Editor's Note: Indigenous Communities and COVID-19: Impact and Implications

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As the editors we honor those who have contributed to this special issue, *Indigenous Communities and COVID-19: Impact and Implications*. In this time of great uncertainty and unrest we felt compelled to seek a call for papers that would examine aspects of our traditional cultures focused specifically on COVID-19 and its disruptions to the dimensions of our wellbeing and the restoration of wellness. This virus has impacted every individual and family on this planet, and, has helped coalesce the pervasive intersectional struggles of Indigenous Peoples.

The articles selected are compelling in their ability to cast light over the shadows of discord and air of conspiracy surrounding this pandemic. They acknowledge that the grief and anguish buried beneath the soil of intergenerational trauma are only half our stories told. COVID-19 has given recall to examine the pervasive injustice of western power and privilege. Our people are dying at disproportionate rates not only from the direct respiratory effects of this virus, but as a result of a failed system that is inherently racist. We see our people; our mothers, fathers, grandmothers, grandfathers, children, and young people in great peril because of systemic health inequities and economic exclusion.

At the core of the articles presented is Compassion and Purpose. What has been shared represents the collective voice of resilience, resistance, adaptivity, and inventiveness against forces of oppression. These have been met with global resistance expressed in "Black Lives Matter", "The Me To Movement", "Standing Rock", "Ihumatao", "The Protectors of Maunakea", "First Nations Peoples Worldwide" and many other Indigenous demonstrations of collective sovereignty.

While it is imperative to acknowledge fundamental shifts in social relationships, policies, and social work practice these articles remind us that we need to sit for a while in the uncomfortable parts of our human psyche. If left unattended and unexamined they cause us sickness, pain, and spiritual

unsettledness. When integrated into a deeper consciousness this volatility dissipates into a higher order of understanding our ancestors knew and continually practiced.

We are reminded that to witness, means we must take heed, and listen. And while the world leaders and politicians pay attention to the urgency of what is happening in terms of the social, health, and economic costs of this pandemic, Indigenous people are harkening to the wisdom of their ancestors that if we, as a society, do not pay attention to our spiritual connections to the land we become disconnected; we become neglectful with little regard to the sacredness of breath and the sanctity of life. We become by default complicit in human suffering. It is all too convenient and comfortable to get swept in the catch-all "trauma-informed," "person-in-environment," "evidence-based", "culturally responsive", and decolonization rhetoric of mainstream social work, but the real question these articles address is what do they mean for Indigenous Peoples?

We recognize knowledge shared in these articles is nuanced, without limit or boundary, sacred, and, entreat us as readers and editors to give full deference to, and recognition of stories as the greatest source of a person's power. Echoed in the portent words of Kamehameha III's restoration of the Kingdom of Hawai'i, "*Ua Mau ke Ea o ka 'Aina I ka Pono*", "The Life of the Land is Perpetuated in Righteousness" are the tenets of truth, sacrifice, and love. That in spite of impending threat from hostile American business and colonial interest, Kamehameha himself, was attentive to, and strategic in his efforts to protect Hawaiian people and resources through the formalizing of a Hawaiian system of governance. These articles reflect similar protective instincts related to water rights, healthcare, food sovereignty, technology, social media, virus testing and contact tracing, community assets, cultural and linguistic responses, education, research, and practice.

The articles ask: what is in front of us that nothing should be taken for granted? That until we understand the lifeforce of trauma we cannot heal. COVID-19 has heralded an unprecedented era of discontent and social dystopia where we are all staggering in the uncomfortableness of not knowing. For Indigenous People however, there is no going back to normal. Normal was never just nor was it ever fair. Pre-COVID-19 life edified individuality, globalism, resource depletion, social disconnection, rage, and hate. Trauma is not new to us. We are the manifestations of the stories we are born into and those we create. These articles move us from affliction to triumph; from limitation to strength, from scarcity to abundance, and tap into the inner *puna* - the natural water springs and aquifers - of culture to reshape and retell the records of our histories.

The biggest take away we hope you gain from reading these articles is that we do not empower our communities, rather, as the authors share in their own ways, we simply offer the tools needed for

them to realize their own strengths, and inherent powers: their mana to restore integrity and take control of their destinies.

Angeles Arrien (1993) reminds us that whenever there is sadness, despair, or illness we must ask: When did we stop singing? When did we stop dancing? When did we stop "being enchanted by stories?" And "when did we stop being soothed by the sweet sound of silence". To this we add the poignant question shared by Dr. Elizabeth "Eli" Sumida Huaman who writes the introductory article for this special issue: "When did the breath of life start to kill?

Each contributor reminds us, that all of our dances, and all our stories matter, and they are pivotal to our authenticity and steadfastness as a People. How we leverage our cultural modalities to deal with the challenges ahead is the time when we begin to understand our wounds become the wisdom and the chronicles of our healing. It is befitting we end with the salient words of Dr. Concha Saucedo Martinez , founder of the San Francisco Instituto Familiar de la Raza, who said:

> As Indigenous People we share our intimate stories of colonization histories but as a general rule rarely do we ever focus on the scars, the sadness, the brokenness, and the wounds without speaking to our stories of resilience and hope, the lessons handed down to us from our ancestors, and, the need to forsake and forgive. To not do this is to condone genocide by-proxy. (personal communication, 2012)

It would be remiss if we, as editors, did not acknowledge our Aloha to you all at this time and express our deepest condolences to you who have lost family, friends, and loved ones due to this pandemic. We hope these articles inspire and enrich you in your enduring work.

Finally, we acknowledge this Special Issue would not have been possible without the commitment and tireless work of our Copy Editor, Gladys Rowe, and Operations Manager, Tabitha Robin (Martens). Given the short window of time we had to meet our publication objective we are deeply appreciative of your professionalism, your dedication to task, and your insightfulness - Mîkwêc.

Mahalo,

Peter Mataira, Paula Morelli, & Mike Spencer, *JISD COVID-19 Special Issue Editors*

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When humanity fails: A hopeful reminder[1]

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Keywords: nature • Indigenous peoples • decoloniality

Abstract
This essay offers a reflection on the cultural significance of breath for Indigenous peoples and the ways in which breath serves not only as a biophysical process, but also as an Indigenous metaphor for the gift, presence, and power of life. The link between humanity and breath of life imbued in all living creatures—animal, plant, and other species—reconfigures notions of hierarchy that threaten interspecies harmony and sustainability. Drawing from cultural stories, scholarly research, and poetry, the essay presents readers with consideration of institutional and policy failures in relation to Indigenous struggles and triumphs in order to reclaim decolonial notions of individual and collective agency.

The Call for Alliances

When did the breath of life start to kill?

As Quechua people, we are taught about the power of breath. The fresh Andean air is a gift that we have been given to live in this world and a reminder that with our aliveness comes a responsibility to do good with each thought and physical movement fueled by this breath. Our breath is powerful because it holds the ability to offer thanks, express reverence and awe, to transfer strength and healing, and to carry the words that we ask to make change through prayer. Individually, as a child, I remember my mother, as her mother did for her, sucking in air around my head space to remove the jumpiness that resulted from trauma. Collectively, when we make offerings to the mountains, we blow our breath on the offerings towards their directions. This is cultural protocol that reflects the way in which we honor the spirits of beings and our humble obligation to care for each other. Other Indigenous people also observe the power of breath—I have been moved by Kanaka Maoli and Māori friends who breathe deeply with a counterpart upon

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[1] This article is adapted from an online blog written by the author for *Agitate! Unsettling Knowledges* (https://agitatejournal.org) on March 30, 2020.

introduction, or Pueblo friends in New Mexico who breathe their gratitude in receipt of the small gifts I bring to their homes from my own community.

As I write today, the novel coronavirus Covid-19 pandemic has crossed oceans and lands, carried by human breath. We are asked to exercise physical distancing, to avoid the danger of being breathed on and breathing on others. The very exchange that we as Indigenous peoples have observed since we were first offered the breath of life has been transformed into the threat of death.

It is not hard to see how we have arrived at this point. We are not the only beings who were gifted breath of life. The earth's creatures also breathe and live. Like us, they give, they receive, they are conscious of the gift, and they have their own protocols. However, there is a relentless drive towards development and mass voracious consumption that characterizes what we can name as empire. This is ambition that hurts destroys: Land is only valued for what can be developed upon it or what can be extracted from it; animals are unintelligent beings seen only to exist for human survival or pleasure; and people's worth is based on their ability to labor and build economies. This is not breath for life.

The beloved Yupiaq scholar, Angayuqaq Oscar Kawagley, wrote,

> The Yupiat say "Yuluni pitalkertugluni," "Living a life that feels just right." One has to be in constant communication with each of the processes to know that one is in balance. If the feeling is that something is wrong then one must be able to check to see what might be the cause for unease or disease…In the Yupiat thought world, everything of Mother Earth possesses a spirit. This spirit is consciousness, an awareness. So the wind, river, rabbit, amoeba, star, lily, and so forth possess a spirit. Thus, if all possess a spirit or soul, then all possess consciousness and the power that it gives to its physical counterpart. (1998, p. 5)

Angayuqaq asked us to examine our lifestyles and technology, including mass urbanization projects, the complex network of modernity that he referred to as "disjointed" and "given to fragmentation," and to explore the disconnectedness that causes sickness not unlike what we are facing now. As a young scholar learning from him two decades ago, he inspired me to understand that technology is only a word to which we give meaning through our experiences and create purpose through our desires. Thus, if my purpose is to be excellent in order to show gratitude and to live kindly with the earth and her beings, then my science, technology, and modernity will reflect those values.

Angayuqaq also challenged us to consider our local understandings of ecology in order to better comprehend the earth's ecosystem toward her sustainability and the health of her beings. He

knew that alliances are required for this work—between humans and the earth's creatures, between materialistic desires and Indigenous sustainabilities, and between Western science and Indigenous knowledges that underscore morality and ethics towards life loving and giving approaches of/as *being* in this world. He also knew that these alliances required a shift in our thinking—"They await the time when the global societies evolve from consumerism and materialism to an orientation toward conservation and regeneration" (1999, p. 6).

When will we be ready? Many of us have been kept in the darkness, unaware of our own participation in the psychopathic dynamic of domination over earth, desire to have more, build more, do more, be more. Yet, no one life is above another, Angayuqaq explained (1997), because all of the earth's creatures are the best at being who they are. Can we say this of humanity? The question does not refer to how we are responding as individuals and collectives to the current health, policy, and morality crisis brought about by the pandemic but rather is in direct reference to what brought us to this point at this time. In more explicit terms—what would we lose if we remembered and observed local natural laws, re-considered the human-nature hierarchy, and studied, as did our ancestors for millennia and as do our scientists today, how the earth's ecosystem requires balance. What would it be like if we left the ukuku (bear[2]), the urpi (dove[3]), the bats, and the pangolins[4] alone? Who stands to gain from our shirking of these questions and our ignorance of this knowledge?

Something to Give

We live within a state of conditions created by coloniality (Rivera Cusicanqui, 2010). Coloniality refers to a system of desire and material aspiration linked with a global project of modernity through capital gain; these have shaped the domains within which we struggle and are defined by our relationship with empires—economic, institutional, normative, and knowledge systems that crush diverse ways of thinking and being in favor of a singular approach to human advancement (Quijano, 2007; Tlostanova & Mignolo, 2009). That nature has been violated, that our roles as caretakers of the land and her creatures have been denigrated, and that the very risk

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[2] https://www.nationalgeographic.com/animals/mammals/s/spectacled-bear/.
[3] https://www.npr.org/sections/thetwo-way/2017/11/16/564597936/why-did-the-passenger-pigeon-go-extinct-the-answer-might-lie-in-their-toes.
[4] Please see this link to learn more about endangered wildlife and current human community efforts to address this threat: https://www.worldwildlife.org/stories/the-fight-to-stop-pangolin-extinction.

factors (Benyshek et al., 2001) that make our peoples vulnerable to the virus—the result of colonial policies of land stealing, cultural loss and language genocide (Skutnabb-Kangas, 2000), food system disruption (Weerasekara et al., 2018), Indigenous governance dismantling (Native Nations Institute, 2008; Wilkins & Stark, 2017)—are *historical processes* of which Indigenous peoples must be aware. Scientists from various fields have also been witnessing, studying, and advocating (Garlick et al., 2011) for us to rethink our roles in this world (Diaz et al., 2018) as they advance proposals for identifying major challenges (Norton-Smith et al., 2016) and understanding our interconnectedness through empirical research (Hinchliff, 2015). But interconnectedness is complicated and personal. These days banners like "we are in this together" and "we will get through this together" appear on social media and are widely uttered, from news personalities to work colleagues. While such mantras are uplifting and may spur some action, their universalism is not realistic with regard to our current and daily realities. Furthermore, what is our long-term plan for sustaining interconnectivity?

Popular media warns that the virus attacks all—young and old, rich and poor, urban and rural. As a social scientist, I question each of these categories for their connotations and the real policy implications behind them, not to mention the ways in which we translate through our own sociocultural lenses the economic, political, and social ripple effects of the spread of the virus (Food and Agriculture Organization of the United Nations, 2020). For example, what value is placed in association with all of the ways in which we describe the virus, and does this language impact how we implicitly understand or prioritize each other? While I understand that the intent behind messages of togetherness constitutes appeals to think about individual and collective responsibility, we now know more than we did at the humanly visible onset of the pandemic that certain factors make people more susceptible to complications emerging from the virus—the elderly, those with compromised immune systems, and those with "underlying health" issues that manage to imply the absence of healthfulness and run the risk of categorizing people as weaker or more vulnerable in ways that relinquish control of how they are seen to others.

Behind each label is a life with their own fingerprint, their own pathway. When I hear words like "the elderly," I see my great aunts and the elder Quechua women with whom I still farm—many of them survivors of domestic and sexual violence. I see my disabled uncle who survived polio as a child and who is a respected person holding knowledge about our Andean ecology. These people are my teachers to whom I am not yet done giving through my listening

and work. When I hear "compromised immune systems," I see my family and community members who are survivors of cancers and those currently struggling through radiation treatments. When I hear "underlying health issues" immediately followed by heart disease, diabetes, and obesity, I see family members and friends with whom I work across Indigenous communities, including where I live in Dakota and Ojibwe country. I think of the remaining elder language speakers who care for their grandchildren and who show up for other people's kids every day to pass on the language. In some moments, my impulse is to push aside tragedy, to deny the possibility of our Indigenous worlds changing in unthinkable ways.[5] In these moments, I reach out to other close Indigenous researcher friends and family. Our default is not to console each other that everything will "get back to normal" because as the descendants of Indigenous people who suffered through great losses, we are still trying to figure out what normal is. In our talks, we are sometimes quiet, sometimes we laugh, and other times yet we are defiant—assuring each other that this is not how it ends, that our peoples *get to live*.

The big and small ways that we cope counter what Nelson Maldonado-Torres called the coloniality of being, which is "a process whereby the forgetfulness of ethics as a transcendental moment that founds subjectivity turns into the production of a world in which exceptions to ethical relationships become the norm," resulting in "giving birth to a world in which lordship and supremacy rather than generous interaction define social dynamics in society" (2007, p. 259). From our current vantage point, we can see that what has brought us to this point *and* how we respond reflect human internalization of coloniality as a state of being. Violation of nature is the norm. Choosing who gets an N95 respirator, a Covid-19 test, and maybe even a vaccine when available define the norm. Moreover, the virus is referred to as an enemy, part of a larger discourse of war so proudly touted by dominant political leaders (Okazawa-Rey, 2020).

What is the opposite of this kind of thinking and being? Postcolonial and anti-colonial scholars have long argued that those of us dehumanized, the subjects of colonial dominion, the so-called damned (Fanon, 2005) are the ones who must drive transformation of the world. Maldonado-Torres wrote that the damned are made because "what she or he has been taken from them…a subject from whom the capacity to have and to give has been taken away," which

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[5] For information on how Amazonian tribes are being impacted, see:
https://www.nationalgeographic.com/history/2020/06/disaster-looms-indigenous-amazon-tribes-covid-19-cases-multiply/.

eliminates gift-giving and generous reception, a "fundamental character of being in the world" (2007, p. 258).

I do not think the postcolonialists are wrong, especially if we take a deep and difficult dive into the ongoing threats to Indigenous self-determination (Corntassel, 2012), which is not just about what is done to us and what has been taken, but also how we participate or resist.[6] *And*, there are important stories—Indigenous community members,[7] activist-scholars,[8] health researchers,[9] teachers,[10] ordinary people doing what they can for others every day, now amplifying their efforts.[11]

We the damned still have something to give—that is, our breath towards life, our animation towards honoring the spirits of other beings. It is not too late for us.

To those who teach

Give me the snowy mountains and the yellow daisies,
the blue-green lakes,
the wallata and the hummingbird.
They are all interested in conversation.

Give me the darkest soil, a seed, and the water
that rushes from Huarisca.
The old man who can no longer walk,
nods approvingly when I ask about the Moon—
Will she help us with the crop this year?

Give me the cracked faces of the elder walmikuna,
with their full skirts and aprons, mouths full of coca leaves,
Together, we sift our bare feet through the earth.
This is my classroom.

Give me the female alpaca with her pierced ears,

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[6] See the work of how Indigenous communities and leaders resisting through FENAMAD: https://www.fenamad.com.pe/.
[7] For an example of Indigenous community members reclaiming schooling, see: https://kusikawsay.org/.
[8] See the work of Citizen Potawatomi scholar Kyle Powys Whyte here: https://www.researchgate.net/publication/312040136_The_Dakota_Access_Pipeline_Environmental_Injustice_and_US_Colonialism.
[9] See the work of AAIHB in protecting Indigenous health research here: http://www.aaihb.org/.
[10] Open access the work of decolonizing educators Flori Boj Lopez and Sandy Grande here: https://repository.usfca.edu/ijhre/vol3/iss1/9/.
[11] This refers to the relief efforts of Diné and Hopi community members in the Covid-19 crisis: https://www.gofundme.com/f/NHFC19Relief?utm_source=customer-andr&utm_campaign=p_cp+share-sheet&utm_medium=email.

who does not judge as I make my steep pilgrimage to the Apu,
Or the healer who passes me on the road,
walking briskly to make the most of the night.

These are my teachers—the dusty road, the boulders, the wind,
the sheep who wear necklaces made of flowers,
and the dog who walks me to school and lays across my feet.

I do not need an exam—written in a far-away office,
in a language that bites,
or a house made of concrete, four stories high,
with a tiled floor and a refrigerator—
to tell me that I have made it.

I am somebody.
Because I talk to the Sun while I wash my hair in the river.
I caress the plants and always have a kind word for the butterfly.
My teachers taught me that we are made of love.

Is there any other way to be? (Elizabeth Sumida Huaman, 2020)

Take a moment. Sit still. Do you feel the sound of your own breath? Where governments fail, you will not. You still have something to give your loved ones and the world in each breath of life. For those whose breath is leaving them through no fault of their own, offer them your hopeful breath from where you are. With each inhalation, remember our shared humanity and the love that brought you here, and with each exhalation accept the responsibility that comes with the gift. Never stop asking—*What will I do with this breath?*

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COVID-19 and the Indigenous Peoples of Turtle Island: Unusual and familiar times

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Abstract
The COVID-19 pandemic has led to significant societal disruptions throughout the world. While the virus can affect anyone, the lack of health infrastructure and significant social and health disparities found in many Indigenous communities, coupled with federal paternalism and on-going neglect of settler governments' legal responsibilities to First Nations Peoples, creates a context of substantial vulnerability. In spite of multiple, on-going challenges, many Indigenous people have responded with resilience and creativity in these difficult times. Focusing on the North American context of Turtle Island, this article describes the role of disease in colonization and the impact of past pandemics on Indigenous Peoples. The article reviews contemporary circumstances of Native people including health disparities and social determinants of health, followed by a description of the impact of COVID-19 on Native America, and how Indigenous Peoples are responding. This article, written in the midst of the pandemic, chronicles these times.

In early 2020, the world was in the beginning stages of a pandemic. While much remained unknown, the consistent public narrative emphasized elders and people with underlying health conditions are disproportionately affected. Indigenous Peoples were well aware that we faced significant risks and challenges.

At the time of this writing, fall 2020, the world has seen significant societal disruptions. To date, in the US alone there have been more than 8.1 million infections and almost 219,000 deaths from COVID-19 (Centers for Disease Control and Prevention, 2020), extended interruptions at all levels of educations systems, and significant economic fallout from businesses closures and extended stay-at-home orders. Exercising their inherent sovereignty, Indigenous Peoples have implemented sometimes parallel and sometimes distinct responses to the pandemic.

Turtle Island is a term for Native North America that comes from stories of our origins on these lands. While this article focuses primarily on that context, examples from other contexts

illustrate commonalities in Indigenous experiences. Indigenous Peoples are diverse but our differences are not defined primarily by the colonial borders that have crossed us.

This article describes the role of disease in colonization and the impact of past pandemics on Indigenous Peoples. The article reviews contemporary circumstances of Native people including health disparities and social determinants of health, followed by a description of the impact of COVID-19 on Native America, and how Indigenous Peoples are responding. This article, written in the midst of the pandemic, chronicles these times.

As a social worker and author, I find it unusual to be documenting an ever-changing situation. On the other hand, as an Indigenous person, I am well aware that this is not our first pandemic and health disparities are not a new phenomenon in our communities. For the Indigenous Peoples of Turtle Island, the COVID-19 pandemic is an example of unusual and familiar times.

Historical Perspectives

When Europeans came to the Western Hemisphere, they brought diseases that quickly spread. Many scholars believe disease had a much greater impact on Indigenous mortality than warfare (Venables, 2004). Indeed, some scholars believe diseases spread so quickly that germs depopulated many areas before colonizers arrived (Diamond, 1999; Mann, 2006). Other scholars point to a synergy between imported diseases and other aspects of colonization including destruction of the food supply leading to widespread famine and malnutrition, destruction of Indigenous trade relationships creating dependency on Europeans, and loss of land and its sustaining elements; these factors all being mutually reinforcing aspects of colonization that increased susceptibility to disease (Dunbar-Ortiz, 2014). Historical conditions that facilitated widespread disease sound much like contemporary theories of social determinants of health.

Indigenous communities around the world have received less care and experienced significantly higher mortality rates during pandemics than the rest of the population. For example, Māori mortality in Aotearoa/New Zealand during the 1918 flu pandemic was 7.3 times higher than non-Indigenous mortality. Native Americans experienced mortality rates roughly four times that of other groups in past influenza pandemics (Hershey, 2019). In the US, 2.1% (6,632 out of 320,654) of Native Americans died during 1918 pandemic, with the first civilian outbreak in the country occurring at a Native American boarding school (Adams, 2020). Likewise, during the H1N1 Swine Flu outbreak in 2009, Aboriginal people in Canada accounted for 17.6% of deaths

although only 4.3% of that country's population (Godin, 2020). As noted by Chief David Monias of the Pimicikamak Cree Nation in Manitoba, during previous pandemics, "while the rest of Canada received services … we were just left to die" (Godin, 2020, p. 1).

Contemporary Indigenous Peoples and Federal Responses to COVID-19

With the onset of COVID-19, there were firm directives from public health experts and governments to increase handwashing and social distancing. These seemingly basic recommendations were out of reach for many Indigenous people. Social distancing is impossible for people in overcrowded homes, as is washing hands without a reliable source of clean water. Health disparities are fueled by social determinants of health such as poverty and racism.

Public health responses reflect on-going tensions between Indigenous sovereignty and federal paternalism. Through treaties, the Canadian and US governments assumed responsibility for providing a variety of health and social services. Despite these legal mandates, services remain chronically underfunded and typically substandard. Access to services and supplies is difficult for Native people in remote areas. Getting timely and appropriate medical attention is difficult in communities where governments have failed to build a health infrastructure. Some people must travel hundreds of miles to the nearest medical facility (Godin, 2020).

Indigenous health services had difficulty getting test kits and appropriate personal protective equipment to respond to COVID-19. In a painful and macabre example, the Seattle Indian Health Board requested COVID-19 testing supplies but instead received a shipment of body bags. This mistake has an all-too-familiar resonance with many Native people (Ortiz, 2020).

In both Canada and the US, Indigenous people had to use legal channels to get support from the federal governments mandated to assist them. A stimulus law passed by the US Congress included $8 billion for Native Americans, but it took a legal suit against the Treasury Department before funds could be accessed (Godin, 2020). By that time, the Navajo Nation had a higher per capita rate of COVID-19 than any US state (Kristof, 2020). Funding delays left frontline workers without adequate protection and forced closure of some of urban Native health facilities (Godin, 2020).

The Canadian federal government pledged $216 million to protect Indigenous Peoples during the pandemic but this amounts to only around $142 per person and does not assist Native people living off-territory, thus excluding over half the Indigenous population. In response, the Congress

of Aboriginal People in Canada filed a lawsuit alleging the government's COVID-19 response is inadequate and discriminatory. Subsequently, the Prime Minister announced $54 million to support off-reserve Indigenous people (Godin, 2020).

COVID-19 has had a significant impact on many Native communities but the example with the most notoriety is that of the Navajo Nation. Navajo is the largest reservation in the US, home to 156,823 people, 47% of the Navajo population (Navajo Population Profile, 2013). By mid-May, the Navajo Nation had more than 4000 cases, surpassing the infection rate of any US state; 8142 cases as of July 11, 2020 (Navajo Department of Health, 2020). Like many people on the Navajo Reservation, Eric Freeland, age 34, lives in a crowded household and is diabetic, a preexisting condition that heightens risks associated with the coronavirus. He started coughing at the end of March but initially wasn't worried.

> When Freeland's breathing became short and stuttered, his mother drove him to the nearest hospital where within minutes of arriving, he lost consciousness. He awoke three weeks later, hooked up to a ventilator, from a medically induced coma. "We've had epidemics before. We've had viruses before. In general, we've had a lot of things attack us before," says Freeland, who has since recovered fully. But this is "the worst case scenario" (Godin, 2020, p. 1).

The US federal government has shirked its legal and moral responsibilities to Native Americans. Health equity and social justice principles must be centered to address the inequitable effects of the pandemic on vulnerable populations while others benefit from the power of privilege (Smith & Judd, 2020). Despite the severity of the outbreak and federal responsibility for Indigenous health, assistance from federal governments has been little and late.

Indigenous Peoples of Turtle Island Respond to COVID-19

We retain aspects of sovereignty and continue to demonstrate resilience forged through adversity. Indigenous responses to COVID-19 have been both active and proactive. Native communities have developed channels for sharing information, have implemented culturally appropriate precautions (including stay at home orders and travel restrictions), and continue to encourage traditional ways of fostering wellbeing.

Educating ourselves and sharing information takes many forms. Webinars enable Indigenous experts from around the world to share information about what is happening in their communities and to develop strategic, culturally appropriate responses. For example, on April 3,

2020, the Center for Indigenous Cancer Research gathered Indigenous experts from the US, Canada, and Aotearoa to share their knowledge and perspectives on *COVID, Cancer, and Indigenous people* (Center for Indigenous Cancer Research, 2020). Likewise, the University of Toronto offered a webinar on *COVID-19 and Indigenous Populations: Not Repeating the Past* on April 22, 2020 (University of Toronto, 2020) and the Native Organizers Alliance offered a webinar April 29, 2020*, Native People and Corona Virus: Maintaining Community While Social Distancing* (Native Organizers Alliance, 2020). These are only a few early examples.

With full awareness that many Indigenous people and communities lack adequate access to on-line infrastructure, strategies were developed to meet the needs of different contexts. For example, on the Navajo Nation where internet access is limited, most people have radios. A public service announcement in the Navajo language was recorded by a Navajo nurse to share information about what COVID-19 is, how it spreads, and why and how tribal members can take precautions (Native Organizers Alliance, 2020).

In Minneapolis and St. Paul, Minnesota, organizers from the Native American Community Development Institute had developed a list of community members for use in outreach about the US Census and voter registration. That list became an ideal tool for reaching out and checking on community members during the pandemic (Native Organizers Alliance, 2020). While far from a high-tech method, implementing a *phone tree* turned out to be an effective way for supporting this urban Native community.

Native communities have implemented their own public health responses to COVID-19. The Six Nations of the Grand River in Ontario, Canada already had an emergency response plan, *Project: Protect Our Elders*. Elders are keepers of knowledge and language, therefore crucial to continuity of the People. Dr. Theresa McCarthy, Onondaga Beaver Clan, described her Nation's response to the COVID-19 pandemic.

> What it involves is limiting outsiders to the community with check points and barricades at various points of entry on our reserve. This general pandemic response plan has been in place for a long time, since my mom worked in Six Nations public health and she's been retired for almost a decade now. But the plan was always to limit any outsiders from entry into the community as a measure to protect our people and to help curtail the spread of harmful disease in the event of a health crisis. Our elderly first language speakers and knowledge holders are our most precious resource and it's important to protect them at all costs and do what we can to limit the spread of the virus at Six Nations. So this is the plan. It's endorsed by both Councils. It's an enactment of sovereignty to protect our languages and culture for our future generations (personal communication).

