that young people carry as they observe their own mothers having to worry and wonder, "Is there going to be enough clean drinking water for their kids to live off of?" For those on reserves, water is not a free-flowing resource unlike in non-reserve communities. Water is a financial cost, from the creation and maintenance of water sources to waste removal from septic tanks. For drinking, cleaning, washing, and more, water is a dollar value in the budgets of Six Nations homes. Many can take water for granted in Canada —a country of the Great Lakes— when water is so costly for those nearby. Water is precious, and part of Canada's global sustainable

development goal is to ensure that water is a right for all.

support from an Indigenous-specific hotline if they need care. As community is extremely relevant on reserves, users can also input their aunties' and uncles' contact information for immediate connection in the *Circle of Trust* feature.

This technique of social connection is one of the key features that interested health researchers and service providers at Six Nations. One study, led by McMaster trainee Noella Nohorona, discussed how mobile health apps can benefit Indigenous youth by removing barriers to services and promoting resilience for those in need. Consultations with Indigenous youth and leaders from diverse communities were held during the development of the app and after its launch to ensure cultural relevance. Makasa Looking Horse provided a review of the app, along with 19 adults from the Six Nations Grand and River community and 17 Indigenous

identifying undergraduates from McMaster University. From these consultations, we learned how to adapt specific features of the app to better support Indigenous youth. For example, we learned the value of including culturally significant colours and patterns, featuring words in Indigenous languages, and using significant icons (e.g. feathers, wampum, animals) within the app. JoyPop™ is constantly being reviewed and adapted so Indigenous youth can receive mental wellness support that resonates with their unique culture. Twice a month, the research team discusses their projects with a Six Nations Advisory Committee to ensure that their work is culturally informed, respectful, and accurate. The experts provide guidance and cultural insight so the developer can further improve the efficacy of their work. Additionally, every member of the research team must complete the Indigenous Canada course by the Faculty of Native Studies at the University of Alberta to guarantee cultural competency.

To promote resilient strategies among Six Nations youth, Dr. Wekerle's research trainees developed short lessons that teach Indigenous middle school students about varying health topics and how the techniques can be integrated into their daily life on the reserves. The Resilience Curriculum includes engaging videos that discuss exercise, mental health, gender and health, water and health, and more. These lessons are accompanied with an interactive learning activity (e.g. breathing exercises, crosswords) to engage students and an infographic for them to seamlessly integrate what they have learned into everyday tasks. Individuals on Dr. Wekerle's research team also post TED-Ed lessons onto YouTube. Titles such as "Water Insecurity in Indigenous Communities" and "Indigenous



WHAT CAN YOU DO?

I asked Makasa Looking Horse, "What can the readers do to support the Six Nations of the Grand River?" Firstly, she cautioned the readers to keep a watch on water bottling plants in their area and oppose them from taking clean aquifer water to protect it from mass consumption. Secondly, she urged individuals to stop buying Nestlé water to further her call for justice, as well as refrain from buying bottled water and use reusable water containers instead. Thirdly, if you wish to actively assist the reserve, donate any jugs of water to the Six Nations Food Bank.

To promote youth resilience, take the time to research issues from the reserves, listen when afflicted people speak their truth, and speak to your friends and family about what you have learned. The Woodlands Cultural Centre provides an excellent virtual tour of the residential school's history —you will be surprised at what you learn really happened recently. To support your readings, please refer to the YouTube channel, "ResilienceInYouth," and check out the JoyPopTM app.

Do not let your Indigenous neighbour's voices and concerns stay silent -educate yourself and advocate our shared health and wellness community.

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Adrianne Xavier is an Associate Professor in the Faculty of Social Sciences at McMaster University and serves as the acting director of the Indigenous studies and anthropology department. Currently, her research focused on community wellbeing, Indigenous rights and health, and socio-cultural anthropology.

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