Other Indigenous communities have also implemented public health measures to reduce the spread of COVID-19. For example, Lakota people set up check-points on roads to prevent outsiders from entering their territories (Abourezk, 2020). The Navajo Nation implemented strict lock-down measures and achieved a testing rate of 15.64%, far above the US average of 4.9%. As President Nez noted, "We are using our own sovereign ability to govern ourselves… The reason the Navajo Nation has managed this crisis isn't because of the federal government…. It's because of us" (Godin, 2020, p. 1).

The Lummi Nation began preparing for COVID-19 as soon as the virus was identified in China. They gathered medical supplies including test kits and created the first field hospital to address COVID-19 in the US. They declared a state of emergency a week before the US did, proactively implementing measures such as social distancing, drive-through testing, telehealth visits, and delivery of essential goods for elders (Godin, 2020).

Social distancing and stay-at-home orders were guided by cultural contexts. Dr. Evan Adams, Chief Medical Officer of the First Nations Health Authority emphasized, for Indigenous people, staying at home includes being out on our territories and does not require being inside a building. Being out on the land is important and healthy. This can include gathering, hunting, and fishing during the pandemic (Center for Indigenous Cancer Research, 2020).

Indigenous communities continue to encourage traditional ways of fostering wellbeing. Spring arrived on Turtle Island as the magnitude of the pandemic became clear. Although the threat of COVID-19 loomed large, the sap of the maple began to run, soon followed by berries. Signs of renewal abounded and medicines presented themselves for our use. People who gathered traditional medicines in the past went out on the land to do so. They were joined by others who wanted to learn traditional practices. People gathered medicines for their own needs and asked neighbors and elders who were unable to gather for themselves what they needed, thus reinforcing relationships of caring for each other. Bonds among people were developed, renewed, or strengthened during this difficult time.

Core expressions of Indigenous cultures such as ceremonies, singing, and dancing have always supported us and continue to sustain us in good times and bad. We are encouraged to do what affirms us, share it with others, or even sing or dance by ourselves. During the pandemic, the Indigenous Peoples of Turtle Island foster community in traditional and new ways, including on-line mechanisms like the Social Distance Pow Wow. This public Facebook group

(https://www.facebook.com/groups/832568190487520/) has almost 200,000 members and others can log on at any time without joining. On this site there are livestreams and videos of people telling traditional stories, sharing songs, dancing, and saying what is happening in their lives. This includes sharing about family members with COVID-19, community members who have died during the pandemic, babies who are born, and youth graduating. It is a community where joys and challenges are shared at all hours of the day or night. It counteracts social isolation and life disruptions.

Some say the Earth is taking a breath during the time of COVID-19. The air is cleaner and there is less noise with restricted human activity (Zambrano-Monserrate, et al., 2020). Many Indigenous people have also found this to be a time that allows the space to learn, whether it is language, gardening, regalia making, or medicine gathering. People are forced to pause from their usual responsibilities. Teaching and learning have become hallmarks of these challenging times. In places like Six Nations Reserve, children are going out on the land with their families as members of different generations seek to learn (University of Toronto, 2020).

There is a sense of empowerment during these challenging times. There is a conviction that we know what our communities need and we can develop appropriate strategies. As Dorothy Rhoades, Director of American Indian Cancer Initiatives at Stephenson Cancer Center in Oklahoma noted, we know what smallpox did to our communities. We have opportunities now to protect ourselves and others. We know how to limit exposure, and the importance of recognizing that some people may be asymptomatic yet still able to transmit the virus. While we may not be in large gatherings at this time, there is nothing like a virtual drum group to raise spirits. We will come together again (Center for Indigenous Cancer Research, 2020).

Moving Forward in this Sacred Time

This time of COVID-19 is much more than a health emergency. Many of us recognize this as a sacred time. During this pandemic we are well aware that death is close by while at the same time life is all around us. Grief and joy coexist. Blackberries are an important medicine and they remind us that the sweet, healing berry is part of a plant with sharp thorns. Balance and coexistence are part of the natural order that many human beings have forgotten. The thorn of COVID-19 is an important reminder.

We have had similar experiences in the past. COVID-19 is here now but we know we have experienced disease before. This is also a time of societal unrest where people are confronting systemic inequality and racism. Structural inequity is inherent in colonial systems. This is nothing new. We have always had people stand up for justice. At this time, some protests have spun off rioters fueled by anger and looters filled by greed. They have vandalized corner stores, youth centers, and small businesses central to our communities. This is not the first time we have experienced violence or that food supplies and things we have built have been destroyed.

Connections and relationships persist and are often strengthened through adversity. We remain resilient in these unusual and familiar times. As collective people, the strength of some, supports the rest of us through moments of despair. There are days when each of us may feel downhearted or is physically unable to move forward but as Patricia Longboat of Six Nations reminds us, as long as there is smoke rising from our Longhouses, as long as someone continues to raise their pipe in prayer, we know that we will continue to be alright (University of Toronto, 2020).

This is a time of regeneration of the world and ourselves. A time of continuity and responsibility for the future. We approach these challenges grounded in our traditional teachings and inherent sovereignty as Indigenous Peoples.

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Indigenous Nationhood in the Age of COVID-19: Reflection on the Evolution of Sovereignty in Settler-Colonial States

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Abstract
This study undertakes a cross-Indigenous systems-level analysis of the assertion of nationhood and sovereignty by Indigenous Peoples within settler-colonial states (Canada, Australia, New Zealand, and the United States), by highlighting public policy and broader public health responses to the COVID-19 pandemic according to the framework developed by Cornell (2015). Data was collected through comprehensive searches of policy announcements and media related to COVID-19 and Indigenous Peoples in settler-colonial countries (Canada, Australia, New Zealand, and the United States) by using the following electronic databases: Factiva and advanced searches of Indigenous organisation and national government websites. The results of the policy and media scan were categorized according to the framework developed by Cornell (2015). The framework includes instances of imposition of boundaries, organizing as a political body and acting as a nation on behalf of Indigenous goals. The results show specific trends in the process of Indigenous assertion of nationhood during the COVID-19 pandemic. These trends are macro-level and influenced by the historical, social, and political circumstances of the states in which the respective Indigenous communities reside. The framework was identified most accurately in Canada, followed by the United States, and Australia. While Cornell's framework provides a practical scale of reference, it does not capture the entirety of the settler-colonial Indigenous experience. As the COVID-19 pandemic continues to evolve, we expect further development of the settler-colonial assertion of Indigenous public health and nationhood.

Introduction

Colonialism, the process by which a political power exerts its control over another foreign territory, has strong roots in Canada, Australia, New Zealand, and the United States (CANZUS). Starting in the late 15th century, Europeans practiced genocide through colonial practices including displacing and eliminating Indigenous Peoples from their lands (Truth and

Reconciliation Commission of Canada, 2015). The same processes of colonialism remain in modern-day settler-colonial societies (National Inquiry into Missing and Murdered Indigenous Women and Girls, 2019), where pandemics have historically caused the eradication of Indigenous Peoples and remain a threat to Indigenous Peoples' existence and wellbeing. Early European settlers brought diseases to which Indigenous Peoples had no natural immunity; including smallpox, tuberculosis, influenza, and measles, all of which left the population devastated and significantly reduced in numbers (Smithers, 2020). More recent infectious diseases that disproportionately impacted Indigenous communities include the 1918 Spanish flu, H1N1, SARS, HEPC, and HIV (Duncan et al., 2011). Aside from Indigenous Peoples' lack of immunity to foreign diseases, the community spread of post-contact diseases is also influenced by the social and political circumstances established by European colonisers. Colonisation has effectively left Indigenous communities powerless against pandemics (Smithers, 2020).

Indigenous Peoples in the CANZUS countries continue to undergo the reclamation of self-government as an Indigenous right and practice, asserting various forms of nationhood along the way. Cornell (2015) argues that exerting nationhood and sovereignty requires the following actions by Indigenous Peoples: (1) identifying as a nation or a people which involves various degrees of the imposition of boundaries which separates the "us" from the rest of the social system, re-adoption of traditions of identity and organization such as identifying with precolonial social identities and structures, and the assertion of self-governing power; (2) organizing a political body with a decision-making process, the ability to implement these decisions, resolve disputes and sustain productive relationships with other governments and entities; and (3) acting on behalf of Indigenous goals by defending the right of self-government not only through moral or legal arguments but also through deeds, advocacy and competence. The current COVID-19 pandemic has presented Indigenous communities with increased urgency and agency in reasserting the cultural, political and social aspects of their nationhood. Currently, the healthcare system imposed on Indigenous Peoples within CANZUS countries is defective in two critical ways. First, Indigenous healing practices significantly differ from mainstream healthcare practices, with the latter generally more available to Indigenous communities. Additionally, there is a lack of equitable interventions and services in communities that rely on understaffed healthcare posts – a result of jurisdictional disorganization with regard to funding and delegating responsibilities (Osman, 2020). As the healthcare crisis continues to evolve, Indigenous communities are faced

with complex issues that require them to protect the health and safety of their citizens. As such, actions taken by Indigenous communities and by governments interconnect and can lead to a process of re-emergence of Indigenous nationhood. This process can be examined through the framework documented by Cornell (2015).

This paper seeks to present a cross-Indigenous systems-level view of the CANZUS states and Indigenous Nations/Tribes/communities' responses to COVID-19. By highlighting public policy and broader public health responses to the pandemic, we aim to analyze the assertion of nationhood and sovereignty by Indigenous Peoples within settler-colonial states.

Methods

The research relies on data collected through comprehensive searches of policy announcements and media related to COVID-19 and Indigenous Peoples. First, a comprehensive search of Indigenous-specific COVID-19 related policies announced between December 1st, 2019 and June 10th, 2020, in settler-colonial countries (Canada, Australia, New Zealand, and the United States) was conducted in June 2020. The following electronic databases and websites were used to scan for relevant news reports, national Indigenous organizations' policy announcements and federal/national governments policy announcements:

- Media: Factiva
- National Indigenous organisations: afn.ca, abo-peoples.org, itk.ca, metisnation.ca, nwac.ca, nafc.ca, pauktuutit.ca, ncai.org, reconciliation.org.au, foma.org.nz
- Federal/national Government and Indigenous-specific agencies: pm.gc.ca, sac-isc.gc.ca, canada.ca/en/indigenous-services-canada, bia.gov, ihs.gov, indigenous.gov.au, ministers.pmc.gov.au/wyatt, niaa.gov.au, tpk.govt.nz/en

Second, in completing the media search, the following keywords were used in the Factiva databases (Major News, Business Sources and Newspapers): (COVID-19 OR Coronavirus) and (Indigenous* OR "First Nation" OR Inuit* OR Metis* OR "Native American" OR "Native Alaskan" OR "Native Hawaiian" OR Aboriginal* OR Maori*). For the Canadian federal government sources search, the following keywords were used in the Google advanced search database: (COVID-19 OR Coronavirus) and (Indigenous OR Nation OR Inuit OR Métis OR Aboriginal). For Indigenous national organizations and for non-Canadian, federal/national Indigenous agencies via Google advanced search: (COVID-19 OR Coronavirus). The term

'Indigenous' is used throughout this study to broadly refer to this ethnic group of people, as it the most inclusive title internationally (legally, the term 'native' has no status in Canada).

In total, the search yielded over 2600 results from all databases (government and organizations: 1553; media:1128). Many results were duplications or outside the scope of our defined parameters (noted above). These results were excluded during the first screening. All remaining media reports and policy announcements were read to determine eligibility.

In order to be included, results had to:

- Be published in English;
- Describe Indigenous Peoples of Canada, Australia, New Zealand, and the United States;
- Report findings on Indigenous-specific policies as they relate to COVID-19.

Following the initial screening process, duplicated policies, regardless of source, were excluded. A thematic analysis was conducted to determine significant themes common amongst the remaining COVID-19 responses. We subsequently used the Cornell framework on Indigenous nationhood to help guide our analysis and categorize our themes.

Results

Identifying as a Nation or a People

Identifying as a nation often involves interactions among at least three sets of influences: imposed boundaries of various kinds, older but still living traditions of identity and organization, and asserting self-governing power in contemporary times (Cornell, 2015). We identified the following policies and events as they relate to the three sets of influences.

Imposition of boundaries. Indigenous communities have strongly asserted sovereignty and independent decision making as a response to the COVID-19 pandemic. National and regional governments have generally acknowledged that Indigenous communities have the right to control their borders and are entitled to national funding to support their efforts combating the disease. In Canada, the Haida Gwaii Tribal Council passed a resolution that restricted access to First Nations lands to Indigenous residents and essential service providers until provisions, including prioritized testing for residents of remote and Indigenous communities, screening of non-residents, and contact tracing and communications protocols, are in place (Harrnett, 2020). The Chief and Council of Wiikwemkoong First Nation have declared a state of emergency in the Wiikwemkoong Unceded Territory. Under the state of emergency, a travel order was passed, restricting all non-

essential travel by residents. All non-residents who are not providing essential services are banned from entering the territory (Romaniuk, 2020). The Nuu-chah-nulth Tribal Council in British Columbia strongly opposed the opening of the Canadian border for the duration of the pandemic and until Nuu-chah-nulth leaders advise otherwise (Harrnett, 2020).

In Australia, the national government is empowering local Indigenous communities to take the steps they think are necessary to prevent a COVID-19 outbreak. These steps include the enforcement of travel restrictions to and from their communities (Department of the Prime Minister and Cabinet, 2020c). Following calls from many Aboriginal and Torres Strait Islander leaders and remote communities, the Australian Government restricted travel into remote communities under the *Biosecurity Act 2015*. Several Indigenous communities and the Western Australian Government implemented similar measures (Department of the Prime Minister and Cabinet, 2020b), while the Northern Territory banned all non-essential visits to some 70 remote settlements, endorsed by the major Aboriginal land councils (Aikman, 2020). The Australian Government also developed a framework to help remote communities work with states and territories in deciding when to lift these restrictions (Australian Government, 2020c).

In the United States, a national emergency declaration was made on March 13th, 2020 which stipulated that Tribal governments may choose to receive assistance as a sub-recipient under a state or as a recipient by signing a FEMA-Tribe Agreement to become a recipient (Federal Emergency Management Agency, 2020). For example, Tribal governments in the State of Oklahoma implemented measures to slow the spread of the virus, including closing government offices, schools, and casinos, plus postponing routine and non-emergency medical care (Newland, 2020). Other Tribes implemented policies that would help mitigate the spread of the virus, such as a nightly curfew and 57-hour weekend lockdowns by the Navajo Nations and The Pueblos. (Cuthand, 2020). Additionally, non-Native Americans have been banned from using roads on reservations that have created checkpoints and mobile health units, all in an attempt to keep residents of Tribal lands safe (Donaldson, 2020). Sovereignty over Indigenous lands was affirmed by an unrelated 2020 US Supreme Court decision that ruled the eastern half of Oklahoma can be considered Native American territory with full Indigenous legal jurisdiction (Wolf & Johnson, 2020).

Asserting self-governing power in contemporary times. The COVID-19 pandemic has put Indigenous leaders in a situation where they have been able to further assert their right to self-

governance in the face of colonial structures and laws. For example, Chief Bobby Cameron of the Federation of Sovereign Indigenous Nations in the province of Saskatchewan, Canada declared that government public health orders do not supersede First Nations law and treaties. He also asserted that maintaining tradition and ceremony is even more critical during the COVID-19 pandemic (Taylor, 2020b). This event was followed by Canadian Prime Minister Justin Trudeau stating that Indigenous community leaders know what needs to be done to keep people safe (Malone, 2020a). Also, Prime Minister Trudeau assured that there will be distinctions-based funding for the Métis Nation and that the federal government will partner with the Métis National Council to ensure the Métis Nation is resourced (Métis Nation, 2020a). Conversely, the Australian Northern Territory Police faced significant challenges in enforcing social distancing measures in Aboriginal communities, especially when dealing with cultural events. This situation required them to work with the communities, elders, and Australian Indigenous organizations to get through the appropriate messaging (Matthews, 2020).

Traditions of identity and organization. Indigenous communities have sought to express their cultural independence while dealing with the COVID-19 pandemic. This effort was showcased when the Beardy's and Okemasis Cree Nation's Chief and Council put in place regulations to allow the continuation of a sun-dance ceremony. This sacred ceremony was broken up by armed Royal Canadian Mounted Police officers, who were dispatched to the ceremony to investigate a violation of public health orders (The Canadian Press, 2020a). Community participants assured that they were physical distancing and having body temperatures taken; therefore, enforcement of a provincial order was not required (Malone, 2020b).

The Assembly of First Nations (AFN) in Canada provided guidelines for using tobacco in ceremony for First Nations, in a move to ensure safe use of traditional practices during the pandemic (The Assembly of First Nations, n.d. b). Alternatively, communities across North America have found a way to host traditional ceremonies and powwows by moving them online (Alvarez & Simard, 2020). There was also an observation that Indigenous culture is thriving in locked down communities across northern Australia, a result of families connecting and partaking in the cultural teaching of children that has been neglected for a long time (Taylor, 2020a).

Organizing as a Political Body

It is one thing to identify as a nation and another to acquire the organizational capacity sufficient to formulate and implement collective decisions consistently and effectively (Cornell, 2015). Although many Indigenous Communities in Canada, Australia, and the United States identify as nations within nations, they generally lack the infrastructure, resources, and technical capability to implement collective decisions when it comes to responding to the medical and social effects of COVID-19. However, national and regional governments have previously provided funding and resources for Indigenous communities so that they can effectively respond to health crises. These supports have traditionally been linked to specific government restrictions and monitoring, which, during the time of COVID-19, would hamper effective public health interventions as government spending and bureaucratic restrictions can prevent communities from tailoring their health responses to the needs of their citizens.

Deferral to Indigenous leadership regarding the utilization of national government funding. National governments have imposed minimal restrictions on their funding for Indigenous Communities and services during COVID-19. Governments have generally deferred to Indigenous leadership when it comes to funding utilization, thereby allowing communities to define their infrastructure and service needs.

In Canada, the federal government has been flexible in terms of funding allocation and policy decisions for Indigenous communities. The federal government provided an investment of $650 million to support Indigenous communities with health care, income support, and new shelters for women (The Canadian Press, 2020). Among this funding, $305 million is dedicated to a new Indigenous Community Support Fund, which helps Indigenous communities prevent, prepare, and respond to the coronavirus pandemic (Government of Canada, 2020). $285.1 million is dedicated to supporting the ongoing public health response to COVID-19 in Indigenous communities (Justin Trudeau, Prime Minister of Canada, 2020), while $100 million will help communities update and activate pandemic plans and support the effective allocation of the limited public health resources (Government of Canada, 2020). These investments will fund community-led responses to the pandemic and provide targeted increases in primary health care resources for Indigenous communities.

The Australian Government made $123 million available over two financial years for targeted measures to support Indigenous businesses and communities in their responses to

COVID-19 (Department of the Prime Minister and Cabinet, 2020d). Moreover, the Aboriginals Benefit Account will deliver $10 million across the four Land Councils in the Northern Territory to allow them to address immediate infrastructure needs and travel expenses associated with people returning to their homelands (Department of the Prime Minister and Cabinet, 2020d).

In the United States, the Coronavirus Aid, Relief, and Economic Security (CARES) Act signed on March 27th, 2020, provides additional funding to assist Tribes in preventing, preparing for, and responding to coronavirus. The CARES Act includes a coronavirus Relief Fund that includes an $8 billion set aside for Tribal governments (United States Department of the Interior, 2020a). Out of these funds, $420 million will be utilized for direct payments to Tribes (United States Department of the Interior, 2020b), while $40 million is set-aside as funding for Tribal nations, Tribal organizations, and Urban Indian Organizations, to be distributed by the Centers for Disease Control and Prevention (CDC) (National Congress of American Indians, 2020a). Tribal governments must provide payment information and supporting documentation when requesting these funds from the government (United States Department of the Interior, n.d.).

Government support to increase the capacity of Indigenous communities to implement public health measures effectively. In addition to direct funding support, governments have provided direct medical, technical, and resource supports for communities, to assist them in effectively implementing public health programming.

The Canadian government has been delivering large amounts of protective equipment to Indigenous communities to ensure they can protect their citizens and front-line workers against the pandemic. Indigenous Services Canada had shipped 845 orders of Personal Protective Equipment (PPE) to First Nations communities (Wright, 2020). Also, $285 million funding was earmarked to provide more nurses, specialized supplies and support work with Indigenous communities on continued community-driven responses (The Canadian Press, 2020). Indigenous Services Canada is monitoring the food supply across First Nations and is in regular discussions with territorial governments to ensure integrity of the food supply chain. Also, $25 million was provided to improve isolated northern communities' access to food (Mendleson, 2020).

The Australian Government invested $3.3 million to establish a rapid COVID-19 Remote Point of Care Testing Program with 83 testing sites for remote and rural Aboriginal and Torres Strait Islander communities (Department of the Prime Minister and Cabinet, 2020a). Additionally, three COVID-19 fever clinics for Indigenous and Torres Strait Islanders were opened in

Queensland (Smith, 2020). The Northern Territory Government rolled out online audio resources in 17 different Indigenous languages to keep people informed about the latest information on the COVID-19 pandemic. Moreover, hundreds of care packages have been distributed to isolated Aboriginal communities across New South Wales in a joint food relief initiative from the NSW Aboriginal Land Council and the state government (Archibald-Binge, 2020).

In the United States, a $750 million federal fund was provided for Indigenous communities in coordination with the Indian Health Service (IHS) to help Tribal Nations develop, purchase, administer, process, and analyze COVID-19 tests, scale-up laboratory capacity, and trace the spread of the disease (National Congress of American Indians, 2020b). Also, the Department of Health and Human Services (HHS) earmarked $500 million in payments to the Indian Health Service and Tribal hospitals, clinics, and urban health centers to support the Tribal response to COVID-19 (US Department of Health & Human Services, 2020). As a result, the Indian Health Service formed a Critical Care Response Team of expert physicians, registered nurses, and other healthcare professionals to provide urgent lifesaving medical care to COVID-19 patients admitted to IHS or Tribal hospitals (Indian Health Service, 2020c). The Indian Health Service has been given priority access to rapid point-of-care COVID-19 test systems as part of efforts to expand access to testing in rural communities (Indian Health Service, n.d. d). IHS also announced the expansion of Telehealth services during the COVID-19 response which has allowed more American Indians and Alaska Natives to access the healthcare they need from their homes (Indian Health Service, n.d. d).

Ability to sustain productive relationships with other governments and organizations. Implementing effective public health responses requires close and trustworthy coordination between governments and Indigenous leadership. Also, funding allocation and distribution entails the input of Indigenous communities to determine their needs.

National Indigenous leaders in Canada have been liaising with the Prime Minister and federal ministers on the COVID-19 pandemic. This Nation-to-Nation coordination allows for better planning and preparedness to addresses the unique situation and needs of Indigenous Peoples. The Assembly of First Nations National Chief secured a commitment that the $100 million announced for supports will provide for the actual needs of First Nations in response to the pandemic (The Assembly of First Nations, 2020a). The Minister of Crown-Indigenous Relations has also discussed with the Métis National Council and the CEOs of Métis Nation capital

corporations from the five westernmost provinces on how to ensure access of Métis businesses to new federal loans and loan guarantees for small business, such as the Canada Emergency Business Account that provides interest-free loans up to $40,000 (Métis Nation, n.d. b).

The National Indigenous Australians Agency (NIAA) has been actively working across government and with industry stakeholders to ensure that remote community stores and food security are part of the government response to COVID-19. The NIAA has contacted managers of more than 200 stores servicing Aboriginal communities across Australia to ensure the government understands their support needs (Australian Government, 2020a). In the United States, the IHS held rapid discussions with Tribal leaders to guide their distribution of $134 million in new resources to respond to COVID-19 in American Indian and Alaska Native communities (Indian Health Service, 2020a).

Acting Like a Nation on Behalf of Indigenous Goals

Indigenous communities are exercising practical decision-making power and responsibility, even in cases where central governments deny recognition. In Canada, the Assembly of First Nations (AFN) Executive Committee passed a motion on March 23rd declaring a State of Emergency respecting First Nations and the COVID-19 pandemic. AFN leadership called on all governments to provide funding and support for First Nations based on their needs and to ensure First Nations leadership is involved in all governmental and intergovernmental discussions and responses to the COVID-19 pandemic (The Assembly of First Nations, 2020a). The Métis National Council held a conference call with members of its Board of Governors to discuss its strategy to protect Métis Nation citizens, ensure public health authorities do not neglect citizens, and communicate the needs of the communities to other jurisdictions and the public at large (Métis Nation, 2020c). A practical example of nationhood-in-action is the Manitoba Metis Federation, which rallied mobile homes and two 48-bed secure camps for use by self-quarantining citizens (Métis Nation, 2020c). Even still, communities such as the Fort McKay Métis are operating without any relief funding from the provincial or federal government. Instead, they have been taking care of themselves through agreements with local companies and spare revenue already in the community (Williscraft, 2020).

The Torres Strait Regional Authority in Australia offered a COVID-19 related community initiatives grant for community organizations to sustain operations that are essential to the

community or to provide additional supports during and after the pandemic (Australian Government, 2020g). The South West Aboriginal Medical Service has been coordinating more than 70 special care packages for at-risk Aboriginal Elders in their region ("South West," 2020).

In the United States, the Association of American Indian Physicians and National Indian Health Board held an "Ask A Native Physician" COVID-19 Town Hall (Indian Health Service, 2020b) while the Center for American Indian Health has mobilized over 200 Native American health workers to assist their communities. The Centre has also been distributing food, water, personal protective equipment, and information on COVID-19 (Kristof, 2020). Other Native American communities, such as the Oglala Sioux, have relied on traditional practices used by their ancestors to survive harsh conditions, such as seed saving, canning, and dehydrating (Krishna, 2020).

Discussion

The framework created by Cornell (2015) on Indigenous nationhood posits three criteria that should be observed when gauging the degree of assertion by Indigenous communities in re-claiming their sovereignty. The results of our policy and media scan show specific trends in the process of Indigenous assertion of nationhood during the COVID-19 pandemic. However, these trends are macro-level and influenced by the historical, social, and political circumstances of the states in which the respective Indigenous communities reside. While Cornell's framework provides a practical scale of reference, it does not capture the entirety of the settler-colonial Indigenous experience. Specifically, the lack of results on the New Zealand Maori experience in our search is an indication of the existence of models of Indigenous Nationhood that do not fit within Cornell's framework. New Zealand's response to COVID-19 did not require a separate response for Maori citizens, who's culture and governance structures are integrated within the national government's decision-making processes. The Maori experience signifies that the maintenance of nationhood does not necessarily require the physical-procedural separation between Indigenous communities and state governments. It is essential to acknowledge that the process which individual communities, at the micro level, choose as a mechanism of the assertion of their nationhood and sovereignty does not, nor should it, necessarily fit within any framework.

Identifying as a Nation or People

The degree to which communities adhere to the notion of a collective "self" depends on the historical process of cultural development of that individual nation. In Canada and US, we see that border control, the regulation of the movement of people, and the freedom to practice traditional culture are essential markers of the assertion of nationhood for some Indigenous and Native American communities. These communities' control over their geographic spaces and social interactions allows for a visible demarcation of nationhood. Also, the actions and pronouncements made by national Indigenous organizations, such as the ones representing First Nations, Inuit, and Métis communities, acknowledge that a supranational form of organization has already developed within the Indigenous context in North America in general and in Canada in particular. In order for these forms of inter-nation organizations to exist, it requires a predisposing emergence of nationhood among the constituent communities of these organizations. In Australia, national and regional governmental involvement is necessary to control the movement of people to and from Indigenous communities; as such, the Indigenous assertion of nationhood in Australia is still largely dependent on the state.

Organizing as a Political Body

The assertion of nationhood during a developing pandemic requires tools and resources to engage in an effective public health response. We observed within all examined states a need for national and regional governments to provide funding and technical resources necessary to counter the pandemic. Notably, we observed a deferral of control by the Canadian government to Indigenous communities for the utilization of pandemic-support funds. Indigenous communities have relatively high levels of freedom to tailor the public health response to the specific needs of their communities. Within the United States, the existence of the Indian Health Service, a federally administered system, requires a necessary degree of coordination with Indigenous communities to deploy the health resources necessary for the pandemic response. However, the dispersal of funds directly to communities still requires a demonstration of need and adherence to government-set guidelines and oversight. Again, there exists a greater need for direct government intervention in Australia, where the national and regional government-built health clinics provide healthcare directly to Indigenous communities.

Acting on Behalf of Indigenous Goals

In response to the COVID-19 pandemic, Indigenous communities have been able to exert practical decision-making power and responsibility. In Canada, Indigenous communities have exercised the reassertion of nationhood and acted as a sovereign political organism effectively by issuing emergency declarations, providing direct resources and services to their people, and directly lobbying the state to ensure their needs are being addressed. In the United States, there has been more emphasis on the role of Indigenous healthcare professionals in supporting their communities while in Australia; the Indigenous community healthcare response is limited by a greater reliance on government support.

Conclusion

The Canadian experience with COVID-19 showcases a trend that has been developing over time of relinquishing state control over Indigenous matters to Indigenous communities and nations themselves. Although this experience is not uniform across the country, it does reflect the evolution of Indigenous nationhood in Canada. While the United States federal government regularly distributes funding to communities and regional health efforts, we have seen an increase in agency and autonomy given to Indigenous groups in utilizing these funds. In comparison, Australian Indigenous nationhood continues to reflect the extreme cultural, historical, and colonial experience of Indigenous Australians. As the COVID-19 pandemic continues to evolve, we expect further development of the settler-colonial reassertion of Indigenous public health and nationhood.

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SOCIAL DEVELOPMENT

Indigenous Peoples and the COVID-19 Social Amelioration Program in Eastern Visayas, Philippines: Perspectives from Social Workers

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Abstract
Amid the COVID-19 response, Indigenous Peoples suffer disproportionately and are especially at risk of being left behind in government responses due to the various inequalities they face. This paper discusses the treatment of Indigenous Peoples in the Philippines government's COVID-19 policies and programs, and examines the implementation of the Social Amelioration Program (SAP), and its impact, or lack thereof, in the lives of Indigenous Peoples. This paper used a combination of secondary data from government policies and news articles, and primary data from ten rapid ethnographic interviews with social workers and SAP implementers from the regional social welfare agency of Eastern Visayas. We conducted a preliminary analysis on the various issues surrounding the SAP implementation as well as steps taken, or lack thereof, in making the program more inclusive and responsive to the plight of Filipino Indigenous Peoples in the region - a hazard prone area of the country. This essay is divided into three parts. The first illustrates the virus outbreak in the country and the challenges Indigenous Peoples face during the pandemic. The second discusses the policy that created the SAP and issues surrounding it. The last one highlights the local social workers' perspectives and recommendations on how the government could better contribute to the social development as well as general wellbeing of Indigenous Peoples during and after the pandemic.

Introduction

This essay contributes to pragmatic studies related to Indigenous Peoples during the COVID-19 pandemic and examines the treatment of Indigenous Peoples in the Philippines government's COVID-19 response. The principal research question of this study is: *How did the Philippine government support Indigenous Peoples in the time of COVID-19 pandemic?*

We supported this by answering the following questions:

1. How did the current pandemic impact or challenge Indigenous Peoples?

2. How did the COVID-19 Social Amelioration Program or SAP help, or not, in alleviating these challenges?

3. How can the SAP better contribute to the social development as well as general wellbeing of Indigenous Peoples during and post-pandemic?

As a result of public health restrictions that prohibited face-to-face fieldwork, we conducted our key informants interview via phone calls, social media platforms, and email correspondences between May to August 2020. Due to the imposed mobility restriction, we situated this essay on the Indigenous Peoples located in Eastern Visayas, Philippines where the first author resides. A total of 10 key informants participated in this study: four social work practitioners from the Department of Social Welfare and Development, two social work academicians from the Leyte Normal University, and four social workers from non-government organizations working in Eastern Visayas. While we acknowledge that the time-sensitive nature of this research meant that our primary informants are relatively few, we made sure to collect sufficient qualitative data which enabled us to provide a substantial description and analysis of our informants' responses, which in turn, reflect contextual realities on the ground. We enriched our analyses by conducting secondary data analysis of available information obtained from the United Nations' database, national and local news publications, social media postings, and official government policies and press releases.

COVID-19 Pandemic and the Filipino Indigenous Peoples

The unprecedented and rapid disruption of the COVID-19 pandemic has widened the political, social, and economic crevices in the Philippines where lockdown measures were popularly used to manage the outbreak. Following the announcement of the first local COVID-19 case in the Philippines last March 2020, President Rodrigo Duterte placed the National Capital Region under General Community Quarantine (GCQ), triggering the exodus of people outside the State's capital to various provinces. Because of the rapid increase of cases, the entire Luzon island which consists of eight regions, was placed under Enhanced Community Quarantine (ECQ). Under ECQ, peoples' mobility was restricted except for essential businesses like health, finance, and food. While the country has one of the strictest and longest lockdowns in response to the pandemic (Dadap-Cantal et al., 2020), the Philippines still has one of the fastest rise in cases in all of

Southeast Asia (Esguerra, 2020). As of writing, the country has 365,799 cases confirmed, of which 6,915 died and 312,691 recovered (DOH, 2020).

While health experts note that the virus doesn't discriminate, contemporary societies do. Amid the response, Indigenous Peoples suffer disproportionately and are especially at risk of being left behind in government responses due to the various inequalities they face. The pandemic poses serious effects on the wellbeing, livelihoods and health of over 470 million Indigenous Peoples of the world (DeLuca, 2020; UNFAO, 2020). Indigenous Peoples in most countries fall into the most vulnerable health category (UNDESA, 2020) and the pandemic exacerbates their plight especially on issues of malnutrition, basic healthcare, quality education (UN EMRIP, 2020), and domestic violence (Klower, 2020).

In the Philippines, a regional social movement warned that Indigenous Peoples will die of hunger - not the virus (AIPP, 2020). Approximately 14-17 million Filipino Indigenous Peoples who belong to around 110 ethnolinguistic groups (UNDP, 2013) are heavily reliant on farming, fishing, and creating handicrafts. The lockdown along its restrictions on peoples' mobility to go about their daily livelihoods have a major impact on their water, energy, food, and health security, among others. Even before the pandemic, Indigenous Peoples have struggled to cope without a balanced diet, adequate food, as well as access to, and control over basic social services. More than ever, health and socio-economic relief programs are direly needed by Indigenous Peoples in order to survive in the ongoing pandemic.

On the other hand, the crisis opened an opportunity to highlight indigenous socio-cultural assets that have long been used by Indigenous Peoples in protecting themselves from disease outbreaks. For example, indigenous cultural communities in the Cordillera region have invoked indigenous rituals to implement 'indigenous lockdowns' which contributed to decreasing cases of infections. Lapniten (2020) reported that in the town of Bauko, an indigenous variation of a lockdown known as *tengao*, was invoked by indigenous community elders and implemented widely by the town through an official local government advisory. *Tengao*, once invoked, means that no one can enter or leave the community for a day or more, depending on the consensus of the council of elders. In Eastern Visayas, 14 Indigenous Cultural Communities (ICCs) are dispersed in the provinces of Samar, Eastern Samar, Northern Samar, Leyte, and Biliran. These ICCs include the *Mamanwas*, the *Badjaos*, and the *Manobos*, whose indigenous migrant ancestors came from the Mindanao island (Cuaton & Su, 2020). Because Indigenous Peoples are strongly linked to their

environment, and cultural and religious traditions, some of them consider COVID-19 as a punishment from [their] God(s) (*Tahaw* or *Magbabaja*), hence, they must seek cover and pray for protection. This belief forms part of their cultural assets which may play an active role with their collective response in ensuring that their communities are not exposed to the virus. While indigenous lockdown practices and religious beliefs could help decrease virus infections in their communities, the socio-economic impacts of these lockdowns still persist. Thus, many expect the role of the State in providing social protection in order to ensure that its citizens, including Indigenous Peoples, adequately eat, drink, access and receive social and health services to survive the pandemic.

The COVID-19 Social Amelioration Program

The *Bayanihan* to Heal as One Act (Republic Act No. 11469) was swiftly created in March 2020 upon the request of President Rodrigo Duterte. *Bayanihan* is the Filipino principle of mutual effort (Eadie & Su, 2018) and the word roughly translates to "helping each other". Under the national law, Duterte was granted the power, among 29 others, to distribute PhP5,000.00-8,000.00 (~USD100-160.00) monthly financial subsidy for two months to 18 million poor and low-income households belonging to the informal sector (Buensuceso, 2020).

This financial subsidy, commonly known as the Social Amelioration Program (SAP), was implemented by the Department of Social Welfare and Development (DSWD). However, more than three months after its implementation- March to June 2020, the distribution of this financial subsidy was still incomplete due to the lack of a comprehensive list of potential beneficiaries (Suzuki, 2020). Other common issues hounding the quick and effective execution of this relief package include the a) unclear guidelines and limited time in beneficiary selection, b) unreasonable quota of beneficiaries per barangay/ village despite a higher number of supposedly qualified recipients, c) duplicate recipients, d) corrupt disbursing officials, and e) absence of an updated information system that identifies poor and low-income households (Suzuki, 2020). In a macro-level, Bisenio (2020) argued that the inadequacy of the SAP underscores the government's failure to address the plight of the most vulnerable Filipinos in the time of COVID-19.

In terms of the SAP implementation in Eastern Visayas, various challenges were encountered. On top of the ever-changing guidelines from the national government, there is a lack of institutional capacity, both in terms of human resources as well as fiscal mechanisms, to

implement rapid socio-economic response in the context of extreme contemporary crises like the current pandemic. Aside from the general time factor, the lengthy list of government signatories from the usual government bureaucratic processes, affected the timely distribution of the financial assistance. Figure 1 shows that in mid-May, at least 539,511 families or 90.51% of its targeted beneficiaries have been served and aided by their respective local government units (LGUs) in Eastern Visayas (DSWD-R.O. VIII, 2020). On the other hand, the LGUs also lack institutional readiness and capacity. An informant shared that, as of mid-July, the LGUs have submitted 91,923 waitlisted beneficiaries; however, only 75,390 have been encoded, while the rest are ongoing. Aside from encoding, the LGUs should also complete their liquidation of the first tranche of payouts. Due to various issues, including delayed payouts and difficulties in transporting documents due to travel restrictions, several LGUs still have not completed the liquidation. As of mid-July, only 135 out of 143 LGUs have successfully completed the liquidation of payouts. These contextual realities support our argument that the pandemic exposed the inability of LGUs to provide real-time and readily available data needed for a timely implementation of rapid response programs like the SAP.

With regard to Indigenous Peoples in Eastern Visayas, as in other regions of the country, the government did not consult the IP community leaders in terms of planning, implementing, and evaluating the program. We argue that the SAP is a blanket socio-economic program that failed to capture and provide the specialized, yet universal, needs of Indigenous Peoples with respect to their cultural, social, and physiological needs. In other words, the SAP became an "ephemeral universalistic social protection response" (Dadap-Cantal et al., 2020) which is in contrary to the socially fragmented and economically imbalanced sectoral groups of the country that need focused, culturally sensitive, and needs-based socio-economic responses to the pandemic. One of these sectoral groups are the Indigenous Peoples who are especially vulnerable from the pandemic due to the persistent inequalities they face even before the start of the outbreak.

As amply noted by an informant:

The SAP is just a stop-gap measure. It can only serve as a short-term government relief effort, but it can neither carry out direct nor profound effects on the social development of Indigenous Peoples in Eastern Visayas.

Figure 1. *SAP Progress Report as of 2020 May 14; photo grabbed from the DSWD Regional Office VIII official Facebook page*

Insights and Recommendations from Local Social Workers

All government agencies in the Philippines were unprepared for the unprecedented impact of COVID-19. We solicited the responses of local social workers in Eastern Visayas on how the government can better involve Indigenous Peoples in its response to the current pandemic as well as in future pandemics. They have five major recommendations for immediate consideration and action of the LGUs in the region:

- To ensure that Indigenous Peoples will not go hungry, the LGUs may augment the SAP assistance and provide food and grocery supplies to indigenous cultural communities following health and safety procedures.

- To minimize Indigenous Peoples' exposures to the bigger population vis-à-vis the virus, the LGUs may also provide mobile food stores from which these Indigenous Peoples can buy food. Mobility restrictions due to lockdown measures may prove difficult for some Indigenous Peoples to buy food, especially those living in far-flung areas who purchase goods only once a week.

- To enhance food security, the LGUs may also provide free high-value and high-nutrient crop seedlings that Indigenous Peoples may use to plant in their community gardens. This will eventually provide them food, especially that immediate solutions to the pandemic is unavailable.

- To promote health and safety, the local health offices may intensify their awareness campaign by providing informational materials and hygiene kits to Indigenous Peoples. These materials should be written using the common language of the barangay or village where these Indigenous Peoples reside to ensure that they understand it.

- To protect cultural knowledge and integrity, social and health workers may explore the local and indigenous knowledge and practices that Indigenous Peoples employ to strengthen community health, manage diseases, and avoid virus outbreaks. Incorporating these traditional knowledge and practices in the government's response may help Indigenous Peoples understand on a language, cultures, and beliefs that they hold true and effective.

Our informants collectively noted that it is important to understand the indigenous socio-cultural and political dynamics when working with Indigenous Peoples. These include understanding their beliefs, norms, customs and attitudes towards education, health, and medicine. In addition, the usual Top-Down Approach in program implementation is not an effective strategy when engaging with indigenous communities. Program ownership and community involvement are important to involve Indigenous Peoples effectively and genuinely. We argue that such should also be the case in implementing rapid socio-economic relief efforts in the current as well as future pandemics. An informant noted that the government agencies should include the Indigenous Peoples' community leaders in the Response Planning process to ensure that their needs will be prioritized, and the response will be sensitive to their cultures. In addition, the government should ensure convergence efforts among stakeholders at all levels. This will ensure that the survival and safety needs of Indigenous Peoples are included in the plans. These activities should also have synergy on the ground to attain better collection and utilization of resources. Most importantly, the implementation of these plans should follow the Needs and Rights-based Approach so that Indigenous Peoples won't have difficulties accepting the aids government will give.

Conclusion

Marginalized populations such as indigenous cultural communities are made particularly vulnerable during pandemics. In the case of Indigenous Peoples in the Eastern Visayas, a lack of consultation by the Philippines government in terms of planning and implementing the SAP program has meant that the specific needs of Indigenous Peoples were not met despite the extreme vulnerability they face amid COVID-19. Our study found that the government's one-size-fits-all SAP program failed to capture the cultural, social, and physiological needs of Indigenous Peoples. In particular, the pandemic posed serious threats to the survival of Indigenous Peoples regarding food and livelihood security as Indigenous Peoples are heavily reliant on farming and fishing as their source of food and livelihood. Moreover, the restrictions on mobility enforced during the lockdown meant that some Indigenous Peoples were not able to access their source of food and livelihood. As such, a prominent recommendation among the social workers we interviewed was the need to ensure that Indigenous Peoples have food security, in the form of access to food aid as well as crop seedlings, in the face of future pandemics. Moreover, local social workers highlighted the need to promote health and safety through awareness campaigns in the common language of the barangay or village where the Indigenous Peoples reside. Lastly, local social workers recommended incorporating the traditional knowledge and practices of Indigenous Peoples into future programs to strengthen community health, manage diseases and avoid future virus outbreaks. In conclusion, we argue that the practice of consulting Indigenous Peoples in the face of future pandemics can not only contribute to identifying and meeting the specific needs of Indigenous Peoples, but their local knowledge and practices can contribute overall to strengthening government rapid response programs.

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Improving COVID-19 data protocols for Indigenous peoples in the U.S. and Canada: A public-media-based cross-national comparison

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Abstract
In response to current calls by the World Health Organization and United Nations to prioritize data processes regarding COVID-19 and its impact on Indigenous Peoples worldwide, this exploratory paper aims to briefly identify barriers regarding data processes for Indigenous communities impacted by COVID-19 in Canada and the U.S. Built on emergent themes contributed by current research, the research conducted qualitatively public media analysis to address communication, distrust, and community participation as issues, barriers, and solutions for thorough and accurate data processes. Funding has been a long-term existing and primary issue in addressing these three themes. Federal governments of both countries could better support the Indigenous communities by providing adequate funding, following through with their pledges of support, and sharing detailed, accumulated data with tribal authorities, and tribal epidemiologists. Better communication among federal, state/provincial, and Indigenous community authorities would improve data collection and analysis. Stimulating bottom-up community participation in COVID-19 efforts, not only promotes the data processes in Indigenous communities, but also empowers the local communities' leadership to develop solution-based responses. This cross-national pilot research sheds light on the necessity of international collaboration advancing Indigenous communities' health and well-being in both disaster and non-disaster settings.

Introduction

At the beginning of August 2020, the COVID-19 pandemic had wreaked havoc on 188 nations worldwide, resulting in approximately 700 thousand deaths and more than 18 million people infected (JHU, 2020). Most high-income countries (e.g. Canada and Australia), which have been hit harder than their developing peers, have been moving into the reopening stages (Baragona,

2020). The U.S., however, has been experiencing a continual and significant surge eclipsing the initial swell in cases due to various social, cultural, economic, and political reasons (Almasy, 2020). In the U.S., and arguably Canada, "long-standing systemic health and social inequities have put some members of racial and ethnic minority groups at increased risk of getting COVID-19 or experiencing severe illness, regardless of age" (Centers for Disease Control & Protection [CDC], 2020a, p.1). CDC data indicates that between March and June 12, 2020 adjusted hospitalization rates for Native Americans were five times higher, than their white counterparts. As such, the appropriate collection and processing of minority COVID-19 data is crucial to coming to accurate conclusions and determining best practices for lowering infection rates, hospitalizations, and deaths.

Extreme events always have catastrophic influence on vulnerable and marginalized groups (Wu, & Karabanow, 2020). In the U.S. and Canada, the Native American community, presenting a relatively high percentage in the total population, including American Indians and Alaska Natives (AIAN), Native Hawaiians, Pacific Islanders in the U.S. and First Nations, Inuit, and Métis in Canada, are some of the most vulnerable and marginalized groups of the developed world. Though there are other terms, for brevity, "Indigenous Peoples" is the consistent term used here for these groups. In non-disaster settings, Indigenous communities in both countries have suffered a gamut of harsh realities ranging from limited healthcare, social services, housing, employment, and a scarcity of natural resources (e.g. water and food security) (Ashworth, 2018). Although the COVID-19 pandemic has further compromised their already extremely vulnerable status, the Indigenous-specified public health related data are still unclear (Jones et al., 2018; NCCAH, 2013). CNN reports that in May, the Navajo Nation surpassed New York in COVID-19 infections (Silverman et. al., 2020). The misalignment between government objectives and COVID-19 realities among Indigenous communities is the impetus to deeply examine the public health data processing and related issues through a cross-national comparison approach between the U.S. and Canada.

Conceptual Framework and Research Question

International health organizations and practitioners are calling for more inclusion and more efficient data processes to better understand the impact of COVID-19 on Indigenous Peoples (UN, 2020; WHO, 2020). This research aims to identify barriers regarding collecting, analyzing, and

disseminating data regarding coronavirus-affected Indigenous Peoples in the U. S. and Canada. As shown in Figure 1., the literature review yields to three specific emerging themes ultimately identified as barriers to accessing and assessing COVID data between the different levels of the two governments, and authorities in Indigenous communities. The examination of data reports relevant to Indigenous Peoples, and the impact of the COVID-19 pandemic, provides a unique cross-national platform to deeply examine the relationships among these three themes within one event, and guides this research to further identify the barriers towards data processes in Indigenous communities.
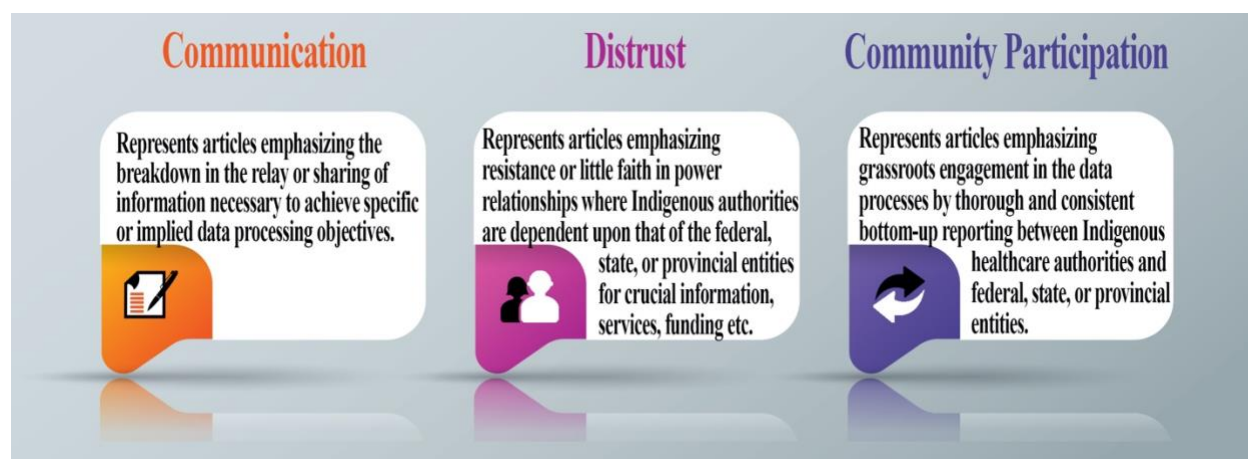
Figure 1. Communication, Distrust and Community Participation in Indigenous Studies

Research Design

Data Curation

This qualitative research focused on the top-ranked public media venues in both countries, which are the major source for COVID-19 information for the public (CBC Radio, 2020). In Canada, according to Feedspot (2020), the top three Canadian News websites are Canadian Broadcasting Corporation (CBC News), the Globe and Mail, and CTV News. The U.S. Federal Communications Commission identified three primary governmental news websites focused on COVID-19 information, Coronavirus.gov, CDC.gov/coronavirus, and USA.gov/coronavirus (FCC, 2020). Informally, the top three most competitive public media outlets in the U.S. for national news on COVID-19 are FOX News, CNN, and MSNBC (Statista, 2020). Despite this,

there were a few news reports related to data centralized within the three top-ranked news media venues.

Search Strategies

Website-based news articles are the major data resources that support this study. Two groups of keyword were established to identify news articles in the primarily consumed public media websites: Group 1 Indigenous: ("Aboriginal" OR "Native American" OR "American Indian" OR "First Nations" OR "Indigenous" OR "Inuit" OR "Métis" OR "Indians" OR "Alaska Natives" OR "Native Hawaiian" OR "Asian Pacific" and Group 2: COVID-19 ("COVID-19" OR "coronavirus"). This scope search will provide most of the documents including either one keyword from each group. For example, any articles consisting of "Indigenous" AND "COVID", or "Inuit" AND "coronavirus" will be selected by the primary screen. The search period begins upon the first infected case was reported, January 21, 2020 in the U.S. (Schumaker, 2020) and January 25, 2020 in Canada (The Canadian Press, 2020a) respectively, and ends at 23: 59 ET on July 15, 2020. The authors included primary documents specifically related to data and its processes to support the arguments presented below but did not exhaust all sources given the brevity and time constraints related to publishing the special topic.

Data Analysis

Emerging theme strategies, supporting inductive and deductive coding approaches, are employed to compare and synthesize media article data from both countries. Most of these articles consist of the original reports from other resources, especially the governmental websites, which provide extra background and related information and form a comprehensive lens to examine and synthesize related data. Various differences and similarities between two countries including pandemic-related social, economic, and political reasons, were also imbedded in the data analysis, in order to develop independent and collective themes to facilitate the cross-national comparison. This article yields the scope of emerging themes to focus specifically on the issue of data processes in each country.

Issues and Barriers

Data Sharing: A Huge Difference Regarding Data Released Between the Federal Government Agencies and Community-Based Agencies Clearly Indicate the Data Gaps in Both Countries

Overall, in both countries, communication emerged as a pillar of the conceptual framework through which relations between federal governments, state, provincial, and local tribal authorities can be greatly improved. Bringing tribal entities to the table to engage in a more cooperative manner can help to create data driven solutions that impact both countries and their Indigenous populous. In Canada, according to Yellowhead Institute, a community-based First Nation-led think tank in Canada, released a report indicating that more than 465 indigenous COVID-19 cases among 42 communities across Canada with seven deaths on May 11, 2020 (Skye, 2020). At the same time, Indigenous Services Canada (ISC), a Canadian federal government department, officially announced that 183 cases on-reserve in five provinces with 2 deaths, which triggered the Yellowhead Institute's concern that the federal government agency of ISC might not have full capacity to reflect the entire landscape regarding the influence of COVID-19 on indigenous communities across Canada (Barrera & Deer, 2020).

In the U.S., similarly, tribal epidemiologists argue that federal and state entities are not as forthright in sharing data as the tribal entities and Indian Health Services (HIS). Thus, tribal health organizations and the IHS cannot portray a true overall status of the COVID-19 impacts on all Indigenous persons, rather than collecting limited data from those who seek clinical service within tribal lands. Such one-sided cooperation further worsens the distrust between Indigenous authorities and federal and state health organizations. Federal and state entities' are extremely vague in providing legitimate justification regarding denying IHS and other regional TECs access to the data, citing "privacy concerns" and even broadly challenging the "veracity" of tribal identity in some cases (Tahir and Cancryn, 2020, para.1). To example the lack of specificity in the data, the IHS website is reporting approximately 25,000 cases of COVID-19 across 12 regional TECs in the U.S. (IHS, 2020). However, in looking closer at the data there are indicators that point to data unreliability. Indeed, according to the Arizona State COVID-19 data, on July 15, 2020 there are 86,453 positive cases of COVID-19 in Maricopa County. Among those cases, only 3 percent are identified as AIAN. However, 54 percent of the cases are designated as racially/ethnically

"UNKNOWN," which is about 46,700 people without a racial designation (Arizona DOHS, 2020). The category of "UNKNOWN" was designated across counties in Arizona and represents significant number of cases. These large gaps in specific data detail are indicative of the data collection throughout the states' and their individual COVID-19 data sites. While some states do better in data collection and transparency, most state data sites are not consistent in identifying cases, nor are they consistent in defining the categories of data collected which can be addressed by resolving the following two barriers: top-down financial support, and bottom-up community participation.

Barrier 1 Top-Down Financial Support. When the Canadian data gap was discovered on May 11, 2020 (Deer, 2020), ISC immediately invested $250,000 to advance data collection for COVID-19 affected Indigenous communities (Kirkup, 2020). This intensive governmental intervention strongly states that the Canadian federal government's on-going efforts lean towards Indigenous communities. However, Indigenous authorities challenged the funding efforts and the untimely delivery of perishable data as inadequate (Wright, 2020). Canadian First Nations have experienced a long-term unfunded status, especially equal health service, threating the trust foundation between community and governmental entities (Blackstock & Day, 2020). Indeed, 1918 Spanish Influenza claimed more than one third of Inuit population in the Province of Newfoundland and Labrador because of chronic overcrowding and limited medical supplies (Mercer, 2020). Pandemics do not respect geographic boundaries. Indigenous communities hope that the COVID-19 pandemic threat would justify increased governmental investment in redressing the inequities, better preparing the Indigenous community, and serving their residents (The Canadian Press, 2020b).

In the U.S., historically, Indigenous Peoples have had a tumultuous relationship with the federal and state governments (Nelson, 2003). Federal and state laws have often clashed with Indigenous sovereignty over Indian Country (Doshi, 2020). Top-down oversight has led to scarcity in funding for initiatives that would mitigate the higher-risk in the COVID-19 pandemic (Akee, 2020). Recently, the federal government has responded to a lack of personal protective equipment (PPE), ventilators, and adequate plumbing for water resources (Hlavinka, 2020). For example, the Department of Health and Human Services announced that the CDC would "provide $80 million in funding to tribes in support of our nation's response to… COVID-19" through the Families First Coronavirus Response Act (HHS.gov, para.1). Congress and the Executive branches of

government signed H. R. 174 into law, featuring "strong provisions in support the priorities of tribal communities across Indian Country in response to the pandemic (National Congress of American Indians, 2020, para.1). Although these pledges have initiated a step in a positive direction, there is no evidence to support whether the governmental funding is enough, nor if it will continue consistently.

Top-down approach, especially the financial support from the federal government will fundamentally improve the community-based data collection. In both countries, a lack of funding has impacted the capacity of Indigenous authorities to provide adequate services for their communities, which has been worsened by the ongoing issue of Indigenous having little trust in the promises of federal and state agencies. Improving top-down interventions by meeting longstanding funding pledges can improve the quality of tribal life and foster more trust between government authorities and tribal residents.

Barrier 2: Bottom-Up Local Community Participation and Empowerment. In addition to government financial interventions, empowering Indigenous communities will form a bottom-up approach to support the data collection from the grassroots level. Indigenous Peoples in Canada and the U.S. have recognized that waiting for federal, state, or provincial resources puts them at further disadvantages, potentially missing the valuable window to stop the COVID-19 spread, and put more peers at risk (Richmond et al., 2020, Doshi, 2020). These communities also recognize that further development of their community-based efforts is critical for self-protection (Jones, 2020). For example, increasingly, provinces and territories in Canada have been entering into different stages of reopening and as such, Indigenous communities and tribal authorities are closely monitoring the summer travelers to avoid "the possible arrival of additional COVID-19[infections]" (CBC News, 2020a, para. 16).

In the U.S., some tribes have been critical of state and local governing bodies who have failed to issue lockdown protocols and have instituted their own checkpoints (Ortiz, 2020). Such fears have led many other tribal leaders in other states to impose their own lockdowns and issue curfew orders in the evenings (Doshi et al., 2020). The bottom-up approach highlights a third component of the conceptual framework of "community-participation." Historically, long-term engagement with the natural and built environments strengthen the Indigenous People's resilience capacity (Berkes & Turner, 2006). Community participation taps into the strengths of Indigenous People and emphasizes organic solutions. Some tribal-driven solutions in response to food

shortages during this pandemic include communities returning to Indian customs of seed saving, canning, and dehydrating food (Brown, 2020). Bottom-up approaches give tribal authorities more opportunities to lead community initiatives and provide proactive opportunities to problem-solve in addressing COVID-19.

Limitations and Conclusion

The data resources and language issues present the major limitations in this research. The research identified news articles from the top news companies in both countries rather than community-based public media, especially those based in the Indigenous communities. Although most valuable information released by these community-based media channels were also further developed by the major news companies, neglection is unavoidable. News stories related to gaps in COVID-19 data impacts on Indigenous communities, or people living outside of those communities were not concentrated in major news outlets in the U.S. The research only examined English documents, which potentially excluded the documents published in other languages, like French in Canada, and Spanish in the United States. Although the Indigenous language-based news articles were excluded in both countries, some valuable news articles were highly translated and covered by the major public media chosen in this study.

Our research indicates that the data protocols between federal, state, provincial, and tribal health authorities are inefficient because of disrupted communications, distrust, and inadequate funding despite funding commitments. Federal entities in Canada and the U. S. seem unwilling to share information effectively to provide tribal entities the kind of data detail that would mitigate community spread of COVID- 19. Tribal authorities and tribal epidemiologists believe data is somewhat manipulated in undercounting cases or using standards which deny claims of tribal membership. Additionally, the data process has been influenced by other factors (e.g. a need for data disaggregation, prioritizing collection of racial and ethnic demographic information, inclusion of remote Indigenous tribes in data collection). As the cases of COVID-19 infections rise worldwide, data driven responses are the primary means by which vulnerable Indigenous communities in tandem with the larger governments can eradicate the hospitalizations and death tolls in Indigenous communities.

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American Indian Water Insecurity in the Era of COVID-19

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Abstract
In 2020, many of the COVID-19 outbreaks in the U.S. have been in majority-Black and Indigenous communities, where residents are continually water insecure and have been striving for access to affordable, safe water for years, if not decades. Frequent hand washing is recommended as one of the primary ways to prevent the spread of COVID-19. However, regular hand washing necessitates access to adequate, safe, and affordable water. Water insecurity is a significant problem for Indigenous people in the U.S., with nearly 9% of American Indian households lacking safe and sufficient water resources compared to less than 1% of the general U.S. population. Without access to safe water, COVID-19 disproportionality affects Indigenous people in the U.S. who live in water insecure settings. To protect the health of tribal communities, urgent action is needed to push forward policy reform and successive action that was needed prior to the pandemic, but is necessary now more than ever.

The COVID-19 pandemic, like any major disaster, affects marginalized communities at alarming rates as these communities are typically some of the most under-resourced and at-risk due to pre-existing environmental injustices and ongoing health inequities. Correspondingly, these communities are primarily composed of Black, Indigenous, and other people of color (BIPOC) who experience high poverty rates and the subsequent health and social inequities that accompany poverty. Health disparities between American Indians and other racial/ethnic populations in the United States (U.S.) are well documented (Jones, 2006). The U.S. currently has more reported cases and deaths from COVID-19 than any other country worldwide (World Health Organization, 2020). In particular, American Indians (AIs) are disproportionately affected by COVID-19 due to pre-existing conditions related to social and environmental determinants of health and their long-standing political marginalization in the United States. Due to such considerable health and social inequities, Indigenous people experience a higher burden of non-communicable and infectious diseases in general (Groom et al., 2009; Power et al., 2020).

Considering pandemics, Indigenous people have historically experienced higher infection rates and greater severity of symptoms and loss of life than the general population (CDC, 2009; Doxey et al., 2019; Power et al., 2020). Over the last century, and before 2020, there have been four influenza-related pandemics in the U.S.: 1918-1919, 1957-1958, 1968, and 2009 (CDC, 2018). During these pandemics, American Indians and Alaska Natives (AI/ANs) experienced significantly greater rates of influenza-related mortality in the U.S. than any other ethnic or racial group (CDC, 2009; Dahal et al., 2018; Doxey et al., 2019; Mamelund et al., 2013). Following the 1918-1919 influenza pandemic, influenza-related mortality rates among AI/ANs were four times greater than the rates experienced by people in general U.S. urban populations (CDC, 2009; Groom et al., 2009). More recently, AI/ANs death rates from H1N1 were four times higher than people from all other ethnicities combined in the U.S. (CDC, 2009, p. 1; Power et al., 2020). From a global perspective, Indigenous people in Australia, Canada, New Zealand, and elsewhere have shared a similar outcome, with substantially higher rates of infectious diseases and subsequent deaths than the general population during pandemics (Boggild et al., 2011; Groom et al., 2009; Kelm, 1999; Mousseau, 2013; Power et al., 2020; Ruche et al., 2009; Summers et al., 2018).

Early into the COVID-19 pandemic, rural and Southwestern states such as Arizona and Oklahoma, which have large AI populations, had some of the lowest COVID testing rates in the country (Chhabra et al., 2020; Monnat, 2020; Souch & Cossman, 2020). Although AI/AN people account for about 0.7% of the U.S. population, a recent report shows that 1.3% of COVID-19 cases reported to the CDC were among AI/ANs (Stokes, 2020). This reflects trends based on Tribal affiliation and geographic location, where Indigenous people continue to be overrepresented in positive COVID-19 cases. For instance, AI/ANs have accounted for about 32 percent of COVID-19 cases in New Mexico, even though they are just 9 percent of the state's population (*NMDOH COVID-19 Public Dashboard*, 2020). Kaholokula and colleagues (2020) reported that U.S. states with a substantial population of Native Hawaiian and Pacific Islander (NHPI) residents, including Hawai'i, California, Oregon, Utah, and Washington, were reporting higher rates of COVID-19 among NHPI people than in other racial and ethnic groups. Of the 23 states reporting adequate race/ethnicity data to the CDC, the occurrence of COVID-19 among AI/ANs is 3.5 times than that among non-Hispanic whites (Hatcher, 2020). However, there is a significant percentage of inadequate or missing data when tracking COVID-19 cases among AI/ANs, and current numbers may not be accurate. Nonetheless, the need continues for COVID-19 surveillance at all

government levels to monitor trends and communities that may be at increased risk for infection and poor outcomes. Likewise, community mitigation strategies are still needed, especially for AI/AN populations, to slow the spread of COVID-19 (Hatcher, 2020; Stokes, 2020).

COVID-19 and Water Insecurity

In 2020, many of the COVID-19 outbreaks in the U.S. have been in majority-Black and Indigenous communities, where residents are continually water insecure and have been striving for access to affordable, safe water for years, if not decades. Though many factors influence a community's susceptibility to pandemics, water insecurity is a particularly salient issue, as frequent hand washing is recommended as one of the primary behaviors to prevent the spread of COVID-19. However, regular hand washing necessitates access to adequate, safe, and affordable water above and beyond the daily water that is required for cooking, hydration, and general sanitation needs (Armitage & Nellums, 2020). Public health appeals to 'wash your hands' pose further stress on already water insecure communities who contend with polluted or unaffordable water, non-existent or dilapidated wastewater systems, and inadequate water infrastructure in general (Hyde, 2020). In communities with inadequate or untrusted residential water supplies, many people depend on bottled water obtained from outside their homes to meet their daily water needs. Reliance on bottled water comes at a financial cost and burden of time and travel to procure daily household water needs (Hyde, 2020).

Before the COVID-19 pandemic, water insecurity was already a considerable problem for many AI/AN people. Nearly 9% of AI households in the U.S. lack safe and sufficient water supplies and waste disposal services compared to less than 1% of the general U.S. population (Indian Health Service, 2015). Frequently, water insecure communities are located in rural areas with limited resources. Though most AI/ANs reside in urban spaces, 39% of AI/ANs live in rural areas or on reservations. Of these, 40% of AI/ANs inhabit what are considered remote and isolated areas referred to as Rural Minority Counties (RMCs) (Groom et al., 2009). 20.7% of American Indian/Alaska Native households in RMCs are water insecure and do not have indoor plumbing, and have inadequate access to potable water and reliable wastewater disposal (Groom, 2009). Before COVID-19, water insecurity, in combination with other factors, disproportionality perpetuated the spread of infectious diseases in general to people residing in water insecure locations (Groom, 2009). In 2020, Tribal communities are not only contending with prior water insecurities and its obstacles but a heightened risk of contracting COVID-19.

Warm Springs Reservation

Poignant examples from the COVID-19 pandemic frontlines are visible on the Warm Springs Reservation and in the Navajo Nation. The Warm Springs Reservation in Oregon has had ongoing water insecurity for decades (Kohn, 2020). COVID-19 has exasperated water insecurity on the reservation as the tribe's aging water infrastructure continues to impact access to safe water for daily drinking and hygiene needs, such as handwashing, which is critical for stopping the spread of COVID-19. During the pandemic, the community experienced another boil water notice on the reservation, where more than 70 people in a community of approximately 5,000 people have tested positive for COVID-19 (Kohn, 2020). The additional stress and labor involved in boiling water for safety add to an already precarious situation for Tribal members.

Navajo Nation

The Navajo Nation continues to be one of the hardest-hit communities in the U.S.; in a total population of approximately 300,00 tribal members with 173,00 living on the reservation, the Navajo Nation had a total of 7,414 positive COVID-19 cases and 362 confirmed deaths as of June 27th, 2020, (Dikos Ntsaaígíí-19 (COVID-19), n.d.).

Between 30% to 40% of the Navajo households do not have running water (*Dikos Ntsaaígíí-19 (COVID-19)*, n.d.). Approximately one-third of Navajo households haul water to their home every day, and they pay 67 times more for water they haul versus piped water (*Navajo Water Project*, 2020). Dikos Ntsaaígíí-19 (n.d.) states, "In the absence of a reliable water supply, families frequently share the same pans to wash their hands or drive long distances to "border towns" to fill water barrels. Both situations introduce a variety of risks for residents and challenges for Navajo leaders in combating coronavirus on the Nation." Many Navajo households do not have or lack access to wastewater systems and depend on water from unregulated wells, springs, or livestock troughs that may be unsafe due to decades of groundwater contamination from uranium mining on the reservation (Chapman, 2020; Lehtinen, 1998). Environmental justices such as these are founded in the tremulous history of Tribal water rights and violations in the United States. The well-documented health impacts of water insecurity on the Navajo Nation include higher rates of diabetes and other health conditions that increase tribal members' vulnerability to infectious diseases such as COVID-19 (Chapman, 2020).

Discussion Future

For Indigenous people, water is life (Mitchell, 2019a). Water was never meant to be bought or sold nor regulated in the ways of western society. Perhaps even more salient is Indigenous peoples' relationship with water, in which many refer to water as a *relative* whom we are deeply connected to through our customs, ceremonies, namesakes, and beliefs, to name a few (Anderson, Clow, & Haworth-Brockman, 2013). Beyond our biological and physiological need for water, water is central to our identity, spirituality, and culture as Indigenous people. However, the world we live in does not often reflect these values, so much so that water had to be declared a human is a right as an attempt to secure equitable water access for Indigenous people. Nevertheless, today in the U.S., a high-income country, water insecurity still exists for the nation's most vulnerable and marginalized citizens.

Through the plight of Tribes like the Navajo Nation, the country and the world got an inside look into Tribal communities and the daily struggles that still exist. As COVID-19 was first detected on Tribal lands, many communities relied solely on grassroots efforts to obtain the necessary supplies and resources to try and stop the spread of the disease and care for those who had tested positive, as government aid has been slow in reaching rural and Tribal communities most affected by the pandemic. Other local efforts to control the disease's spread include Tribally mandated curfews and closures of Tribal offices and business, including casinos on Tribal lands. From June to mid-August, the Navajo Nation mandated a "safer at home" ordinance, and residents were required to stay at home, excluding essential activities (Curtis, 2020). Local news outlets and social media have mainly documented these efforts.

The COVID-19 pandemic continues to expose the unforgiving reality of structural and environmental inequalities that Indigenous people contend within the United States. To protect the health of Tribal communities, urgent action is needed to institute change and policy reform to address environmental injustice in Indian country. Research on COVID-19 is in its early stages and developing by the minute, and we must make sure AI/ANs are included in the conversation. During this pivotal moment in history, we must monopolize on the momentum created by the COVID-19 pandemic to push forward environmental justice and water equity efforts. We must consider the social, environmental, and health impacts of water insecurity as it is a considerable threat to the public health of Indigenous people and their livelihoods. While the full impact of COVID-19 on water insecure communities will require further study, effective public health

responses to the pandemic will depend on the accuracy and inclusion of AI/ANs in all state and federal efforts to overcome the pandemic, as well as prepare for future pandemics and other emergencies.

Conclusion

Water insecurity is not a new issue for Indigenous people, and although it is not the only factor linked to increased COVID-19 rates, water insecurity is a major concern in combating the spread of the virus in tribal communities. COVID-19 has helped expose AI/AN health and environmental inequities in the U.S. on a national, if not global scale. The pandemic has highlighted the urgency for water infrastructure and policy reform to ensure access to equitable, safe water for those who need it most now and in the future. Access to safe, sustainable water resources and infrastructures are essential for equitable health and well-being, and "health equity is a prerequisite for social and environmental justice" (Mitchell, 2019b). As COVID-19 has dramatically changed daily life in the U.S., it should make us reconsider our national policies and practices that treat water as a commodity to be bought and sold, but rather honor water as a human right that must be available to all because "Water is Life."

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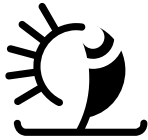
Opportunities for Information and Communication Technology Development in remote Northern Ontario Indigenous communities in spite of COVID-19 physical restrictions

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Abstract
This article describes an opportunity to implement an Information and Communication Technology (ICT) strategy in remote Indigenous communities across Northern Ontario where access to the digital environment currently is very difficult due to the COVID-19 pandemic. Academic research in the digital environment with Indigenous communities has shown that implementation and development of ICT is a need for all communities and a right for each individual. We aim to show how the implementation and development of this ICT could be done by building on existing research on the adoption of digital technology by Indigenous communities. Our research shows that using institutional theory in the context of Indigenous self-determination and in connection with the United Nation's Sustainable Agenda 2030, the enabling of ICT infrastructure can result in positive impacts for Indigenous communities. Our article provides two tangible recommendations, that if implemented can lead Northern Ontario Indigenous communities to sustainable ICT infrastructure development. One recommendation is to leapfrog current hardware infrastructure by leveraging advances in High Altitude Platform Stations (HAPS) that provide digital access where terrestrial digital environments does not. The second recommendation is for Northern Ontario Indigenous communities to leverage the current requirements by educational institutions in Ontario to enhance experiential learning through service and community-based learning through educational partnerships. We believe that through the implementation of these recommendations, the challenges that COVID-19 has brought to physically isolated communities in Northern Ontario can be alleviated.

Introduction

In today's socioeconomic environment and as a result of physical restrictions from the COVID-19 pandemic, Indigenous communities across Canada are facing significant pressure to make their economic and social development more efficient and effective. Almost 250 remote Indigenous communities are scattered across the country dealing with challenges with energy and environmental issues, mostly located in British Columbia, Northern Ontario, Northern Quebec,

Northern Labrador, Yukon, the Northwest Territories, and Nunavut (Arriaga, Nasr & Rutherford, 2017). The inability to connect to Information Communication Technology (ICT) has a direct and significant impact on their economy and quality of life (Doong & Ho, 2012). In addition, the COVID-19 pandemic has heightened the challenges in engaging with the broader Canadian community and between communities when physical restrictions are in place.

Our goal is to present an opportunity to implement ICT by describing how remote Indigenous communities can implement hardware access and an ICT social strategy. This will lead to a tangible recommendation to couple access to ICT with knowledge transfer strategies using the lens of institutional theory. The resulting strategy will complement Canada's achievement of sustainability targets described through the United Nations 2030 Agenda.

The United Nations and its member states agreed unanimously in 2015 to promote 17 Sustainable Development Goals (SDGs) in order to provide sustainability, peace and prosperity for the planet and its citizens by the year 2030. In the context of ICT and Northern Ontario Indigenous communities, SDG #4 promoting quality education and SDG#11 promoting sustainable cities and communities are particularly salient (Sustainable Development Goals, 2019).

Years ago, Indigenous communities in Alaska faced similar challenges in ICT infrastructure. These challenges were addressed through the installation of appropriate hardware infrastructure so that Internet connectivity is now available through most of Alaska. In this paper, Alaska's scenario will be used as a comparison to Northern Ontario's current lack of ICT and infrastructure. According to the Canadian Government's Connectivity Strategy (Government of Canada, 2019), the Canadian Government launched a $305 million *Connecting Canadians* program in 2014 whose scope was to provide high-speed and reliable connection to isolated communities. Despite all these efforts, in 2019, the Government of Canada announced that a significant amount of work is still left to be done (Government of Canada, 2019).

The growth of ICT must be addressed to enhance the development and autonomy of communities. As Oliveira, Oliver and Ramalhinho (2020) state, "the way citizens interact with cities affects overall life quality" (p. 1) and that this interaction is enhanced with digital technology. The implementation and development of ICT in isolated communities would allow the quick exchange of information and necessary data between individuals, organizations and government services using digital technology. Thus, the access to ICT for a community becomes a right to a better life, to a better existence, and self-determination.

In this article, we address two related questions in the context of SDG# 4 (promoting quality education) and SDG# 11 (promoting sustainable communities). What solutions can be implemented to develop and implement an ICT infrastructure in isolated Indigenous communities in Northern Ontario? How should this infrastructure development be leveraged for the communities' benefit and social development?

Literature Review

Theoretical Framework

The socio-political, economic and technological aspects of the surrounding environment influence the response and adaptability of organizations. Institutional theory has been used for more than three decades to understand and study the dynamic of these influences and how organizations in their adapting to change end up looking the same – through the process of isomorphism (DiMaggio & Powell, 1983; 1991). The concept of isomorphism explains that institutional patterns and forms of social structure are connected and become the same through coercive, mimetic, or normative reasons (DiMaggio and Powell, 1983). The relevance of institutional theory in the context of understanding the implementation and development of ICT in the remote areas in Northern Ontario and the consideration of ICT infrastructure as a right, is noteworthy as we looked at the different stages of ICT progress with Indigenous communities in Alaska and those in Northern Ontario.

Indigenous Considerations

On a global basis, the impact of COVID-19 has created social problems for remote communities due to their lack of access to reliable ICT. Mhlanga and Moloi (2020) related the challenges of the pandemic to how education was developed using remote technology in South Africa and perhaps not surprisingly, found investment in ICT helped create pockets of excellence across primary, secondary and tertiary education levels. The link between ICT infrastructure and educational excellence is made which then highlights the question of what happens to remote Indigenous communities who lack access to ICT and are thus are isolated more than normal during a pandemic situation?

According to Government of Canada resources (Statistics Canada, 2017), Ontario has the largest Indigenous population in Canada (24% or over 400,000 people). Moreover, 78 per cent of Indigenous communities identifying as First Nations communities in Ontario are in Northern

Ontario and 1 in 4 of those communities are remote and accessible only by air year-around or by ice road in the winter (Government of Canada, 2019). In an age when knowledge is digitally transmitted, people who live in the remote communities of Northern Ontario, are still very limited in their possibilities to use Internet connections for health services, school classrooms, business or other social services (Science and Economic Development Canada, 2018).

Sustainable Development Goals (SGDs)

The United Nations declared as part of their 2030 Agenda that "no one must be left behind" (Transforming our world: the 2030 Agenda for Sustainable Development, 2019). As noted earlier, SDG #4 defines quality education and SDG #11 defines sustainable cities and communities. These SDGs belong to 'The 2030 Agenda for Sustainable Development' adopted by all United Nations Member States in 2015 (Sustainable Development Goals, 2019). There are 17 SDGs and 169 targets encompassing the three dimensions of sustainable development: economic, social and environmental. The role of the SDGs is to stimulate action in areas of sustainability and social responsibility for humanity and the planet.

SDG #4 is meant to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. This SDG supports the need of accelerated actions at all government levels to facilitate important investments toward the Northern communities of Ontario and Canada. More specifically, target 4.3 proposes that by 2030, equal access to affordable and quality technical, vocational and tertiary education, including university must be ensured for all women and men. Moreover, target 4.5 proposes that by 2030, equal access to all levels of education and vocational training for Indigenous people have to be ensured. In addition, target 4.a presents the idea of building and upgrading education facilities and provide safe, inclusive and effective learning environments for all. The indicator for this goal would be the percentage of schools with access to electricity, the Internet and computers for pedagogical purposes; including implementing ICT (https://unstats.un.org/wiki/display/SDGeHandbook).

SDG #11 is also relevant as it aims to make cities and human settlements inclusive, safe, resilient and sustainable. There is a relationship between all elements of a society, organizations and communities, infrastructure and digital technologies. Target 11.a states that there should be support for positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning (Final list of proposed Sustainable Development Goal indicators, 2015).

Methodology

We performed a scoping review for peer-reviewed research on the challenges of ICT gaps with Indigenous communities using academic databases and Boolean operators followed by manual reviews of the findings. Our scoping review was guided by scoping review methodology described by Arksey and O'Malley (2005). We used the following academic databases: ABI/Inform Global, Google Scholar, and Scholars Portal (a Canadian information database provided through the Ontario Council of University Libraries). Table 1 lists the articles that were identified as relevant to our research.

Table 1. Findings from the Scoping Review		
Authors (year)	**Title**	**Journal**
Friedel, T., Archibald, J., Head, R. B., Martin, G., & Muñoz, M. (2012)	Editorial-Indigenous pedagogies: Resurgence and restoration	*Canadian Journal of Native Education,*
Hudson, H. E., Hanna, V., Hill, A., Parker, K., Sharp, S., Spiers, K., & Wark, K. (2012)	Toward universal broadband in rural Alaska	Institute of Social and Economic Research, University of Alaska
McMahon, R. (2011)	The institutional development of Indigenous broadband infrastructure in Canada and the U.S.: Two paths to "digital self-determination."	*Canadian Journal of Communication*
McMahon, R., O'Donnell, S., Smith, R., Walmark, B., Beaton, B., & Simmonds, J. (2011)	Digital divides and the "First Mile": Framing First Nations broadband development in Canada	*International Indigenous Policy Journal*
Mhlanga, D., & Moloi, T. (2020)	COVID-19 and the digital transformation of education: What are we learning on 4ir in South Africa?	*Education Sciences*

Authors (year)	Title	Journal
Mignone, J., & Henley, H. (2009)	Impact of information and communication technology on social capital in aboriginal communities in Canada	*Journal of Information, Information Technology*
Mignone, J., O'Neil, J., Ross, W., & Brown, J. (2008)	Information and communication technology in aboriginal communities in Canada: Increasing aboriginal social capital	Faculty of Human Ecology, University of Manitoba
O'Donnell, S., Beaton, B., McMahon, R., Hudson, H. E., Williams, D., & Whiteduck, T. (2016, June)	Digital technology adoption in remote and northern Indigenous communities in Canada	University of Calgary
Simon, J., Burton, K., Lockhart, E., & O'Donnell, S. (2014)	Post-secondary distance education in a contemporary colonial context: Experiences of students in a rural First Nation in Canada	*The International Review of Research in Open and Distributed Learning*

Discussion of Findings

We found a significant gap in the literature around access to ICT in remote Indigenous communities in Canada and particularly for Northern Ontario where the need is apparent. Mignone et al. (2008) and Mignone and Henley (2009) describe the impact of ICT on social life of Indigenous communities in Canada and bring a deep understanding of the technological environment of information and communication for Indigenous communities in Canada including Northern Ontario. Mignone et al. (2008) discuss the K-Net Case of Ontario which was brought to life under the stewardship of the Keewaytinook Okimanak (KO) Tribal council located in Northwestern Ontario. The K-Net case is one where a variety of terrestrial and wireless links that effectively connected a number of Indigenous communities to each other and the wider world was still not enough to cover the rest of the remote communities of the Northern Ontario. The article shows that although the K-Net case is a successful story for certain communities, there are still communities with no access to the Internet. Almost half of the Northern Ontario communities only

have a dial-up connection. Mignone et al. (2008) state that the utilization of ICT provides "greater access to essential services such as education, training, and health care and many increased community capacities, ultimately strengthening communities" (p. 33).

Thus, life facilitated by Internet connectivity would support continuing education, higher education, economic development and self-determination and autonomy. O'Donnell et al. (2016) finds that appropriate ICT infrastructure can encourage more companies to do business in the area, increased job opportunities, additional Telehealth stations, culture continuity, non-expensive videoconferences, social services as banking, shopping and socializing and leisure aspects of a community. In this way, the access to the information and communication technology becomes a tool that enables the autonomy and self-determination of communities.

Similarly as the findings by Mignone et al. (2008), the work of O'Donnell and colleagues (2016) highlights the importance of implementation of ICT as this has the potential to bring "transformative change to all communities but particularly to communities in remote and Northern regions" (p.4). In addition, the article identifies factor levels that influence digital adoption. Their recommendation was to develop and support digital capacity in community organizations as one of the main thrusts of policy and programs to increase the adoption of digital technologies (2016). According to the findings by O'Donnell et al. (2016), Indigenous community members have demonstrated their eagerness and ability to use digital technologies when they are affordable, accessible and meet their needs.

As a result, the implementation and development of ICT and its access turns to be a right for every household and community member of the remoted Indigenous communities of Northern Ontario as it offers opportunities to the ones with access. Furthermore, the article affirms that when the local and regional language is supported by communication tools, "the people tend to embrace these technologies, identifying innovative and unique strategies for their adoption" (O'Donnell et al., 2016, p. 29). This is another argument which needs to be considered when the implementation and development of ICT must be evaluated. Due to the remoteness of the communities "telecommunications firms are slow, and in many cases unwilling, to extend their broadband networks to Northern and remote communities without significant government investment" (O'Donnell et al., 2016, p. 30). As a conclusion, the report suggests that significant new investments by government partners need to be done in order to sustain, build, upgrade and

maintain broadband in infrastructure in Northern and remote Indigenous communities of Ontario and across Canada.

McMahon, O'Donnell, Smith, Walmark, and Beaton (2011) focus on the challenges of establishing Internet infrastructure in the 'first' mile and that this challenge has to be addressed for the specific needs of First Nations in Canada. McMahon (2011), recognizes that there are national and institutional differences between these strategies for Indigenous populations in the United States and Canada that requires a certain number of contingencies that are particular to the Indigenous community. However, we believe that it still important to recognize the impact of ICT infrastructure improvements with Indigenous communities outside of Canada.

For example, in comparison to Northern Ontario, the American state of Alaska, a state with a high Indigenous population, also faced a significant infrastructure deficit that acted as an obstacle to economic growth in the region. In the late 1970s, connectivity was limited only to cities or large towns. Communities with 25 permanent residents would only have telephone service primarily by satellite (Hudson et al., 2012). However, in Alaska the government instituted a project that implemented ICT infrastructure to the region. This project, named the TERRA project, required significant hardware investments. Studying the present implications of TERRA project in Alaska, gives us an understanding or a model of how ICT could be implemented and developed in the remote Northern Ontario communities.

Hudson et al. (2012) through their research for the Institute of Social and Economic Research of Alaska Anchorage University, described several impacts and benefits to Alaska after access to ICT was enabled through the TERRA project in 2010. The TERRA project succeeded in extending broadband service to 65 communities on the Southwest part of Alaska using connection to the Internet by 'satellite backhaul'. Also, wireless connections were enabled residences to the local community substation, and from the substation to a satellite. Microwave towers were constructed and according to Hudson et al. (2012), most of the communities now have cellular service.

Resulting from this investment in infrastructure, the Internet is now used for banking and reservation services, online shopping, mobile broadband, the tourism industry, seafood processing industry, and educational institutions. In fact, Alaska is a pioneer in telemedicine with 248 sites connected to the AFHCAN network that links village clinics to regional hospitals, in an efficient, effective, equitable and reachable way through the TERRA – Southwest project. The project was

funded by a combination of grants and loans from the Rural Utilities Services (RVS) and federal funding from the National Telecommunications and information Administration (NTIA). The ICT was enabled through the installation of a combination of optical fiber networks and terrestrial microwave. The scope of the TERRA project is to connect 84 communities over 45,000 people to high-speed broadband by the end of 2017 (Handyside, 2017).

Recommendations

The following recommendations integrate our review of the relevant SDGs, and Indigenous considerations from our findings in the context of institutional isomorphism. As exemplified by the example of ICT development in Alaska and the K-Net case in Northern Ontario, we suggest that establishing an ICT infrastructure will lead to community developments along SDG#4 and SDG#11.

Infrastructure Recommendations

When considering the possible recommendations for the development of ICT infrastructure for remote areas, specific considerations need to be addressed. The criteria for choosing and finding infrastructure recommendations is based on reviewing the examples shown by the Alaskan TERRA project, the Northern Ontario K-Net case and considering costs, accessibility and community involvement. Although satellite connections and traditional cabling (including fiber optic) can be considered, a new technology of using High Altitude Platform Stations (HAPS) could be attractive. We describe two infrastructure choices:

1. Establishing a satellite connection consists on adapting the TERRA project from Alaska to the remote areas in Northern Ontario. A plan of action and past results are available from the details of the TERRA project. The case for Northern Ontario is very similar to the situation that Alaska experienced years ago. Thus, this method consists of having antennas installed which then would connect to an already existing satellite. This method does deliver high and efficient high Internet speed thus make any of the upcoming ICT social strategies possible to implement. Although it is clear that there is significant cost to establishing the ground-based satellites and microwave towers.

2. A new way of providing wireless connection to anyone regardless of their geographical location has been recently developed and is known as HAPS with Google launching Internet Balloons in a program known as 'Project Loon'. These HAPS systems are making

a quick impact on enhancing communication in remote regions worldwide. This technology can be placed anywhere around the world; deserts, oceans, mountains, forests, cities and even the most remote areas. As the HAPS systems constantly remain in the sky, digital waves are being sent over a specific area, thus providing quick, fast, reliable and secure Internet connection. This method launches balloons up to an altitude of 18-25 km where they travel in geosynchronous orbit in order to provide data (Kapri, & Singh, 2016). This option is also very cheap compared to the other possibilities as this requires an investment around 40k per balloon for an operation lifetime of 5 years (Burr, 2017). For example, on July 8, 2020, it was announced that Kenya's remote areas now have 4G LTE reliable connection expanding over 50 000 square kilometres by using 35 balloons. Since only 28% percent of Africa's population has Internet access, this method has proven to be a big opportunity that will help them to close this gap (Feleke, 2020).

ICT Social Strategies

When implementing ICT social strategies in remote and Indigenous areas across Northern Ontario or in any other remote region, a robust infrastructure providing Internet access is needed in order to be able to offer these services. Upon, getting a stable Internet connection, then the development of ICT social strategy can be initiated. An important part of fighting social isolation and building up independence and self-determination is through education (Friedel et al., 2012). Online service-learning is a successful strategy for developing the capacity and knowledge of students, therefore enhancing the student experience and making higher education available to anyone despite their location or background (La Lopa, 2012). The following suggestions address the common goal of the SDGs specifically SDG #4, institutional theory and Indigenous considerations.

1. Since there would already be an existent Internet infrastructure, one recommendation is to provide online education related to ICT infrastructure to the Indigenous communities across remote places in Northern Ontario. This online training can be delivered as online courses, where specific individuals are hired to remotely teach people how to work with ICT. The curriculum would be designed to approach the communities and encourage them to take part in taking control of their own ICT development and use.

2. Another recommendation is to implement a service-learning experience that could blend community students with institutions of higher education. This recommendation consists of

connecting students from the remote communities with students in urban centres to allow learning to happen on both sides, to empower Indigenous students in a learning process that also benefits their community, and to increase awareness of Indigenous conditions with students in urban areas. The students under the remote supervision of a faculty from the educational institution would work with the Indigenous student and their Northern Ontario remote community to apply their studies in an experiential and service-oriented manner. In terms of the students, this would not only be a great experience but also a unique way of learning and understanding the real world instead of just lecture notes (Simon, Burton, Lockhart, & O'Donnell, 2014). The remote communities would benefit from the service learning as they would then be less socially isolated, empowered to develop their community, and take part in increasing the knowledge of their Indigenous traditions among students.

Preferred Recommendations

In order to make an impact and to enhance sustainability, changes in both infrastructure and ICT social strategies must be made.

Our preferred recommendation for the infrastructure is the HAPS Option. 'Project Loon' is a new innovation with long term plans of expanding. It provides reliable, fast and secure Internet worldwide. At the same time, it is a sustainable and economically viable option with long term opportunities for further development as well. This option promotes the most community engagement and control over its ICT infrastructure.

Looking at ICT social strategies, we believe that community expertise about their ICT infrastructure is important along with the opportunity for service learning with and by the Indigenous communities. These strategies will result in greater engagement between urban and rural areas with remote Indigenous communities, enhanced student experiential opportunities, remote area sustainability, educational institution promotion and development, and many other reasons including the prominent one of working around COVID-19 physical restrictions. Also, this recommendation promotes different principles of the service-learning both towards the university students but with the remote community as well. Therefore, with the implementation of the above recommendations, connectivity and sustainability are expected to be help the community.

Limitations

There are a few limitations in this research including the limited available secondary data regarding ICT and Indigenous communities in Northern Ontario. In addition, Indigenous traditions, conditions, and technological accessibility may be different in different global settings. If trying to compare the remote areas from Canada with other regions from different countries a different approach would be needed since culture and main language would not necessarily have similarities.

Three future research areas can be explored: 1) primary research including interviews with these remote communities, so that the feedback of the citizens can be understood and taken under consideration when installing an ICT infrastructure project; 2) a policy paper regarding the suggested alternatives to see how to encourage external investment in ICT infrastructure and community development; 3) research towards developing regulations and standards so that the approach to both ICT infrastructure and community development can be institutionalized and controlled by the Indigenous communities.

Conclusion

In conclusion, the core of this article is about the infrastructure and ICT development in remote Northern Ontario regions. It is based on following two questions as mentioned before: How to develop and implement ICT in isolated communities? Could ICT infrastructure be considered a right?

Regarding the first question, by taking under consideration the preferred recommendations, developing the Internet infrastructure for remote communities in Northern Ontario using HAPS can be implemented. In order to develop ICT social strategies, a service-learning program offered by a post-secondary institution will provide the necessary resources in order to enhance community and individual knowledge mobilization. Institutionally, using the principles of isomorphism, it is possible that Indigenous communities in Northern Ontario embrace not just the examples of the K-Net Case but also the examples of Alaskan remote communities and how they were empowered as a result of their access to ICT.

Considering the question of whether or not ICT could be considered a right and analyzing it with the SDGs and institutional theory, the final conclusion is that the UN declaration that "No one must be left behind" " (Transforming our world: the 2030 Agenda for Sustainable

Development, 2019) should not be ignored. In the context of the SDGs, specifically SDG# 4 and SDG#11, every citizen should have access to quality educational and sustainable cities as well. No matter their geographical location or culture, a person should be able to choose whether he or she would like to be able to use technology towards their own benefit.

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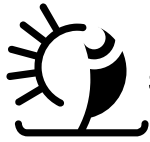
Noho Haumaru: Reflecting on Māori approaches to staying safe during Covid-19 in Aotearoa (New Zealand)

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Keywords: Pandemic • Covid-19 Responses • Health equity • Māori • Cultural Approaches

Abstract
This article provides a brief discussion of the impact of global pandemics on Māori and provides an overview of a number of the culturally framed responses by Iwi (tribal groups) and Māori organisations during the Covid-19 pandemic. It is highlighted that whilst there was a swift response to Covid-19 in Aotearoa (New Zealand), the response was fundamentally a 'one size fits all' approach which failed to deal with inequities within the existing health system. This led to the establishment of a National Māori Pandemic response group, 'Te Roopu Whakakaupapa Urutā' and the articulation of a range of Māori responses to engaging the issues surrounding Covid-19. In closing the article provides a discussion of some key Māori cultural concepts and practices which were utilised to support the wellbeing of Māori communities.

Introduction

For generations our whānau, hapū and iwi lived on these islands of Aotearoa free of the diseases that now plague many Indigenous Peoples. However, over the past 250 years the impact of colonisation has been devastating for Māori (Pihama, 2019; Smith, 1999; Walker, 2004). This includes the struggle to overcome the impact of the extreme population decline that came as a result of colonial invasion and the importation of diseases and war. This article reflects briefly on the impact of historical pandemics on Māori and shares some examples of responses by Iwi (tribal groups) and Māori organisations during the Covid-19 pandemic.

Early Māori Experiences of Pandemics

Durie and Naera (2020) highlights that pandemics such as Covid-19 are not new. From 1840 to 1901 Māori population numbers fell from around 98% of the total population to just 6% and by 1911 to 5%. This constituted a loss of around 60% of what our our population size was in 1769 (Pool, 2015). Pool (2015) refers to a key source of population decline as being

"*from disease invasions*" (p.14). While Pool (2015) considers this as unintentional given the limited medical knowledge of the time, Walker (2004) asserts that the introduction of disease had a significant impact on the ability of Māori to deal with the ongoing *"human invasion that lay ahead"* (p.80).

Māori have experienced multiple epidemics and pandemics as a result of colonisation. King, P., Cormack, D., McLeod, M., Harris, R., & Gurney, J. (2020) emphasise that "our collective historical, inter-generational and current experiences tell us that Covid-19 will have differential impacts on our whānau and communities" (p.1). It is clearly documented that Māori were significantly disadvantaged during both the smallpox epidemic of 1913 and the Influenza pandemic in 1918. During the 1913 smallpox epidemic there were 116 non-Maori cases recorded with no deaths, and 1978 Māori cases were reported, with 55 deaths. Similarly, during the 1918 Influenza pandemic it was recorded that Māori died at a rate of five to seven times that of Pākehā (Espiner, 2020; Mason & Tukaki, 2020). The influenza pandemic spread more virulently within Māori communities (Durie & Naera, 2020). Pool (2015) attributes this to factors including access to adequate health care; Māori having less immunity to the disease than Pākehā (white New Zealanders); morbidity rates; and the social impact of colonisation. These factors were further exacerbated by systemic racism and the predominance of deficit ideologies that created a context in which Māori did not receive the medical treatment needed (McLeod, Gurney, Harris, Cormack, & King, 2020; Pihama & Smith, forthcoming 2020; Waitangi Tribunal, 2019). As a result, Māori leaders set out to provide ways to serve the medical needs of our people during the influenza pandemic when the colonial government failed to do so. For example, Te Puea Herangi established a hospital at Tūrangawaewae to treat those with influenza (Ramsden, 1952). This provided a model of mana motuhake (self-determination), which has also been at the forefront of responses by Iwi and Māori organisations during the Covid-19 pandemic (Mason & Tukaki, 2020).

Entering Covid-19 Lock Down

The first case of Covid-19 arrived in Aotearoa on February 28, 2020. As cases began to enter Aotearoa, the development of, and movement through, a newly constructed Pandemic Level system was swift (Ministry of Health, 2020). At 11:59 pm on 25 March, under section 5(3) of the Epidemic preparedness Act 2006, Aotearoa moved into Alert Level 4-Eliminate status and a State of National Security was declared on March 26 (New Zealand Government, 2020) as the Covid-19 pandemic rapidly evolved. What was equally swift was the recognition by Māori that the 'one size fits all' government response to this health crisis would not be adequate

to guarantee the wellbeing of Māori (Reid, 2020). Māori health experts noted that this would particularly be the case if community transmission took hold (Jones, 2020). As Jones (2020) states:

> Many Māori health professionals are extremely concerned about the likely disproportionate impacts on Māori, and about the lack of an effective strategy from the government and health sector to deal with these impacts. (n.p.)

Entering Level 4 status saw new language emerge including terms such as: social distancing; physical distancing; essential workers; PPE; bubbles; testing stations; self-isolation and many others (Palmer, 2020). Māori drew upon our own reo (Māori language) resources to reframe the notion of 'lock-down' to one that aligns to cultural notions of staying safe. Terms such as 'noho i te kāinga' (stay at home), 'noho haumaru' (stay safe), 'rāhui' (restrictions, prohibitions) and 'mate karauna' (coronavirus) were initiated by Māori ourselves. Incidentally or co-incidentally, 'karauna' also means the Crown or State here in Aotearoa and 'mate' means sickness or death. The language reframing was a part of a wider move by Māori to position our responses within our own cultural approaches and relationships.

Noho Haumaru: Māori Approaches to Staying Safe

As a part of the wider response, Iwi (tribal groups) quickly moved to establish a National Māori Pandemic response group 'Te Roopu Whakakaupapa Urutā' (Te Roopu), made up of Māori health experts from across Aotearoa. Te Roopu was formed to provide a Māori voice to challenge the Crown to ensure that our rights, guaranteed by Te Tiriti o Waitangi, were maintained in the government responses to Covid-19. Furthermore, Te Roopu asserted that rights derived from the United Nations Declaration on the Rights of Indigenous Peoples and other international human rights instruments must also be upheld in actions taken in regard to the pandemic. Jansen (2020) describes Te Roopu as being focused upon the wellbeing of Māori and challenging the government to assess carefully the issue faced by Māori during the pandemic.

Reid (2020) emphasised the inequities that continue to impact upon Māori health, stating: *"A national programme, while necessary, will lead to exacerbate health inequities. While things are being done for the general population, they don't have an equity lens, which is essential from the beginning"* (Reid, 2020, p. 1). An early example of this was evident with the Ministry of Health's determination that the most vulnerable to Covid-19 included people with respiratory issues and those aged 70+ (Ministry of Health, 2020). Māori argued against the 70+ age group by asserting that the age for elderly Māori at risk is 50-60+ (Pihama, Smith,

& Smith, 2020). It was also argued that the incidence of respiratory issues among Māori is significantly higher than for non-Māori and there was a need to be more proactive in providing health services directly to Māori in culturally appropriate ways (McLeod et al., 2020). The need for culturally determined provision of health services and testing by Māori, and the ongoing impact of health disparities and inequities has been highlighted throughout the Covid-19 lockdown by Te Roopu (McLeod et.al. 2020; Jones 2020; King et al., 2020). It was very quickly noted that it was critical that hapū (subtribal groups) and iwi determined what was required in their own contexts for the wellbeing of our people. Iwi and Māori organisations employed a range of strategies using social media platforms and community engagement to provide focused and critical information to Māori.   In the next section, we discuss some examples of those strategies and responses that were framed around three key cultural practices: (i) rāhui (ritual restrictions/prohibitions); (ii) tikanga (protocols and practices); and (iii) manaakitanga (embracing others through care and support).

Rāhui

Rāhui usually refers to a ban, restriction or prohibition from an area (Mead, 2003) and is part of a "holistic and articulate system of tikanga" (McCormack, 2011, p. 45). Prohibitions or bans can occur in three particular contexts: for the purpose of conservation (marine resources, cultivated crops, depletion of seafood); when death has occurred (to enable personal and spiritual safety, as well as acknowledgement of the dead); and the political rāhui where a claim over land, water or resource is necessary (McCormack, 2011). In the context of Covid-19, rāhui is the process of putting in place ritual restrictions or prohibitions to safeguard Māori communities. Rāhui occurred at multiple levels, including creating protective boundaries; setting up iwi checkpoints; and supporting the movement to restrict entry into Aotearoa. Iwi checkpoints were set up across Aotearoa for the purpose of protecting Māori communities, in particular kaumatua and those with underlying health conditions. In Taranaki, for example, checkpoints were set up at Iwi expense and were continued through to 08 May 2020 to protect Iwi within the Taranaki region (Ngarewa-Packer, 2020). The Tai Tokerau (Northland region of Aotearoa) Community Borders initiative, designed to protect both Māori and non-Māori, was put in place and people were turned back who posed a threat to the health and wellbeing of people in the North (Ngapuhi Iwi, 2020).

Tikanga

The basis of the concept of tikanga is 'tika', which means to be right or correct in our

actions and as such it focuses us on "the correct way of doing something" (Mead 2003, p.5). Mead (2003) states that tikanga may be viewed as a cultural form of "social control", noting that "from this point of view tikanga Māori controls interpersonal relationships, provides ways for groups to meet and interact, and even determines how individuals identify themselves" (p.5). During Covid-19 a wide range of tikanga came to the fore, and some were placed within the rāhui in order to protect and safeguard the collective wellbeing of our people.

For example, the practice of hongi (to greet through pressing of noses) was restricted during formal and informal gatherings, with guidance offered that concentrated on prevention. As a part of their messaging, Te Roopu stated, "it's ok not to hariru, hongi, awhi or kihi anyone who does not live with you" and during funerals "at the funeral home, the funeral director will manage all health and safety requirements. No hongi …"(Te Roopu Whakakaupapa Urutā: National Māori Pandemic Group, 2020, p. 1). Another example included the restrictions placed on tikanga concerning tangihanga (the ceremonial process of grieving and burying our dead). A critique by Elena Curtis, a member of Te Roopu, highlighted that the government-imposed restrictions, which included only permitting 10 people in attendance at tangihanga or funerals, did not have Māori rights at the core, nor did they affirm mana motuhake (Māori self-determination) (Tyson, 2020). Given the rapidity of the process, it was determined by Māori that we would take every precaution to ensure that tikanga was able to be enacted in ways that would reduce the risk of Covid-19 transmission. Innovative practices such as online streaming of tangihanga and the fulfilment of tikanga through digital platforms enabled the cultural practice of tangi (grieving) to take place (Television New Zealand, 2020).

Manaakitanga

The concept of 'mana' is central to manaakitanga in that it affirms a specific Māori way of providing care and support. Manaakitanga refers to supporting and taking care of others in ways that enhance and uplift the 'mana' (status, prestige, standing) of others. Providing care and checking on whānau was activated in multiple ways. For example, Iwi and Māori organisations were actively engaged in food provision and providing wellbeing packages, with a focus on ensuring the wellbeing of kaumatua (elders) and staying connected (Durie & Naera, 2020; Pihama et al., 2020). In our tribal areas, and across many different Iwi, a range of initiatives for manaakitanga have been put in place. In Ngāti Rereahu, social media became a necessary tool during the Rāhui with initiatives such as 'Whakapiki Wairua' (spiritual uplifting), uploading self-isolation videos, on-line karakia (blessings), tamariki (children) sessions and disseminating information regarding food and wellbeing parcels (Mangapeehi

(Rereahu Marae) Covid, 2020).   The focus of these initiatives was to ensure connectedness and to provide support to Iwi members, which included an emphasis on the physical, mental and spiritual wellness of Māori.   In Taranaki, Māori organisations came together to provide food and wellbeing packages that were delivered door-to-door, with kaumatua being a particular focus (Te Ati Awa Iwi, 2020; Te Kāhui o Taranaki Iwi, 2020).   Other Iwi such as those in the Manawatū also supplied food and hygiene packages, with up to 30,000 health packs being distributed throughout Manawatū and Whanganui (Heagney & Jacobs, 2020).

Concluding Reflections

As we continue to live with Covid-19 as a global health crisis, Te Roopu has identified key issues that must be addressed in the event we see an increase in cases and there is an escalation of Covid-19 into our communities, including (i) the need for the Crown to stop its 'one size fits all' model and to ensure that specific Māori needs are addressed; (ii) to make systemic and structural changes within the health system that mitigate against existing inequities and institutional racism that underpin many Māori disparities in health; and (iii) for there to be a whole of government collaboration with Māori that deals with wider systemic issues such as poverty, housing and wider economic issues that are faced disproportionately by Māori. What is important to understand is that these key issues are not new; in fact they remain the same issues that have been voiced and struggled for by Māori for generations. That struggle is grounded upon the fundamental principle that the Crown must honour our place as tangata whenua and the rights enshrined within Te Tiriti o Waitangi (Te Roopu Whakakaupapa Urutā: National Māori Pandemic Group, 2020). The implications for the failure of the Crown to implement processes that deal with the inequities and disparities faced by Māori in the health system will mean that in the case of any future rapid escalation of Covid-19 and community transmission, Māori will be significantly impacted (Steyn et al., 2020).

Māori responses to Covid-19 have been framed within cultural, social and political frameworks that align to our wider aspirations within Aotearoa. While the government of the day has made clear and decisive decisions to prevent spread within Aotearoa, it became very clear that there was little consideration for the specific needs of Māori as tangata whenua, as Treaty partners and as a people who experience daily the failure of the current health system. The actions of Iwi and Māori organisations were critical to ensuring the wellbeing of Māori throughout the pandemic and Te Roopu Whakakaupapa Urutā continues as a national expert voice for Māori. Durie and Naera (2020) states that the low rate of Covid-19 within Māori communities (8% of all cases are Māori) indicates that "additional preventative measures have

been taken" (n.p).   Those "additional preventative measures" have been taken by Māori ourselves, and as Durie and Naera (2020) affirms "Māori action to prevent infection has shown positive results" (n.p). Māori are actively planning longer-term preventative measures to ensure the wellbeing of current and future generations, including the re-establishment of communal māra kai (gardens); the strengthening of our iwi social services; and continuing the challenge to the Crown in regards to our Treaty rights. These all align to our capacity, as Māori, to use our traditional knowledge and practices to strengthen our communities and continue to enact our own cultural and political systems to ensure the wellbeing of our people.

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Guatemala's Public Health Messaging in Mayan Languages during the COVID-19 Pandemic

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Abstract
Guatemala is a pluri-ethnic country in Central America. The 25 languages (22 Mayan languages, Xinca, Garifuna, and Spanish) spoken in the country present a challenge in the effective dissemination of public health messaging in an already understaffed and under-resourced public health system. This paper examines how the government, community members, and NGOs have worked to ensure the translation—both linguistic and cultural—of messaging in Mayan languages during the COVID-19 pandemic. The paper describes the case of messaging in Mayan languages generally; however, the examples draw heavily from our own work in Kaqchikel and K'iche' Maya communities. These are the two most commonly spoken Mayan languages in Guatemala and present a best-case scenario, especially related to the availability of effective public health messaging. Our examination demonstrates that while all translations are important, if only symbolically, effective public health messaging must be mindful of local contexts. Translations need to adhere to the linguistic form of everyday speech and reflect the appropriate cultural contexts.

Guatemala experienced its first confirmed case of the novel coronavirus on March 13, 2020. At the time of writing there were approximately 106,000 confirmed cases of COVID-19 within the country. The Guatemalan government took swift action, declaring a state of emergency in early March 2020 and closing the national border. Soon after unessential activities were suspended, interdepartmental travel was banned, sanitary perimeters around towns were created, and a curfew (6pm - 4am) was instituted. Despite these measures, Guatemala—as a middle income pluri-ethnic country—faces significant challenges when trying to confront the current pandemic. COVID-19 is overwhelming Guatemala's already under-resourced health system. As in other low and middle income countries, Guatemala's Indigenous peoples are among the country's the most

vulnerable because of a lack of resources and potentially a lack of information in Indigenous languages.

This paper explores the creative use of messaging in Mayan languages created and used by the government, Maya communities, and members of Guatemala's robust nongovernmental organization (NGO) sector. While we explore the case of Mayan languages generally, we draw heavily from our own experiences working with K'iche' and Kaqchikel Maya communities.

The Guatemalan Context

Guatemala is a Central American country of 18 million people. Approximately 42 percent of Guatemalans self-identify as Maya, speaking one of 22 Mayan languages (Instituto Nacional de Estadística, 2018). These 22 ethnolinguistic groups are primarily found in the rural countryside of Western Guatemala. K'iche' and Kaqchikel Maya are the largest groups with 1 million and 500,000 native speakers respectively. Itza' Maya is the smallest group with fewer than 2,500 native speakers (Richards, 2003). Most Maya speak their native language along with variable amounts of Spanish. Isolated rural communities are more likely to experience Maya language monolingualism.

Today's sociopolitical conditions are the result of a complex history of Spanish colonialism, 36 years (1960-1996) of genocidal civil war, and ongoing structural violence. While Guatemala celebrates the splendor and vibrancy of the Maya to tourists, it harbors ongoing "racial ambivalence" (at best) and more often overt racism towards its Indigenous citizens (Hale, 2006). This racial ambience materializes in reduced educational and economic opportunities and increased health disparities for Maya when compared to their *Ladino* (persons of mixed-ancestry; non-Indigenous) counterparts. Indigenous communities already living in a permanent state of precarity before the COVID-19 pandemic, now face additional challenges as the public health crisis unfolds.

Public Health System

Maya communities in Guatemala have little or poor health services. The Ministry of Public Health and Social Assistance (MSPAS) does not have enough personnel to attend to the rural, and overwhelmingly Indigenous, population because most of the qualified personnel and advanced technology are concentrated in urban areas (Hautecoeur et al., 2007). In certain rural Indigenous areas, MSPAS's investment often does not exceed 140 quetzales ($18 USD) per person (ICEFI,

2013). Not only is Guatemala's public health infrastructure severely understaffed and underfunded, it primarily provides care in Spanish; translation services, even for the most commonly spoken Mayan languages, are rarely offered.

Language and ethnicity are key determinants of health in Guatemala. For example, Maya communities experience stunting rates as high as 75 percent for children under five (compared to national stunting rate of 49 percent) (Black et al., 2013). The Ministry of Health has worked to create national food guidelines to improve nutritional status. While designed for implementation in a pluri-ethnic nation, these guidelines are developed from a Western nutritional science perspective. The cultural aspects of Maya models of health are rarely considered (Cuj et al., 2020). Furthermore the guidelines are published in Spanish, creating significant communication barriers. Poor access to education means a significant proportion of Indigenous adults are illiterate even if they can speak (some) Spanish. Indigenous women, those typically in charge of preparing meals, are most vulnerable to educational exclusion and therefore more likely to be monolingual in Mayan languages. In a similar way, the need for cultural and linguistic translation is critical to the accurate dissemination of COVID-19 information for Maya communities.

COVID'S Impacts

The COVID-19 pandemic threatens to overwhelm Guatemala's already fragile public health system and highlights longstanding health disparities. For many Maya, access to electricity, food, and potable water is limited. In fact, 51% of Guatemalans have no access to sanitation, making regular handwashing difficult (ICEFI, 2013). With public transportation restricted, communities struggle to access the most basic goods like soap or food. Legal stay-at-home orders likewise disproportionately impact the livelihoods of Maya who are more likely to work in informal economic sectors, selling products in regional markets. Since many Maya rely heavily on credit to survive, the inability to sell these goods has both immediate and long-term consequences. Thus, COVID-19 will accelerate social and economic marginalization of Maya communities. The government's failure to understand and respond to the needs and realities of Indigenous communities may result in failed containment of the virus.

Messaging in Maya Languages

Public health messaging cannot be effective if it isn't accessible in both form and content. Accurate information about COVID-19 such as effective hygiene practices, social distancing, quarantine, and mechanisms of prevention must reach everyone, especially Mayan language speakers. This information must be grounded in scientific evidence, within a framework of respect for Indigenous worldviews. This section of examines the role of Mayan languages in promoting the World Health Organization' COVID-19 recommendations and raising awareness of local resources.

Government

Every Sunday the president updates the country on the pandemic. These messages are delivered in Spanish, with no simultaneous translation to Mayan languages. Instead Mayan language translations are provided by the Guatemalan Mayan Languages Academy (Academia de Lenguas Mayas de Guatemala, ALMG).[1] While the ALMG has previously worked to standardize key health messages in Mayan languages (England, 2003; Fischer & Brown, 1996), the collaboration between the Ministry of Health and ALMG marks a key moment that the government has taken a proactive approach to translation at the national level. Despite this laudable effort it is unclear the extent to which these documents are effective forms of public health messaging. The documents, while written in Maya languages, may have little impact as the overwhelming majority of Maya are illiterate in Mayan languages. Additionally, the documents uses numerous neologisms, reflecting the speech style of professional linguists rather than the vernacular spoken in everyday conversation.

In addition to the translations of the presidential decrees the ALMG has been integral in translating key public health messaging for flyers, infographics, and sharable documents. These messages range in topics, including symptoms, hygiene, and flattening the curve. For example, the key social distancing message "stay home" or *"chatkanaj pa awachoch"* (K'iche'), *"kak'oje pa awochoch"* (Kaqchikel) is promoted on all platforms including television, radio, and social media.

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[1] The translations of the presidential addresses can be found for each language at the following link: https://drive.google.com/file/d/1XIJvS8OsZlmUaN12iumlkc7HNDmaVVhv/view?fbclid=IwAR3jfZDU1-hOAplW6vBHPr_Odu0Yyk2yiQFVhjRHE-ac6p8yvwEfEFYWNFo.

Community

Indigenous community members have created numerous videos sharing practical information on how to implement hygiene guidelines in contexts where there may not have access to running water, as is often the case in rural Indigenous Guatemala. These videos, widely shared through Facebook, generally feature Maya women in *traje* (Maya dress) using "hacks" to effectively wash their hands in the absence of running water. The "hacks" are culturally relevant and use materials readily available in rural settings (including empty plastic bottles, rope, and cane). The videos, usually narrated in Spanish, serve as a cultural translation of MSAPS messaging.

Community radio stations have also played a key role in disseminating information in Mayan languages. The content of these messages read by native speakers comes from ALMG, MSPAS, and the World Health Organization. Almost all cities have at least one local radio station providing programming in the Spanish and the local Mayan language. Community radio stations continue to be important in rural Indigenous Guatemala. They are not only a means of cultural revitalization, but also the primary connection many rural households have local and national news. The information provided by community radio stations is especially important for reaching elderly Maya who are less likely to have access to a TV and/or cell phone. Indeed, for some households, a radio is their only source of reliable information about COVID-19. Community radio is also important for the Maya diaspora who stream broadcasts of community stations like Radio Nahuala. Several of the communities where members of the Maya diaspora settle are COVID-19 hotspots in the United States. Community messages provide members of the Maya diaspora linguistically relevant messaging, potentially improving outcomes in both Guatemala and the United States.

NGOs

Guatemala's robust health NGO sector has been working to ensure the spread of accurate messaging in local languages. Numerous organizations have created short videos in Mayan languages on the symptoms of the disease and the importance of staying home to flatten the curve. It is relatively easy to find resources in Guatemala's most widely spoken Indigenous languages. Some NGOs have worked in cooperation to produce materials. For example, Maya Health Alliance and Proyecto Can have worked together to produce short videos in which an animated "Dr.

Chapín" answers frequently asked questions about the novel Coronavirus.[2] There are Dr. Chapín videos in Spanish and seven Mayan languages (K'iche', Kaqchikel, Q'eqchi', Mam, Tz'utujil, Q'anjob'al, and Ixil). Indeed, NGOs have worked in concert with each other to produce accessible public health messaging in Mayan languages.

Some NGOs' videos target specific populations, like Maya women. For example, the NGO Maia has created a video in Kaqchikel describing best practices for safely going to the market, an activity typically undertaken by women. Many organizations have similar videos. NGOs have posted these short (often around three minute) videos to their Facebook pages, allowing for easy access and sharing. This is critical as most rural Maya access the Internet through their smartphones and connectivity along with data limits can prove to be factors limiting accessibility.

NGOs are not only translating key messages, they are also continuing to provide care to the communities they serve. Here, cellphones serve an important role in the provisioning of services in Mayan languages, allowing frontline health workers to remain in contact with Indigenous patients despite quarantine orders. Telemedicine allows nurses and community health workers, in particular, to continue serving their patients despite the suspension of interdepartmental travel (Garcia et.al. 2020). Often these calls create a space for clients to discuss not only their medical concerns, but also their anxieties about the ongoing pandemic. The conversations, carried out in Mayan languages, simultaneously provide a space for health workers to make patients aware of available emergency relief services.

While NGOs are creating innovative and accessible messaging in Mayan languages, their concentration in certain geographical locations means that some ethnolinguistic groups are vastly underserved. For example, it is much easier to find effective public health messaging in K'iche', Kaqchikel, and Tz'utujil due, in part, to the proximity of these ethnolinguistic communities to NGO-dense areas.

Conclusion

Effective messaging in Indigenous languages is critical to the success of public health strategies aimed at curbing the spread of COVID-19. To provide messaging in all the languages spoken in Guatemala, it is necessary to translate messaging from Spanish into 22 Mayan languages

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[2] Chapín is a commonly-used slang term meaning "Guatemalan." In some areas it may be used to refer primarily to non-Indigenous Guatemalans.

(and Xinca). Not only is it necessary to translate public health recommendations linguistically, but also culturally. This translation places an additional strain on an already under-resourced public health system. In the past, the translation of health information has been haphazard and/or not culturally relevant.

Despite the missteps and failures of the past, Maya communities are resilient. Community activists and linguists have demanded effective public health messaging from the government and local NGOs. Messaging in Mayan languages during the COVID-19 pandemic has demonstrated the power of creative messaging. The government, with collaboration with ALMG, have ensured that messaging is translated to *all* Mayan languages, not just the most commonly spoken languages. Community members and their NGO allies have also translated public health messaging in ways that are culturally and linguistically relevant to local populations. Radio and social media have served as particularly impactful mediums in the distribution of these culturally and linguistically appropriate messaging.

As Guatemala faces the secondary effects of the pandemic, the lessons learned about the production and dissemination of effective public health messaging in Mayan languages will be important. The secondary effects of the novel coronavirus will disproportionately impact Maya communities. It is expected that maternal mortality rates will double, and poor communities will continue to see increases in child malnutrition.

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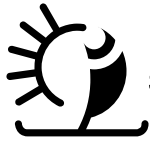
Pasifika Collective Well-Being During the COVID-19 Crisis: Samoans and Tongans in Brisbane

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Abstract
This paper gives insights into the collective ways that Samoans and Tongans living in Brisbane have responded to the changes and uncertainties of the COVID-19 era. As Samoan and Tongan insider researchers, we present observations and dialogue from Samoan and Tongan families that were recorded during March 2020, as part of an inquiry into Pasifika mobilities and well-being in Australia. The responses drawn from these cohorts suggest an established resilience and purposed creativity during this global crisis. The social distancing regulations, border closures and travel bans have caused Samoan and Tongan communities in Brisbane to engage more; particularly connecting through digital spaces (vā) of social media and other online communication platforms. Pasifika have responded to the pressures and parameters of a pandemic with innovative ways of nurturing their collective well-being.

Introduction

The COVID-19[1] worldwide pandemic triggered changes to traditional ways of living, for Samoans and Tongans in Brisbane. The collective well-being of these two *Pasifika*[2] groups were particularly affected by the social restrictions and travel bans implemented in Australia and across the Pacific. However, despite the disruptions caused by COVID-19, the digital *vā* has allowed this cohort to remain connected to their family and friends. Through the digital vā[3] these groups have been able to continue their collective way of being. This paper will present a selection of observations and dialogue recorded in Brisbane, Australia, during March

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[1] The World Health Organization (WHO, 2020a:1) initially referred to the unknown pneumonia cases recorded in Wuhan, China as 'Novel Coronavirus (2019-nCoV)' and a month later began to use the official term 'COVID-19' (WHO, 2020b:1).

[2] 'Pasifika' is a term used by Pacific Islanders as a pan-Pacific Islander identity shared by community groups living in transnational contexts, particularly in Australia and New Zealand (McGavin, 2014:128, 134; Mila-Schaaf, 2010:22-23).

[3] 'Vā' is a concept that means similar things to both Samoans and Tongans. It denotes a social space that exists between people; a relationship that is both socially and culturally significant to their way of life.

2020.[4] As insider researchers, we aim to share the challenges faced by Pasifika communities, as well as their countered measures of integrated resilience and collaborative creativity during this global crisis.

It is important to acknowledge the influx of Samoan and Tongan people into Brisbane has also meant the arrival of their culture. This cohort did not forsake their island ways upon migration to Australia, instead, they have used it to navigate their place in a new country (Enari, 2019; Enari & Matapo, 2020). Pasifika academic and poet Karlo Mila-Schaff (2010) has labelled Tongan and Samoan diasporic settlement as a re-territorialising of the island homeland where they continue interconnected collective ways of living. For this reason, Samoan and Tongan well-being experiences during COVID-19 are better understood through their worldviews of *fa'a-Sāmoa* (the Samoan way) and *anga faka-Tonga* (the Tongan way) (Enari & Fa'aea, 2020). These two frameworks are similar in how they prioritise relationships in their daily living (Gershon, 2012; Taumoefolau, 2013). According to Pasifika well-being author Cabrini 'Ofa Makasiale (2013), relationships with God (spirituality) and with others (communality) are important aspects of life for Samoan and Tongan people living in diaspora contexts (Ihara & Vakalahi, 2011). Although Samoan and Tongan people have migrated away from their homelands to Pacific Rim countries like Australia, New Zealand, and the United States, they will repeatedly return to previous locations to maintain socio-cultural linkages (Barcham, 2009). Evidence of this solidarity in migration and settlement in Brisbane was recorded in narratives and surveys collected during 2015-2018 (Faleolo, 2020b, p.103):

> Familial and community interactions are important factors in[...]decision-making when Pasifika trans-Tasman migrants plan a move from Auckland to Brisbane. The ability to stay connected to both nuclear and extended family, as well as attend a place of worship are as important if not more so, than the proximity to employment opportunities. Familial/social connection points are significant in providing sustenance for Pasifika individuals.

Samoan social geographer Sa'iliemanu Lilomaiava-Doktor (2009) asserts that fa'a-Sāmoa is demonstrated through the investments made by Samoans who migrate abroad to progress and extend familial status and connections.

> Each member has roles and responsibilities to fulfill. Tautua (service) still requires that one's resources be placed at the disposal of the family, including 'intelligence' from formal education and 'strength' derived from wage and salaried labor (Lilomaiava-Doktor, 2004:264). The themes that emerge from [...] stories about movement and

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[4] Observations and dialogue of Tongans living in Brisbane presented in this paper, have been drawn from participant-observation fieldwork conducted by Faleolo, as part of an ongoing larger study of Pacific mobilities in Australia, undertaken as part of her postdoctoral research (2020-2022). Refer to author notes for project details.

> mutual support focus on caring relationships and describe more than the pursuit of
> wealth for wealth's sake. [...] Moving for them is about self-determination as the 'aiga
> take advantage of opportunity. In their terms, taking the risk of going to New Zealand
> or America is part of fa'a-Samoa. (Lilomaiava-Doktor, 2004, p. 271)

The development of socio-cultural wealth, through migration, has been recorded in a recent study of younger and older Samoans who are maintaining their identity as 'Samoan' and continuing to practice fa'a-Sāmoa as a way of supporting their communities in the contexts of Australia and New Zealand (Enari, 2019). Similarly, Tongan cultural anthropologist Tevita Ka'ili (2017) states that the migration of Tongans is a collective movement that provides support for those who remain as well as opportunities for others to follow. Samoans and Tongans choose to participate in circulatory mobility because of an innate desire to help progress their collectives (Faleolo, 2020b).

Therefore, the ability to move freely between diaspora communities and island homelands is important to the way of life led by Samoans and Tongans based in Brisbane (Faleolo, 2019). The to-and-fro movements of Samoan and Tongan people between diaspora communities and their homelands is part and parcel of their *tausi le vā* (Samoan for maintaining social spaces) or *tauhi vā* (Tongan for maintaining social spaces) processes of reciprocal maintenance of relationships (Ka'ili, 2008 & 2017; Lilomaiava-Doktor, 2009). Similarly, the regular visits and gathering of groups within Brisbane or overseas allows for important face-to-face *talanoa* (talking, communicating, storying) that builds and nurtures social spaces (Halapua 2007; Vaioleti 2006).

Samoans and Tongans, across their transnational spaces, have sought to overcome the distances and boundaries that come with COVID-19 regulations. The following sections will present observed Samoan and Tongan experiences in Brisbane that indicate the determination to stay connected to one another. Pasifika academics have labelled this new form of social and cultural engagement as the digital vā, where the reciprocal maintenance of relationships still applies through the internet (Enari & Matapo, 2020; Tielu, 2016).

The Australian federal regulatory announcements, beginning in March 2020, created widespread apprehension across the country. In Queensland, after enduring several months and consecutive years of extreme natural events, the encroaching COVID-19 pandemic was met with some grim seriousness. The fluctuating dynamics of Brisbane-based Samoan and Tongan daily lives were again tested by an increasing uncertainty about their future collective well-being. The COVID-19 pandemic social restrictions exacerbated already dire situations for some Australian-based Pasifika, at the time of observations (Rose-Redwood et al., 2020). The

prevailing economic recession (Shukla, 2020); ongoing legal, health, housing and educational issues related to inequitable access to resources and social support (Aust. Gov. Australian Institute of Health & Welfare, 2018; Rose-Redwood et al., 2020; United Nations, 2020); psychological trauma (Shakespeare-Finch et al., 2020) linked to seasonal events: cyclones, floods, drought and bush fires in Australia (2017-2020); continuing discrimination of Pasifika peoples in Australia (Durham et al., 2019); and growing anxiety over not knowing how other overseas family members are faring (Craig et al., 2020), particularly their elderly (Nanda et al., 2020); these are all current concerns for most Samoans and Tongans living in Brisbane that have been heightened by the unprecedented global phenomena (Shukla, 2020).

Methodology

As Samoan and Tongan insider researchers, we present observations and dialogue from Samoan and Tongan families that were recorded during March 2020, as part of an inquiry into Pasifika mobilities and well-being in Australia. Our physical observations were undertaken as participants during Samoan/Tongan community activities within Central Brisbane, Ipswich, Logan, and Northern suburbs. The range of activities/events observed, took place in a range of contexts, such as business meetings, educational contexts, religious forums and sporting or recreational settings.

Our initial observations and conversations were focused on understanding how social regulations introduced in the month of March affected the well-being of our communities. As we became more aware of the online strategies used by our informants to nurture and maintain their collective well-being, we further inquired using *e-talanoa* with these particular groups. E-talanoa is a concept coined by Faleolo (2016; 2019; 2020b) referring to ongoing dialogue, sharing of ideas, and storying experiences using online forums while maintaining important Pasifika protocols and understandings of vā. Our connections as co-authors (Figure 1) as well as with our informants (Figure 2) were increasingly maintained through digital vā (Enari & Matapo, 2020) by continual e-talanoa (Faleolo 2020a).

Figure 1: Authors use e-talanoa to unpack findings from their community e-talanoa
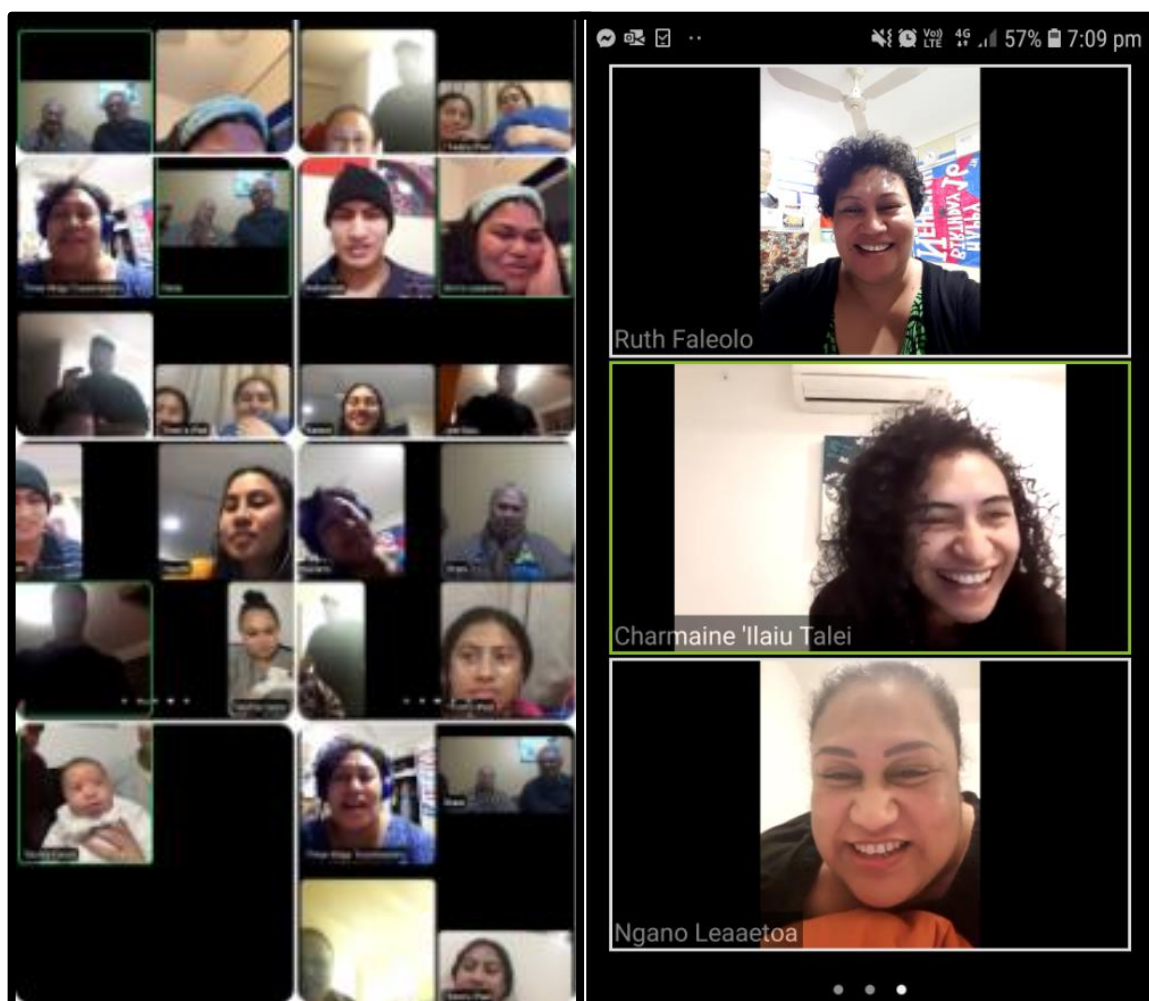

Figure 2: Establishing a digital vā with Pasifika collectives during COVID-19

Both these Pacific approaches have developed from deep cultural knowledge and values that are embedded in our research practice. The significance of maintaining vā is foundational to engaging in talanoa. In the same vein, prior to having effective e-talanoa focused on the research work, we took the time to establish positive digital vā through building the relationship

first (e.g. introducing ourselves, making genealogical connections, building socio-cultural links, finding common ground or relatable experiences). Further to this, online connections evidently became progressively more vital to the Samoan and Tongan communities as the social and travel restrictions increased within Australia. These important experiences are outlined in the following sections, highlighting the significance of Pasifika solidarity during the pandemic.

Samoan Experiences in Brisbane

The COVID-19 worldwide pandemic has not only led to changes in Australia but has also affected the collective well-being of Samoans residing in Brisbane. The March 12th Federal Government ban of gatherings with more than 500 people directly impacted Samoan people in Brisbane. Because of the communal nature of this group (Enari, 2019), many regularly engage in events that exceed 500 people such as church activities, cultural celebrations, and family reunions (Gershon, 2012). The added isolation caused by the Australian border closure has further disrupted this community and their way of life (Aust. Gov. Dept. of Home Affairs, 2020). It is the first time this cohort has been physically disconnected from the global world. The border closures have meant they were unable to visit their relatives in other countries, including the homeland Samoa. Many Samoan cultural ceremonies in the islands have been postponed because of the inability of diasporic Samoans to travel and participate (Aust. Gov. Dept. of Home Affairs, 2020; Craig et al., 2020; Salcedo et al., 2020). For example, a Samoan chiefly ceremony in Samoa had been cancelled because the recipients from Brisbane were unable to attend. Other occasions such as weddings, birthdays and memorials have either been cancelled or postponed in Samoa because of the travel restrictions and inability of overseas families to attend (Salcedo et al., 2020). One Samoan lady who resides in Brisbane, voiced her frustration of not being able to travel during an e-talanoa:

> It has been very hard for me because my parents are buried in Samoa. I normally save my money in Brisbane to go and see my parents who passed away and my family in Samoa who still live there. That is such a special time for me. But now for the first time in my life I can't go and hug my cousins and touch my parent's headstones.

Even within Australia many Samoan people were unable to visit each other because of the state border restrictions.

Furthermore, on March 22, 2020 the Prime Minister's announcement on the closure of non-essential indoor venues and non-essential services including pubs, clubs and restaurants financially affected the Brisbane Samoan community. Many of this cohort are employed in the

hospitality industry within restaurants. Sadly, those who were not Australian citizens were ineligible to claim benefit payments (Durham et al., 2019; Faleolo, 2019). This resulted in some moving back to New Zealand and Samoa. The rapid nature of COVID-19 restrictions and employment layoffs meant for some (International Labour Organization, 2020), the only way they could survive was to leave Australia. The task of suddenly relocating and looking for work in another country was made increasingly difficult during a global pandemic (Craig et al., 2020).

The rise in unemployment among Samoan people in Brisbane not only caused financial difficulty for this group and their immediate family but also their extended relatives who reside internationally (Shukla, 2020). Some of their relatives overseas depend on the remittances they receive from their Brisbane family (Lilomaiava-Doktor, 2009). Despite the financial and logistical challenges that were faced by Samoan people in Brisbane during COVID-19, there were also those who were able to use the isolation period to spend more time with their families. Some Samoans had labelled the COVID-19 period a time to "disengage to re-engage" and many within the community saw the COVID-19 isolation period as an opportune time to interact more with their family.

An increased presence of family members in the home meant an increase in youth learning cultural knowledge such as language, performances, and village legends. Many of the youth in particular have called the COVID-19 restrictions "a blessing" as they believed they "wouldn't have gained as much cultural knowledge from [their] parents if it weren't" for the isolation restrictions. The intergenerational make up of Samoan households in Brisbane, with some having as many as four generations in one house meant Samoan oratory skills were being passed down. COVID-19 offered a rich cultural experience within families: oratory shared from great grandparents, who were alive during Samoa's independence to second-generation Australian-born great grandchildren. A Samoan grandparent spoke of her time with her grandchildren during COVID-19:

> This has to be the only time my grandkids have been at home long enough for me to be able to teach them more about our Samoan language and culture. We have had the best time together and I know what I teach them is more valuable than what they learn at school. I am teaching them about who they are as Samoans and our connection back to our village.

The isolation restrictions meant not only were people interacting more with family members in their household but also with other family members around the world through the digital vā (Enari & Matapo, 2020). This period has resulted in the strengthening of familial

ties, not only with family members in the home, but across the world (Enari & Matapo, 2020). In essence, Samoan people in Brisbane were actually not social distancing but in fact socially interacting at a physical distance.

Tongan Experiences in Brisbane

The COVID-19 worldwide pandemic has led to changes in Australia that have impacted the collective well-being of Tongans residing in Brisbane. Restrictions introduced in March 2020 have meant that the norms of traditional events and socio-cultural gatherings were either postponed, cancelled, or rescheduled as virtual meetings (online). On March 12th, the Federal Government banned gatherings of more than 500 people. For one Tongan family, a wedding scheduled to take place in Australia had to be postponed till 2021 because of the absolute number of people expected to attend the occasion, exceeding the limit. This threshold coupled with an overseas travel ban[5] made customary festivities, involving extended families, near impossible. The groom-to-be of a Tongan family based in Auckland, Brisbane and Sydney shared his frustrations online using the Private Messenger chat forum (e-talanoa):

> We were a bit sad that we couldn't have everyone come to our wedding this year. We both agree that it is important to have our relatives and friends join us, so we're going to wait till next year. It just doesn't seem right to get married without our loved ones, although there is the option to do it straight away at the office or with our pastor on our own, it just isn't right. We know that our mothers have planned to do things involving our traditional customs and this is important to us as much as it is to our extended families. We have to wait till we can do a big traditional wedding because the government regulations are so strict about the numbers that can attend our wedding. Plus it's a bit risky having all those people in one place, especially with the coronavirus going around. Yeah, not really worth the risk eh?

The travel ban in Australia created further distance between Tongans in Brisbane and those living abroad (Aust. Gov. Dept. of Home Affairs, 2020; Salcedo et al., 2020; Shukla, 2020). For many Tongans who have migrated to Australia, the majority of their *famili*[6] still reside in either New Zealand or Tonga. So, it is common practice for members of famili Tonga to maintain important socio-cultural connections by making regular trips 'back home' to New Zealand and their islands. For most second-generation and third-generation Tongans in Brisbane, a key reason for these annual trips is to "visit loved ones" and to "check-in on the folks back home." Therefore, the uncertainty around travel restrictions created anxiety amongst

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[5] Another announcement made on March 12th, 2020 by the Federal Government was that Australian residents should no longer travel overseas unless it was essential.
[6] *Famili* is a Tongan term used widely to refer to family, inclusive of nuclear and extended family members/groups.

Tongans "feeling stuck" in Brisbane. Several Tongans spoke of their concern for the safety of famili living abroad[7] (Rose-Redwood et al., 2020; Shukla, 2020) and whether the daily needs of their elderly parents, living abroad, were being met and a genuine concern for their safety from the COVID-19 virus (Nanda et al., 2020). For many of them, online forums such as Facebook, Messenger and Zoom became the main connection point for their famili during this time.

The tightening of social distancing regulations has prompted the increase in online connections between Tongans. These important online relationships became particularly important when the Queensland State Government announced full lockdown measures[8] (ABC News, 2020; Shakespeare-Finch et al., 2020). At first, online discussions ensued informally amongst famili. These online connections quickly led to more organised networks; including the various live church coffee chat sessions, the 'pass the *kiekie*[9] challenge' and other Tik Tok transformation challenges. The closure of churches and other community spaces was an impetus to further utilise enmasse available technology and social media forums. There was an increased use of Messenger or Zoom video conferencing and face-time meetings for e-talanoa between Tongan youth groups, Tongan sport club members, Tongan academics, and famili members. In essence, 'virtual villages' that had existed prior to COVID-19 for Tongans further developed and flourished as a result of the physical social regulations introduced across the globe at this time.

The development of new business ventures and creative forms of income for many Tongans has benefited from the growing online presence of both younger and older generations of Tongans. On March 23rd, the closure of non-essential services and venues in Queensland meant that many residents, including Tongans, were left without work. One woman living in Brisbane shared her story during a Zoom (e-talanoa):

> We all felt the pressure when we were told to stay home from work. Not long after the lockdowns happened our company lost a lot of its contracts. When we got to go back to work, some of us were asked to see the boss and we kind of knew that we might be getting laid off. I was one of them. I was just glad that I had applied quickly for another position and got it because I got laid off on Thursday one week, and I accepted a new job the following Tuesday. It is a computer-based job working from home, so I am home with the kids now since the schools are closed. With my new job, I have been able to keep our rent paid and still send some money to New Zealand to help them out.

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[7]The World Health Organisation (WHO) declares a 'public health emergency of international concern'.

[8] Queensland's premier responded to advice from the Chief Health Officer in response the spread of COVID-19 cases in the state, Updated 25/6/20. https://www.abc.net.au/news/2020-03-28/coronavirus-timeline-queensland-tracking-spread/12077602?nw=0 (accessed on 27 June 2020).

[9] Kiekie are traditional crafts designed to be worn by women around the waist, as a cultural form of respect.

> I can't imagine what might have happened if I didn't act on time to get myself hooked up in alternative employment.

Furthermore, the Queensland Premier closed the state borders two days later. The impact of these closures and restrictions on Tongans based in Brisbane, yet working in other parts of Australia, heightened financial pressures. However, the already well-established online communities now served as a new way of trade for the online sale of Tongan goods and crafts; particularly kiekie and *ta'ovala* (fine mats worn around the waist), and popular dishes such as *pai faina* (pineapple pie). Furthermore, despite some concerns about physical inactivity related to social networking (Leigh-Jones & Moore, 2012) and physical lockdowns at home, many Pasifika, including Tongans, had engaged in live video activities like 'The Good Start Program' helping to promote healthier lifestyles (home-based exercise routines, healthy alternative cooking tips during lockdown, etc.) without the added expenses of going to the gym or to order the usual fast foods. One woman found the Good Start Program to be a good distraction from the negative media focused on the pandemic. She found talking to her community members on Facebook about how best to spend time during lockdowns to be life-changing:

> My son introduced me to his friends at uni. These students have set up a good online health program, I think it's called the Good Start? oh, yes that's it, the Good Start Program. I joined them for their cooking classes and for their evening workout routines. It's a good way to stay connected to the young ones out there who are doing a good thing for our community during this time. I have been able to work my way back into an exercise routine that I can do at home. Don't really need to pay for those expensive gyms when you know how to safely exercise in your own backyard. I feel better for it too. I told others in my family to give it a go. My daughters have gotten into a regular workout together using another online exercise program. But I enjoy my Good Start Program because its Pacific Islanders talking to you and they know us Pacific bodies better than others lol.

Another significant development within the Brisbane Tongan community occurred during the long months of COVID-19 social distancing. The timely launch of Brisbane's Pasifika TV and Radio provided an important platform "to share the music, news, culture language and stories of …Tongan people" (Layt, 2020b). As Faleolo (2020c) explains, the physical and social restrictions were felt by the Tongan collectives, but it was also a catalyst for the increased use of online forums for intergenerational connections. During March 2020 several famili Tonga collectives transitioned from a reliance on gathering within physical spaces to utilising available virtual spaces like Facebook, Skype, Private Messenger Chat, and Zoom. These online forums used for e-talanoa influenced the way churches and other community groups met

and communicated. Tongan communities have fostered new ways of promoting their collective well-being, beyond the travel bans and despite the social restrictions imposed upon them.

Discussion

The Samoan and Tongan groups observed do not conform to universal notions of individualism, as their lives are founded on collective cultural values that esteem communal solidarity (Faleolo, 2016 & 2020b; Lilomaiava-Doktor, 2004; Taumoefolau, 2013). It is the fact that our Pasifika people are interdependent that intrigues us as researchers to look closely at how they have responded to the social regulations implemented during COVID-19. Our observations and ongoing communication with respective Samoan/Tongan groups show that their collective well-being has been affected (Enari & Fa'aea, 2020). More specifically, the rules and regulations have fundamentally disrupted the inability to physically gather with their family, church, and community groups. Typically, Samoans and Tongans see themselves as part of a wider network (Gershon, 2012; Taumoefolau, 2013); the Samoan term 'āiga potopoto refers to the extended family or circle to which one belongs. Similarly, the Tongan term for this communal concept is kāinga. When one member of this collective is affected, they are all affected. For example, the pain of bereavement or loss of employment by one, is felt by the whole group.

In these situations, Pasifika people would give openly with disregard for the length of time or financial resources spent (Faleolo, 2019; Lilomaiava-Doktor, 2009). Many would travel far distances to be physically close and to serve their family; funeral preparations, week-long mourning, buying extra groceries and providing after hours child-care are normal forms of support that are rendered to others during times of need. It is this innate desire to provide physical acts of solidarity that has been challenged by the restrictions and bans instituted in Australia, further impacting vital forms of sustenance for the collective good and well-being of Samoans and Tongans.

Not only have the physical restrictions in Brisbane affected the socio-cultural aspects of Samoan and Tongan collective well-being, but also other spheres of holistic happiness, including spiritual, mental, emotional, environmental as well as economic aspects of a 'good and happy' life (Faleolo, 2020b: 220). As outlined above, a range of events and activities came to a halt in March 2020, causing job loss, financial stress, school, and campus closures, as well as cancellation or uncertainty around scheduled family or community events. The holistic nature of collective well-being for Samoan and Tongan people means that when one area of their well-being is affected, it has a ripple-effect on other areas of their collective well-being.

However, despite the negative (in)direct impacts of the pandemic felt by Samoans and Tongans living in Brisbane, there is evident resilience within our communities. Our Pacific world perspectives, as Samoan and Tongan people living in Australia, draws upon our deeply-embedded socio-cultural values and faith. Fa'a-Sāmoa and anga faka-Tonga are based on shared understandings that when problems arise, the collective will transcend these obstacles through their spirituality and communality (Ihara & Vakalahi, 2011; Makasiale 2013). These are evident in the resilient ways that Samoan and Tongan people have adapted their forms of community, connection and knowledge-passing beyond the parameters and dynamics arising from the COVID-19 regulations. The benefits of building and maintaining online connections that nurture holistic well-being are possible solutions for non-Pasifika groups struggling with increasing social isolation during the pandemic crisis.

Modern technology and the digital space has helped collapse communication barriers and increased interconnectivity among these communities. Many of these people are more connected than ever before: locally, nationally, and internationally. Ongoing e-talanoa within global Tongan collectives has maintained intergenerational connections that are key to their shared well-being (Faleolo, 2020c). Interestingly, this group does not passively engage in the digital space, instead, they indigenise these western forms of technology (Tielu, 2016). They have used the digital space for Pasifika language teaching (Wilson, 2017), Pasifika cultural knowledge exchange (Enari & Matapo, 2020) and e-talanoa (Faleolo, 2020a, 2020b & 2020c).What these groups have done in essence is (re)drawn the digital space to reflect their own Pasifika realities and journeys (Franklin, 2003). The digital vā has helped connect Samoans and Tongans in Brisbane to their families and friends, across the globe. On another note, members in both the Samoan and Tongan communities have decidedly used the isolation period to cull activities that usually deduct quality time with loved ones and to re-prioritise their home life and health. In response to the COVID-19 regulations, Pasifika people have improved both the quality and quantity of time spent with their households, and more than ever, interchangeably engaged with each other both face-to-face (when and where regulations permit) and via the digital vā (Enari & Matapo, 2020).

Conclusion

As communal people, both the Samoans and Tongans observed in Brisbane have felt the impacts of COVID-19 not only in Australia, but also across the diaspora and their island homelands. The very nature of familial collectives and community networks that span across multi-locations is that one member or part will feel the pain/loss/burden of another member or

part. The collective nature of Samoans and Tongans is, however, the main reason our families and communities can progress, resolve, and create new opportunities borne from shared hardships. The social distancing regulations, border closures and travel bans have caused our communities to increasingly re-engage in the digital spaces that are easily accessible across multi-sited familial networks. Although social regulations and border closures disallowed Samoans and Tongans to meet as large groups, they continued to gather through the digital vā. The global challenges of COVID-19 have provided an impetus for building online forms of socio-cultural connections that will help to sustain and nurture physical vā between intergenerational family and community members. It is envisioned that post-COVID-19 life for Pasifika collectives will continue to navigate the digital vā and enhance the interactions that will occur within physical spaces in the community, including the increased use of technology in churches, businesses and family homes to provide more effective and engaging communication and knowledge-sharing.

In closing, this discussion has presented valuable insights into how Pasifika collective cultures have contributed to more sustainable communities, during COVID-19. Future pandemic initiatives should consider how the well-being of peoples from collective cultures will be affected by social distancing measures. Also, both federal and state governments should take note of how these existing familial and communal networks can provide more effective platforms for conveying important information across multi-sited, intergenerational groups, while maintaining their cultural protocols and preferred languages. Despite the very recent COVID-19 trials faced, and after dealing with a host of disadvantages, adjustments and overcoming challenges to migrate, live and work in Australia, fa'a-Sāmoa and anga faka-Tonga even now endures. Not only do these worldviews survive, but they also thrive among its people and are foundational to the holistic well-being of Samoan and Tongan communities in Brisbane. It is our humble prayer that those who engage with us will also acknowledge the importance of our cultural frameworks and collective communities. *(Al)ofa atu*.

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Historical Environmental Racism, Structural Inequalities, and Dik'os Ntsaaígíí-19 (COVID-19) on Navajo Nation

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Abstract
The Navajo Nation has been disproportionately affected by Dik'os Ntsaaígíí-19 (COVID-19), with the highest per capita COVID-19 rate in the United States. While some media attention has focused on the importance of structural inequalities in understanding the heightened experiences of COVID-19 for Navajo people, we draw from Indigenous knowledge and Indigenous research paradigm to bring the need to consider the lasting legacy of historical environmental racism on Indigenous lands to the center of the current public health dialogue. Specifically, we explore the potential lasting health implications of the historical environmental racism on Navajo people at the ecological level by describing the associations among abandoned uranium mines, structural inequalities (as measured by social conditions, lack of grocery stores and hospitals) and COVID-19 confirmed cases on the Navajo Nation by compiling unique dataset from the Navajo Department of Health, 2014-2018 American Community Survey 5-years estimates, and the Uranium Mines and Mills Location Database from the U.S. Environmental Protection Agency. We found that population and housing characteristics do not fully explain the different COVID-19 cases among 11 counties on Diné Bikéyah, and suggest that there is a need for the holistic approach is guided by Hózhó wisdom of Navajo people that emphasize the importance of interconnectedness and whole-system in understanding the impacts of Dik'os Ntsaaígíí-19.

Since the first confirmed case of Dik'os Ntsaaígíí-19 (COVID-19) on Diné Bikéyah[1], the Navajo Nation, on March 17, 2020; the number of COVID-19 cases per capita started to grow at

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[1] In the Navajo language, Diné Bikéyah refers to the lands of the Navajo Nation, Navajoland. This article uses 'Diné Bikéyah' more generally when referencing the sovereign Tribe as an entity as well as the

an accelerated rate compared to other places in Arizona. By mid-May, it had the highest per capita COVID-19 rate in the United States, even surpassing the initial epicenters. Not only have Navajo people been experiencing the greater proportion of the population contracting COVID-19, but they are also seeing more severe health implications and higher probability of COVID-19 related death. At first glance, there is a paradox between the COVID-19 infection rate and population density because the Navajo Nation is a rural area of 27,000 square miles with very low population density of approximately seven people per square mile (Hu, Nigmatulina, & Eckhoff, 2013).

However, once we expand our scope to include structural inequalities generated by historically-embedded systemic racism, we can trace the architecture that exacerbated the spread of COVID-19 on Diné Bikéyah. Historical injustices such as forced assimilation and separation of families through Indian boarding schools (Lomawaima, 1995), environmental contamination due to resource extraction (E. Hoover et al., 2012) and institutional marginalization (Wilkins & Lomawaima, 2001) have manifested in the current social and health conditions. Diné Bikéyah is larger than 10 states in the United States, and yet to the best of our knowledge, there are only 13 grocery stores and 14 hospitals. These structural inequalities directly affect access to basic needs such as food, safe and clean water, and quality healthcare. Simultaneously, these experiences "get under the skin" over time (Taylor, Repetti, & Seeman, 1997) and contribute to health inequalities through weathering (i.e., physiological manifestations of accumulative stress from social inequalities) (Geronimus, 1992) and intergenerational transmissions (Brave Heart, 2003; Palacios & Portillo, 2009). In fact, American Indian, Alaska Native, and Pacific Islander Peoples are in a vulnerable position of experiencing more severe illness and complications from COVID-19 due to their disproportionate overrepresentation in underlying chronic medical conditions (Centers for Disease Control Prevention, 2020b, 2020c; Huyser, Rockell, Wilson, Manson, & O'Connell, 2020).

Although the pandemic is ongoing and ever-shifting in its nature, we observe that current efforts have been predominately focusing on only proximal factors of COVID-19 (e.g., individual-level pre-existing "risk" health condition factors and mitigating strategies like hand washing and wearing a mask) without critical attention to more distal factors such as social conditions from structural inequalities. We argue that individual-level interventions and mitigating strategies have

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geographic location of the Tribe's reservation. For clarity, acts of Tribal governance are attributed to the sovereign government 'Navajo Nation'.

little benefits; and interventions and mitigating strategies should be grounded in the social determinants of health framework (Marmot & Wilkinson, 2005) that explicitly account for larger social forces including social and health circumstances. More importantly, we argue that research and public policy efforts to ameliorate the disproportionate effects of COVID-19 on Indigenous Peoples and communities must be grounded in an Indigenous research paradigm (Hart, 2010) which centers on Indigenous knowledge and methodologies (Hart, 2010; Smith, 2013).

Towards that effort, we provide an ecological-level study that describes the associations among abandoned uranium mines (AUMs), structural inequalities (as measured by social conditions, lack of grocery stores and hospitals), and COVID-19 confirmed cases on the Navajo Nation. Indeed, the media has highlighted the structural inequalities on Diné Bikéyah, however, less attention has been given to the lingering effects of environmental contamination and its role in the spread and severity of COVID-19. Specifically, we assemble unique data from multiple sources to illustrate the links. By doing so, we highlight the ways systemic environmental racism—as measured by the number of AUMs—is a fundamental cause of health inequalities (Phelan & Link, 2015). Its lasting and ongoing health effects have exacerbated the COVID-19 pandemic and highlights the importance of accounting for historical injustices in understanding Indigenous health.

Diné Bikéyah: What's AUMs Got to Do with COVID-19?

Diné Bikéyah occupies portions of northeastern Arizona, southeastern Utah, and northwestern New Mexico; it is the largest Indigenous Tribal lands in the United States. It is a home to 173,667 (52.3%) Navajo people residing on Diné Bikéyah as well as 158,462 (47.7%) Navajo people residing on surrounding border towns and metropolitan areas like Phoenix and Albuquerque as of 2010 (Navajo Division of Health, 2013).

Although Diné Bikéyah is an important place for the sovereign Navajo Nation, it is also a site where physical and environmental manifestations of historical and ongoing systematic racism have been taking place. Towards the end of World War 1, the largest uranium mining effort began on the Four Corners region (northeastern Arizona, southwest Colorado, northwestern New Mexico, and southern Utah); and mining accelerated from the 1940s through the 1960s (Voyles, 2015). It is estimated that there are over 500 AUMs on or near the Navajo Nation (U.S. Environmental Protection Agency, 2018). Beyond the occupational hazards (e.g., accidents at

worksite), deleterious health effects of uranium mining went unrecognized until the early 1960s when the first cases of lung cancer among Navajo miners surfaced, nearly two decades after the mining began (Brugge, Benally, & Yazzie-Lewis, 2007; Brugge & Goble, 2002). There is a wide array of health inequities among Navajo miners including higher rates of toxin exposure such as Radon (Gilliland, Hunt, Archer, & Saccomanno, 2000), lung cancer (Gottlieb & Husen, 1982), and elevated mortality ratios due to lung cancer, tuberculosis, pneumoconiosis and other respiratory diseases (Roscoe, Deddens, Salvan, & Schnorr, 1995). It took more than two decades of community activism and scientific research collaboration before the Radiation Exposure Compensation Act was passed in 1990 after the first legislative bill unsuccessfully filed in 1973 (Brugge & Goble, 2002; Panikkar & Brugge, 2007).

Gradually, research began to advocate for a more comprehensive understanding of destructive health effects of uranium mines and ongoing toxicant exposures not only for Navajo miners themselves, but also for their families and communities at large. This is an important extension of much needed investigation of health inequities among Navajo general public because AUMs are associated with elevated arsenic and uranium concentration in unregulated water sources (i.e. wells) on Diné Bikéyah (J. Hoover, Gonzales, Shuey, Barney, & Lewis, 2017) and poisoned land (Pasternak, 2011). Studies have found that residing close to AUMs are associated with various developmental and reproductive physiological damages (Brugge, deLemos, & Oldmixon, 2005; Harmon et al., 2017). For example, a study of 13,329 Navajos born at an Indian Health Service Hospital on the Navajo Nation found that mothers living near the mines were significantly more likely to experience birth defects, stillbirths and other adverse outcomes of pregnancy (Shields, Wiese, Skipper, Charley, & Banally, 1992). Chronic arsenic exposure is associated with adverse health outcomes such as hypertension, cardiovascular disease, and diabetes (J. Hoover et al., 2017; Kirkley et al., 2018; Moon, Guallar, & Navas-Acien, 2012).

AUMs continue to have lasting indirect spillover effects on the health and wellbeing of Navajo people and communities. Due to toxins in water, such as arsenic, AUMs directly impact people's access to safe, running water on Diné Bikéyah. Nearly one in three people on Diné Bikéyah do not have indoor plumbing (Rodriguez-Lonebear, Barceló, Akee, & Carroll, 2020); water security is necessary for health equities in Indigenous communities (Mitchell, 2019). Even discounting Indigenous Peoples' mistrust in the government and health entities from historical systemic racism and exploitations (Belcourt-Dittloff & Stewart, 2000), the Centers for Diseases

Control and Prevention's recommendation of "wash your hands often" becomes challenging without safe running water (Centers for Disease Control Prevention, 2020a). Furthermore, people who have been living near AUMs may have more underlying health conditions that can lead to experiencing more severe illness from COVID-19. Our central question is: *Are the abandoned uranium mines (AUMs) important for understanding the COVID-19 related inequities on the Navajoland?*

Data and Methods

Data come from multiple sources. The COVID-19 data for the Navajo Nation comes from the May 8th, 2020 report of COVID-19 cases by county from the Navajo Department of Health (Navajo Department of Health, 2020). Since then the Navajo Nation has stopped publishing the COVID-19 statistics by county and started to report statistics by the Navajo service areas. Because we assembled the unique data pulling from multiple sources to simultaneously show the pre-existing structural inequalities, the number of AUMs, and COVID-19 cases; we used the county as the common geographic unit. Characteristics of structural inequalities come from the latest available 2014-2018 American Community Survey 5-years estimates.

Information on AUMs come from the Uranium Mines and Mills Location Database from the U.S. Environmental Protection Agency (U.S. Environmental Protection Agency, 2019). There was no list of addresses of mine locations, but only a geographically-referenced shapefile that was based on *Abandoned Uranium Mines Project Arizona, New Mexico, Utah – Navajo Lands Project Atlas, 1994-2000* (U.S. Environmental Protection Agency, 2019). To estimate how many AUMs exist in each county, we reverse-geocoded the locations from the shapefile, then aggregated the number of AUMs by county using R statistical software in a Geographic Information Science (GIS) framework. Lastly, we gathered information on 13 grocery stores and 14 hospitals, geocoded them, then aggregated up to the county.

COVID-19 Cases, Historical Environmental Racism, Structural Inequalities among 11 Counties on the Navajo Nation

While a great deal of media news focused on the effects of COVID-19 on Navajo Nation overall, relatively little attention has been paid to heterogeneous experiences of COVID-19 across place and space on Diné Bikéyah. Table 1 shows the comprehensive overview of COVID-19 cases,

population and housing characteristics by 11 counties on the Navajo Nation. There are substantial variations in COVID-19 cases across counties. As of May 8th, 2020, Navajo County had the highest number of COVID-19 cases with 787 cases. Followed by Apache County (739 cases), Coconino County (609 cases), McKinley County (314 cases), and San Juan County (295 cases). These counties have greater total populations than counties with less COVID-19 cases although they have much lower population density at the same time.

Table 1. A Comprehensive Overview of Population, Housing, and Social Condition Characteristics by 11 Partial Counties on the Navajoland

	Arizona	Total	Navajo County, AZ	Apache County, AZ	Coconino County, AZ	McKinley County, NM	San Juan County, NM	San Juan County, UT	Cibola County, NM	Socorro County, NM	Sandoval County, NM	Bernalillo County, AZ	Rio Arriba County, NM
COVID-19 Cases (5/8)													
Number of Cases			787	739	609	314	295	49	33	26	21	3	0
COVID-19 Cases per 1,000			**33.2**	**13.8**	**25.9**	**10.1**	**11.0**	**7.4**	**16.1**	**24.0**	**8.4**	**1.8**	**0.0**
Interest Variables													
Number of Abandoned Uranium Mines		**367**	**113**	**52**	**95**	**15**	**77**	**10**	**1**	**3**	**0**	**1**	**0**
Number of Grocery Stores		6	1	1	1	2	1	1	0	0	0	0	0
Number of Hospitals		9	2	3	2	2	2	0	0	0	0	0	0
Population Characteristics													
Total Population	6,946,685	172,875	23,695	53,434	23,515	31,205	26,931	6,629	2,049	1,085	2,497	1,700	135
Population Density (Per Sq. Mile)	61.2	7.2	6.0	7.8	4.6	13.2	8.1	3.3	8.5	11.0	18.6	18.3	52.3
% Population (65 and Older)	16.7%	11.7%	12.3%	12.0%	10.9%	10.8%	13.0%	10.3%	11.8%	12.4%	12.5%	8.5%	28.9%
Median Household Income	$56,213	$27,502	$24,121	$25,154	$38,764	$25,744	$32,346	$26,875	$23,259	$13,274	$15,647	$28,897	N/A
% Families below Poverty Level	11.6%	34.9%	40.3%	36.3%	27.5%	36.5%	29.2%	35.9%	36.3%	52.0%	62.6%	38.6%	21.1%
Average Commute to Work (In Min)	25	32	33	29	29	31	35	37	32	47	47	43	23
No Health Insurance Coverage	10.9%	23.8%	16.7%	28.4%	18.7%	23.5%	23.8%	35.1%	12.9%	20.3%	24.4%	19.1%	20.7%
Housing Characteristics													
Housing Units	2,970,935	67,947	10,488	21,955	7,928	11,628	10,645	2,420	904	597	800	537	45
% in Mobile Home	10.5%	21.0%	14.5%	20.3%	26.5%	21.0%	24.0%	25.5%	13.7%	25.6%	23.0%	19.9%	42.2%
House Heating Fuel													
Gas (Utility, Bottled, Tank, or Lp Gas)	35.5%	18.3%	13.7%	14.8%	14.3%	20.1%	31.8%	12.4%	16.7%	19.1%	10.1%	25.6%	31.8%
Electricity	60.5%	12.6%	15.3%	15.5%	14.2%	8.0%	11.2%	5.8%	7.2%	3.0%	2.7%	17.1%	13.6%
% Complete Plumbing Facilities	98.2%	65.9%	63.6%	62.9%	71.3%	64.3%	73.2%	66.8%	66.8%	47.1%	60.0%	73.0%	46.7%
% Complete Kitchen Facilities	99.2%	86.7%	85.8%	86.5%	83.5%	86.0%	91.7%	89.3%	88.5%	93.3%	70.1%	86.6%	100.0%
% No Telephone Service Available	2.5%	14.1%	21.0%	14.6%	6.7%	17.7%	5.6%	28.9%	10.4%	40.8%	16.8%	7.2%	22.7%

<u>Source</u>: Navajo Department of Health (2020); Navajo Lands Project Atlas, 1994-2000 from the Environmental Protection Agency; and 2014-2018 American Community Survey 5-Year Estimates.

Figure 1 shows the spatial variation in COVID-19 and the numbers of mines by county. Our counts of AUMs show that these five counties also have the higher numbers of AUMs with Navajo County with the highest count of nearly 113 AUMs, followed by Coconino County (n=95) and San Juan County of Utah (n=77). This is consistent with early uranium mining during the period 1942 through 1944 in Navajo County and San Juan County of Utah (Chenoweth, 1985). Navajo County contains Kayenta, a city that in addition to heavy uranium mining was also a site of heavy coal mining. Chinle is another heavy uranium mining area that technically falls on Apache County, but most of the mines are located west of Chinle in Navajo County. Uranium was mined in this region between 1954 and 1968 (U.S. Army Corps of Engineers, 2007).

Figure 1. Map of Abandoned Uranium Mines (AUMs), Grocery Stores, Hospitals and COVID-19 Cases by 11 Counties on Navajoland
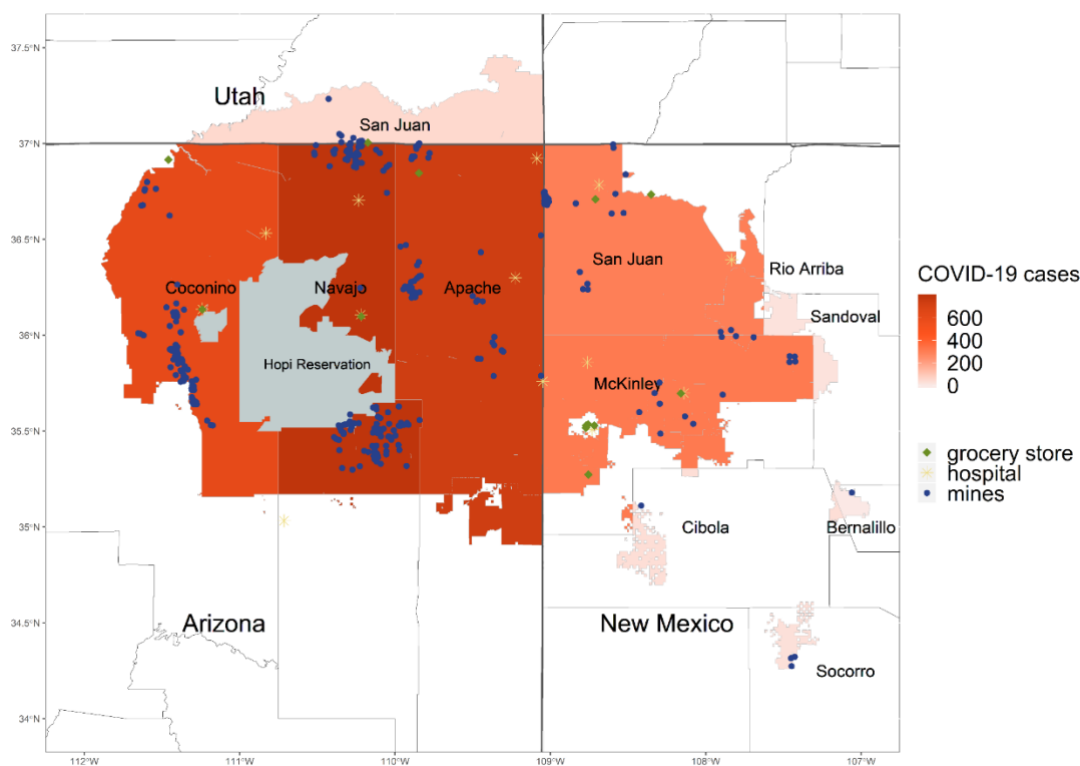
We initially gathered addresses of 13 grocery stores and 14 hospitals on Diné Bikéyah, but through mapping, we learned that only 7 grocery stores and 11 hospitals fall within the boundaries of the Navajo Nation. Unmapped 6 grocery stores are located in border towns (e.g., Gallup); three unmapped hospitals are in Gallup and on the Hopi reservation. Number of grocery stores and

hospitals did not differ much among the top six counties with larger total population, but it is troublesome that five out of 11 counties do not have a grocery store and six out of 11 counties do not have a hospital. Due to the lack of hospitals, many COVID-19 patients have been transferred to Albuquerque or Phoenix (e.g., from Pinon in Navajo County to Phoenix is 270 miles apart; from Window Rock in Apache County to Albuquerque is 165 miles apart) (Kovich, 2020). The housing condition characteristics show that compared to the percentage of households with complete plumbing facilities in Arizona (98.2%), only 65.9% of households on the Navajo Nation have complete plumbing facilities. While only 2.5% of household do not have telephone service available in Arizona, nearly 14.1% of household on the Navajo Nation do not have telephone service available.

Moving Forward

We raised the question whether AUMs are important for understanding related inequities on the Navajo Nation as COVID-19 cases are not equally distributed spatially. We found that the areas with high numbers of AUMs are also areas with high number of COVID-19 cases despite lower population density and population size. For example, while Navajo County and Apache County has similar number of COVID-19 cases (787 and 739, respectively); once we account for the total population sizes of two counties (23,695 and 53,434, respectively), the Navajo County has much higher per 1,000 COVID-19 cases (33.2 versus 13.8). Population and housing characteristics of two counties do not differ much; in fact, Apache County has worse profiles including 28.4% of population without health insurance compared to 16.7% in Navajo County. Put differently, the high COVID-19 rate in Navajo County cannot be explained by population and housing characteristics.

Because a county is a large geographic unit, we were not able to empirically examine the *causal* relationship between number of AUMs and COVID-19 cases. Our exploration suggests that other factors are likely at work – e.g., Navajo County has the highest level of water contamination (Credo, Torkelson, Rock, & Ingram, 2019; J. Hoover et al., 2017). We used Indigenous knowledge and an innovative approach to assemble various existing secondary data to bring the importance of historically-embedded environmental racism on Diné Bikéyah to the center of the public health dialogue during the pandemic. COVID-19 related inequities within and outside of Diné Bikéyah are not only directly related to the poor social conditions stemming from structural inequalities;

but it is important to holistically consider the lasting implications of environmental racism in how health inequities are produced and exacerbated. This holistic approach is guided by Hózhó wisdom of Navajo people that emphasize the importance of interconnectedness and whole-system (Kahn-John & Koithan, 2015; Powell & Curley, 2008). Moving beyond the ecological exploration in this study, any future research investigating how COVID-19 has affected Navajo people must acknowledge Tribal sovereignty and rely on knowledge, methods, and methodologies that are Tribally-driven (Marley, 2019; Walter & Suina, 2019). Future studies should also consider investigating the specific mechanism in which AUMs continue to affect the people, livestock, and lands of Diné Bikéyah as well as ways lack of access to safe clean water is explicitly connected to AUMs.

Environmental racism and the legacy of uranium mining for Indigenous Peoples and communities is not unique to the Navajo Nation; these are also experiences of Indigenous Peoples in Australia, Canada and other places (Graetz, 2014). It is important to recognize the community-based movements and Indigenous resiliency that parallel the legacy of colonization and systemic racism. For Navajo people, community activism has been at the heart of decades of ongoing efforts to amplify Indigenous resiliency and advocacy (Powell & Curley, 2008). We urge that historically-embedded systemic racism must be considered a fundamental component of health inequities for Indigenous Peoples and communities, specifically in the midst of the current COVID-19 pandemic and moving forward.

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COVID-19 and the mass incarceration of Indigenous peoples

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Abstract
Similar to experiences of Indigenous peoples globally, Māori in the nation-state known as New Zealand (NZ) have been subjected to mass incarceration by the colonial state. Places of detention are dangerous environments for the spread of COVID-19. We are deeply concerned about the potential for disproportionate impacts of COVID-19 on Māori and other Indigenous peoples within these environments as many have health conditions and/or multiple comorbidities compounding the risks of severe illness and death from COVID-19. We call for the NZ government to honour te Tiriti o Waitangi obligations and uphold Indigenous rights contained within the United Nations Declaration on the Rights of Indigenous Peoples and other international rights instruments. A whole-of-government commitment to an equitable public health approach is required to: 1) rapidly reduce the numbers of Māori in sites of detention; 2) implement effective, timely, evidenced informed measures to reduce the risk of COVID-19, in line with World Health Organization recommendations; 3) prevent the torture and cruel, inhuman or degrading treatment or punishment of detained Māori during COVID-19; and, 4) eliminate double-celling. Although focused on NZ, the themes we highlight are likely of relevance for Indigenous peoples across the globe in our collective resistance to the COVID-19 pandemic.

In the days that we call the past, and in the times when doubt or trouble confronted the Māori, wise people would seek explanation and say, "There is a story that needs to be told."
—Moana Jackson, He Whaipaanga Hou

If you are talking over someone, you are not having a conversation with them. You are erasing them and creating an environment that will only hold your narrative. But we have been talking about our history since it was created, because to us, we are proof of that history. We are the stories we tell, and we each use what we have been given to add the next chapters.
—*Ruby Solly, The red fleck in her hair*

Similar to the experiences of Indigenous peoples globally, Māori in the nation-state known as New Zealand (NZ) have been subjected by the colonial state to mass incarceration within our own lands (Boyer, Fletcher, Sutherland & Spicer, 2019; Jackson, 2017; McIntosh & Workman, 2017; National Aboriginal and Torres Strait Islander Legal Services, Danila Dilba Health Service, Aboriginal Peak Organisations of the Northern Territory & Lachsz, 2020; Waretini-Karena, 2017). Colonisation includes "a range of practices, predominantly historical: war, displacement, forced labour, removal of children, relocation, ecological destruction, massacres, genocide, slavery, (un)intentional spread of deadly diseases, banning of indigenous languages, regulation of marriage, assimilation and eradication of social, cultural and spiritual practices" (Paradies, 2016, p. 83). Coloniality is considered an ongoing process encompassing "colonial forms of domination after the end of colonial administrations" (Grosfoguel, 2002, p. 205). Clearly, when our ancestors signed te Tiriti o Waitangi (Māori version of the Treaty of Waitangi) in 1840 alongside representatives of the British Crown, they were not signing up to colonisation, coloniality, white supremacism and racism. Nor were they signing up to the ensuing widespread executions (Ministry for Culture and Heritage, 2018) and mass incarceration of their whānau (extended family) and descendants by both the Crown and a third party (self-proclaimed) legitimate authority – the NZ government (Waretini-Karena, 2017).

As McIntosh and Workman (2017) highlight, places of detention within NZ "are largely holders of Māori flesh and blood…Mass incarceration in New Zealand is Māori incarceration" (pp. 726–727). For the year 2017, Māori made up 51 percent of the total prison population compared with only 15 per cent of the 2013 census resident population. Māori made up 56 percent of the women's prisons, 50 percent of the men's prisons, and 79 percent of the youth justice residences (King, 2019).

The current minimum age of 'criminal responsibility' in NZ is 10 years of age (Office of the Children's Commissioner, 2020). The number of Māori children, young people and adults incarcerated by the state has increased over time. Whilst the number of Māori children and young

people in the youth justice residences has grown (from 51 in 2008, to 81 in 2017), the number of non-Māori children and young people has almost halved (from 42 in 2008, to 22 in 2017) (King, 2019). This is despite reports by the NZ Ministry of Justice of falling rates of 'offending' by Māori and/or non-Māori children and young people over a similar timeframe (from 2010 to 2018) (Ministry of Justice, 2019). Thus, there are significant racialised inequities with regard to which children and young people the state makes the choice to incarcerate.

McIntosh (2018) points out such statistics are not news. Rather, "[t]he ubiquity of this knowledge…[means] that it has become normalised and naturalised and regarded as an intractable problem that is not amenable to change" (p. 289). Stanley and Mihaere (2019) observe that mass incarceration of Māori children, young people and adults is "carefully managed" by the state through four mechanisms. These are:

> (i) a perpetual representation of Māori as offenders; (ii) the selective endorsement of rights, such that discriminatory criminal justice operations are normalised; (iii) a pervasive human rights ritualism within UN [United Nations] reporting processes; and, (iv) the legitimisation of imprisonment and inequalities through the international rights system. (Stanley & Mihaere, 2019, p. 1)

The state's engagement with the United Nations (UN) is described by Stanley and Mihaere (2019) as a form of "ritualism" – a "symbiotic performance" where:

> [i]n the first stage, the UN records concerns. In the second, the state acknowledges that Māori over-representation in prisons is 'a significant challenge'…Third, the state promises to act: it has 'set ambitious targets'… Fourth, it heralds progress: the government is proud…Finally, the UN committees take an encouraging tone, noting the 'commendable efforts' being made, but also return to being 'concerned at the…information that Māori remain overrepresented as offenders…and as victims'. (Stanley & Mihaere, 2019, p. 7)

In 2019, and over thirty years following the release of Indigenous leader and scholar Dr Moana Jackson's landmark report on Māori and the justice system (Jackson, 1988), the government-appointed 'Safe and Effective Justice Advisory Group' published a series of recommendations outlining fundamental and transformative changes to legislation, policy and resources (Te Uepū Hāpai I Te Ora: Safe and Effective Justice Advisory Group, 2019). Although the recommendations were accepted by the Minister of Justice (Hon Andrew Little), very little has been progressed since (Walters, 2020). As the media has observed:

> it's been near-radio silence. No major policy announcements; no wholesale adoption of the recommendations born from months of talking, listening, research and shared

expertise. Aotearoa has been here before. Many times. The system hits crisis point; there's a review; recommendations are made; momentum dies away; reports sit gathering dust. (Walters, 2020)

We argue that within the context of a COVID-19 global pandemic, mass incarceration of Māori children, young people, and adults does not afford the government the luxury of privilege of resting upon its laurels for yet another thirty years.

The Serious Risks to Māori Children, Young People and Adults Incarcerated by the State

The disproportionate impacts that a COVID-19 outbreak will have on Māori children, young people and adults incarcerated by the state is of immense concern, given increased likelihood of the presence of underlying health conditions and/or multiple comorbidities compounding risks of serious illness and death from COVID-19 (Jones, King, Baker & Ingham, 2020; King, 2019; McLeod, Gurney, Harris, Cormack & King, 2020; Ministry of Health, 2006). Overseas, stark, inequitable impacts of the pandemic on Indigenous communities continue to be reported (Crooks, Casey & Ward, 2020; Indian Health Services – Department of Health and Human Services, 2020; Kaholokula, Samoa, Miyamoto, Palafox & Daniels, 2020; Markham, Smith & Morphy, 2020; Meneses-Navarro, Freyermuth-Enciso, Pelcastre-Villafuerte, Campos-Navarro, Meléndez-Navarrob & Gómez-Flores-Ramos, 2020; Navajo Department of Health, 2020; Power, Wilson, Best, Brockie, Bourque Bearskin, Millender et al., 2020; United Nations Department of Economic and Social Affairs, 2020). In addition, international experience makes it clear that places of detention are particularly dangerous environments for the rapid spread of the virus to incarcerated children, young people and adults, whānau, detention staff, and communities (Alohan & Calvo, 2020; de Carvalho, Santos & dos Santos, 2020; Franco-Paredes, Jankousky, Schultz, Bernfeld, Cullen, Quan et al., 2020; Henry, 2020; Kinner, Young, Snow, Southalan, Lopez-Acuña, Ferreira-Borges et al., 2020; Lathouris, 2020; Nelson & Kaminsky, 2020; Rubin, 2020).

Unacceptable conditions including unsanitary and overcrowded environments, inadequate ventilation, poor access to healthcare and disability services, and the fact that places of detention are not closed systems (with movements of people in, around, and between places of detention), in addition to a range of other custodial requirements preventing measures to control the spread of infection, create even greater safety risks for all during a pandemic (Alohan & Calvo, 2020; Burki,

2020; de Carvalho et al., 2020; Henry, 2020; Montoya-Barthelemy, Lee, Cundiff & Smith, 2020; Rubin, 2020; Sapers, 2020; Simpson & Butler, 2020; United Nations Human Rights – Office of the High Commissioner, 2020; World Health Organization, 2020). Although there has not yet been an outbreak of the virus in the NZ youth justice residences and prisons at the time of writing, outbreaks in other infectious diseases linked to prison have been previously documented (De Zoysa, Shoemack, Vaughan & Vaughan, 2001).

Places of detention are thus critical to a public health response to the COVID-19 pandemic that is equitable. As Henry (2020) points out, "equity cannot be achieved until incarcerated people have equal access to quality prevention and treatment resources for COVID-19" (p. 537). While these conditions outline greater increased risks during a pandemic, they are unacceptable at all times.

Decarceration and Abolition During the COVID-19 Pandemic

Carceral polices enabling mass incarceration have been described as a "vector of COVID-19 transmission" (Henry, 2020, p. 536). In response to this vector risk, there have been multiple calls internationally for decarceration extending to abolition (Akiyama, Spaulding, & Rich, 2020; American Public Health Association, 2020; Franco-Paredes et al., 2020; Freshour & Williams, 2020; Inter-Agency Standing Committee – Office of the High Commissioner for Human Rights & World Health Organization, 2020; Lyons, 2020; Nelson & Kaminsky, 2020; Nowotny, Bailey, Omori, & Brinkley-Rubinstein, 2020; Oladeru, Tran, Al-Rousan, Williams, & Zaller, 2020; Rubin, 2020; Sapers, 2020; Simpson & Butler, 2020; Sivashanker, Rossman, Resnick, & Berwick, 2020; United Nations Human Rights – Office of the High Commissioner, 2020). Minkler, Griffin, and Wakimoto (2020) describe how "…decarceration policy became essential to the public health response to COVID-19" (p. 517) in the United States of America (USA).

> Conditions that were accepted, or at least expected, in prisons and jails could no longer be viewed as simply the way things are. Grossly overcrowded cells, lack of proper sanitation, and many more factors also had to be recognized as a major risk to public health. That risk, no longer solely for incarcerated persons and prison staff, now demanded urgent attention to reduce the role of these facilities as major 'hot spots' in the community spread of the coronavirus. (Minkler, Griffin & Wakimoto, 2020, p. 517)

The American Public Health Association (APHA), for instance, has recommended "moving towards the abolition of carceral systems and building in their stead just and equitable structures

that advance the public's health". Amongst other recommendations, the APHA's policy statement advises "urgently reducing the incarcerated population [and] committing to non-carceral measures for accountability, safety, and well-being" (American Public Health Association, 2020).

In Australia, the New South Wales government passed emergency legislation with provisions for releasing people from prison due to concerns about prisons being "ripe for the rapid spread of disease" (Anthony, 2020). The UN has released specific guidance and advice to member states, recommending decarceration of "at-risk groups of prisoners, including persons with disabilities, applying early release and probation or shortening or commuting sentences and reducing the use of pre-trial detention, and promptly ensure provision of support in the community" (p. 8). Examples of decarceration have been reported including the United Kingdom, Northern Ireland, several states within the USA, Iran, Turkey, Indonesia, Colombia, Argentina, and Brazil (United Nations Human Rights – Office of the High Commissioner, 2020). On the basis of this UN guidance, Simpson and Butler (2020) recommend:

> we should be releasing a sizeable proportion of prisoners based on their risk to the community and vulnerability to covid-19 (for example through older age, having chronic health conditions, and intravenous drug use). Similarly, the poor health outcomes of indigenous peoples in countries such as the US, Australia, Canada, and New Zealand make these populations an obvious priority. (p. 1)

Sivashanker et al., (2020) have critiqued the lack of urgency elsewhere with regard to recognition of decarceration as a critical public health response, stating, "instead of mobilising around sensible public health strategies, like decarceration, to prevent the spread of covid-19, we remain preoccupied with treating patients after they are already sick" (p. 1). Others have argued that failing to decarcerate Indigenous peoples "through early and temporary releases… undermines the efforts of the Aboriginal community-controlled health sector [that] has reacted swiftly and effectively to the COVID-19 outbreak" (National Aboriginal and Torres Strait Islander Legal Services et al., 2020, p. 7).

A Call to Action

There is a very short window within which to prevent an outbreak and protect Māori children, young people and adults incarcerated by the state, along with their whānau, detention staff, and communities. We have serious concerns that the fragmented approach and ad hoc actions taken to date by government agencies are far from sufficient. Government statements regarding

the lack of action on progressing required changes in carceral policies (Te Uepū Hāpai I Te Ora: Safe and Effective Justice Advisory Group, 2019) reinforce our reasons for being deeply concerned. For instance, "[w]hen asked why justice policy hasn't been on the agenda in recent months, Kelvin Davis [Minister of Corrections] says in a Covid-19 world they have to prioritise the health and economic responses. 'And this is how it should be,' he says" (Walters, 2020), demonstrating a critical lack of understanding that current carceral policies are the cause of significant risks to Māori children, young people and adults incarcerated, along with their whānau, detention staff, and the wider public in a COVID-19 world. The imposition of a custodial sentence for a mother of five who, subsequent to having received negative COVID-19 results for her family, and, following being declined compassionate exemption by the NZ Ministry of Health, fled quarantine so that her children could be with the body of their deceased father (Hayden, 2020), reiterates how out of touch with the reality of a COVID-19 world the NZ justice system is. Not only did the judge's decision demonstrate an appalling lack of compassion, regardless of the circumstances, punitive, carceral approaches to public health that result in further incarceration, potentially increase public health risks at a time when we should be urgently reducing the numbers of people incarcerated.

Thus, we call for the NZ government to honour its te Tiriti o Waitangi obligations, and, rather than continuing on with a "ritualism" of "symbiotic performance" (Stanley & Mihaere, 2019), instead make a choice to respect, protect and fulfil Indigenous rights recognised within the UN Declaration on the Rights of Indigenous Peoples (United Nations General Assembly, 2007) and other international human rights instruments (United Nations General Assembly, 1948, 1966a, 1966b, 1966c, 1979, 1984 1989, 2006). This means the government works with Māori within a Tiriti-based relationship to protect the health and well-being of Māori children, young people and adults who are incarcerated, their whānau and communities. Achieving this requires a whole-of-government commitment to an equitable public health approach that:

1) Rapidly reduces the number of Māori children, young people and adults in sites of detention both through curtailing admissions to detention, and early release of people from detention (Inter-Agency Standing Committee – Office of the High Commissioner for Human Rights & World Health Organization, 2020; Simpson & Butler, 2020; Subcommittee on Prevention of Torture, 2020; United Nations Human Rights – Office of the High Commissioner, 2020). In decarcerating, it is important to ensure that decisions

take into account the health risk for individuals, their whānau and communities, and, release is accompanied by adequate planning. This must involve facilitated access to safe accommodation, income support, and comprehensive management of health and disability issues that ensures continuity of care with referral to appropriate community services, so that children, young people, adults and their whānau and communities are prepared and safe (Inter-Agency Standing Committee – Office of the High Commissioner for Human Rights & World Health Organization, 2020; Johnson & Beletsky, 2020; Montoya-Barthelemy et al., 2020; Mukherjee & El-Bassel, 2020). It must also include inter-departmental work (particularly from the NZ Ministry of Justice and Department of Corrections) to ensure people are not unduly (in their path to freedom) delayed due to COVID-19 restrictions on courts, court assigned programmes and community detention, amongst others.

2) Implements effective, timely, research-informed measures to reduce the risk of COVID-19 in places of detention, in accordance with the World Health Organization recommendations (World Health Organization, 2020), whilst maintaining comprehensive arrangements for access to non-COVID-19 related healthcare and disability services, and support programmes. This should include reviewing the current operating procedure/guidelines used by the NZ Department of Corrections to ensure they align with the aforementioned guidance.

3) Prevents the torture and cruel, inhuman or degrading treatment or punishment of Māori children, young people and adults incarcerated during COVID-19 (Inter-Agency Standing Committee – Office of the High Commissioner for Human Rights & World Health Organization, 2020; Subcommittee on Prevention of Torture, 2020; United Nations General Assembly, 1984 ; United Nations Human Rights Committee, 2020; United Nations Office on Drugs and Crime, 2015). Public health preventative measures and/or responses to any potential or confirmed cases of COVID-19 must be managed in ways that do not rely on solitary confinement and excessive lockdown practices. Specifically, the use of practices where people in NZ have been locked in their cells for up to 23 hours a day and all external visits (whānau and advocacy) are suspended, must be immediately discontinued (Chief Ombudsman, 2020; Cloud, Ahalt, Augustine, Sears & Williams, 2020; Gagnon, 2020; Montoya-Barthelemy et al., 2020).

4) Eliminates the risks to health and well-being caused by the practice of double-celling. Places of detention should immediately move to single-cell accommodation with in-cell sanitation (Gulati, Dunne & Kelly, 2020).

Conclusion

> The dream riders were summoned by a nightmare, made palpable by the terrifying numbers of prisoners and prisons produced during the past generation, while we were all, presumably, awake. Just as real was the growing grassroots activism against the expanded use of criminalization and cages as catchall solutions to social problems. (Gilmore, 2007, p. 2)

The crisis caused by the COVID-19 pandemic "has recalibrated the realm of political possibilities" (Lyons, 2020, p. 2). The NZ government can make a choice to implement transformative actions that result in a justice system supporting a safe and healthy society. However, intentionally choosing not to decarcerate "is a policy decision that actively facilitates high rates of new COVID-19 infections, and ultimately deaths…By choosing confinement, policy makers are exposing incarcerated people to much higher odds of COVID-19 infection" (Henry, 2020, p. 537). They are also exposing those incarcerated to the negative health impacts that potentially result from practices used in detention during the pandemic, including from the suspension of access to programmes, the denial of access to visitors, and the use of solitary confinement. Governments around the world must respond to the public health evidence and, through equitable power-sharing with Indigenous peoples, act urgently to address the risks that mass incarceration of Indigenous children, young people and adults poses to their health and well-being. Choosing equity for all contributes to fulfilling the ethical, moral and legal imperatives we all have to uphold the individual and collective human rights of Indigenous peoples across the world.

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Indigenous Relationality is the Heartbeat of Indigenous Existence during COVID-19

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Abstract
In response to the global COVID-19 pandemic, this essay offers Indigenous knowledge systems that highlight strategies for survival. Indigenous peoples understand that human lives are interdependent with and contingent on living in ethical relations with other people, with our ancestors, with plants and animals, and with the natural world overall. Indigenous systems of relationality are the heartbeat of Indigenous existence. They help to illuminate approaches to physical, intellectual, emotional, and spiritual health. Using the Medicine Wheel framework as an analytical tool, we indicate how Indigenous people can survive and thrive during these times. To create a just democracy and ensure our ecological and sociological future, we must consider the multidimensional needs of all beings. Although relational responsibilities are at the heart of many Indigenous worldviews, they extend to all of us. Responsible relations with the natural world sustain human livelihood everywhere, connecting us all in a vast web of life.

My Ancestors…accumulated networks of meaningful, deep, fluid, intimate collective and individual relationships of trust. In times of hardship, we did not rely to any great degree on accumulated capital or individualism but on the strength of relationships with others.
(Simpson, 2017, p. 77)

Around the world, people are experiencing a threat to their individual and collective livelihoods on account of the novel coronavirus, which can lead to COVID-19. The ongoing viral outbreak is now a global pandemic. In response, many countries have implemented public health measures to prevent the spread of COVID-19. Stay-at-home and physical distancing protocols

have resulted in the widespread closure of schools, the shuttering of workplaces, and the cancellation of family and community events. For many Indigenous peoples, physical distancing has prohibited traditional celebrations and ceremonies to mark seasonal changes and transitions in life stage, such as births or funerals. This is particularly distressing, because Indigenous identities are centered on the fulfillment of interdependent roles and relational responsibilities within social networks, as in local trade systems, cultural ceremonies, and hands-on social support (such as caring for elders).

The principal Indigenous groups in North America are American Indians, Alaska Natives, Canadian First Nations, Inuit, and Métis, and Pacific Islanders, including Native Hawaiians. In the US, American Indians and Alaska Natives (AI/ANs) have been disproportionately infected by COVID-19 and are dying at higher rates than non-Indigenous peoples, particularly given pre-existing health, social, and economic inequalities (Artiga & Orgera, 2020). Although American Indians and Alaska Native People make up 11 percent of the Arizona population, they make up 18 percent of COVID-19 deaths and 11 percent of cases. In another example, AI/ANs make up 9 percent of the New Mexico population and approximate 57% of COVID-19 cases (Artiga & Orgera, 2020).

Yet despite the unique hazards of the current pandemic, challenges to individual and collective survival are nothing new for Indigenous peoples. Our ancestors survived many catastrophic events, including colonization, loss of land, and successive epidemics of novel diseases such as smallpox, tuberculosis, and influenza, to name a few. Past generations have passed along their strength and resilience to help us respond to widespread change. Embedded within Indigenous knowledge systems, therefore, are the solutions we need to ease the physical, intellectual, mental, and spiritual burden of physical distancing protocols on Indigenous peoples. The goal of this article is simply to draw on Indigenous systems of relationality to illuminate pathways to Indigenous health and wellbeing in a time of crisis and uncertainty.

Theoretical Framework

Indigenous knowledge systems and their underlying ethical precepts are designed to promote and generate life: not just human life, but all life. Indigenous worldviews are shaped by a deep sense that all living things are interconnected (Cajete, 2000; Fernandez et al., 2020). These interconnections extend across time and space, subsuming past, present, and future generations,

and even crossing the boundaries between species. Thus, all ethical commitments are based on principles of "reciprocity, respect, noninterference, self-determination, and freedom" (Simpson, 2017, p. 8). Moreover, in Indigenous cultures, all relationships center on the land: "identity, the connection to our ancestors, the home of our nonhuman kinfolk, our pharmacy, our library, the source of all that sustained us. Our lands were where our responsibility to the world was enacted" (Kimmerer, 2013, p. 17). Any threat to Indigenous relationality makes it difficult to form and sustain strong communal relations. Thus, a disruption in connectedness seriously challenges our continuing survival in the world.

One of the greatest menaces to Indigenous relationality has been, and continues to be, settler colonialism. This refers to the forcible acquisition of Indigenous land in the context of colonial imperialism, a process that has violently ruptured Indigenous relationships with their environment and each other (Tuck & Yang, 2012; Whyte, 2018). Research among the Cowichan Tribes on Vancouver Island – a Canadian First Nation with cultural and linguistic ties to other Coast Salish peoples of the Pacific Northwest of North America – foregrounds the fracture in Indigenous relationality that resulted from settler colonialism as the underlying cause of another ongoing pandemic: Indigenous suicide (Elliott-Groves, 2018). Cowichan members described the unequal distribution of power in the areas of education, politics, economics, and food systems, as well as in the ownership and management of traditional lands, as key factors in this tragic phenomenon (Elliott-Groves, 2018).

The systems of communal relationships that ensure individual and collective livelihoods are called collective capacities (Whyte, 2018). Settler colonialism continues to infringe on Indigenous collective capacities, thus threatening Indigenous survival. To respond to catastrophic change, whether caused by colonization or a novel contagion, Indigenous communities must exercise self-determination (Whyte, 2018). Taking control of our own future will facilitate our communities' adaptive capacity, which is essential to secure our livelihoods.

The Medicine Wheel conceptualizes an Indigenous philosophy of using the circle, a symbol of sacredness, showing interconnectedness between human development and our adaptations to the natural world. A custom for generations amongst various Indigenous peoples, the Native Nations of the Plains peoples' Medicine Wheel framework identified by second Hardison-Stevens (2014) draws on Indigenous knowledge systems. We have visited the traditional Medicine Wheel

as the guiding framework for our discussion of Indigenous health and healing practices during COVID-19.

Interpretations of the Medicine Wheel's values vary across Indigenous communities. However, it is most often depicted as a circle, both to highlight the cyclical nature of human existence and to conceptualize the balance of healing and wellbeing. We have created a modified version of the Medicine Wheel that depicts four interconnected quadrants representing balance across the physical, intellectual, emotional, and spiritual health of all living beings (Figure 1) where all things live in a harmony, righteous relationship, appropriate relations, and healthful relations. In each area, we have represented the relational responsibility of living in right relations with land = physicality, others = intellect, self = emotions, and spirit = creation. The modified Medicine Wheel begins with land and moves counterclockwise with intention, depicting times for reflection, transformation, replenishing spirits, and renewal. With such an orientation in mind, we can use this tool to integrate elements of action, relationship, knowledge, and vision (Styres, 2017) in relation with current events.

Figure 1

Medicine Wheel (Modified): Indigenous Relationality Philosophy
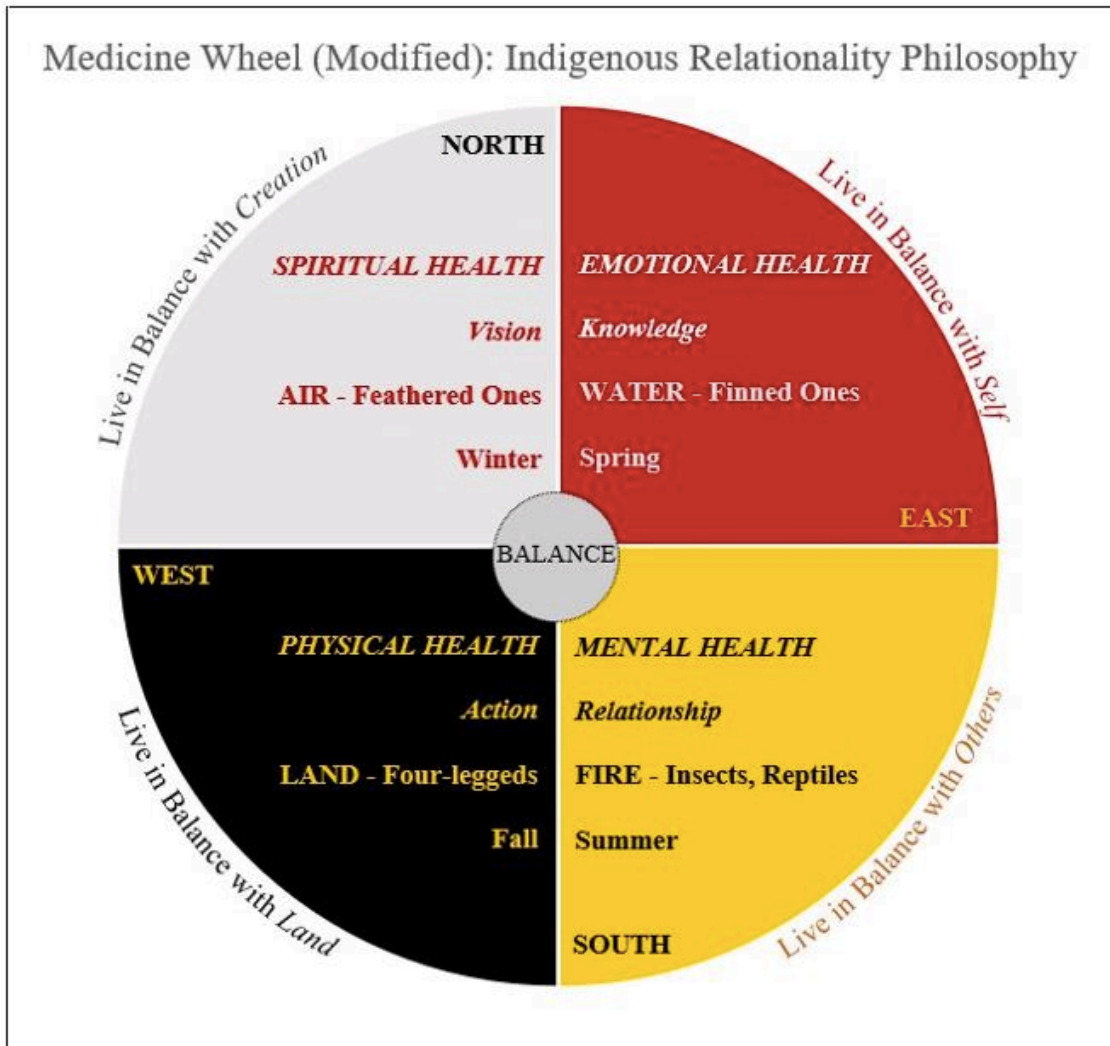
Note: This modified medicine wheel depicts a balance across physical, intellectual, emotional, and spiritual health of all living beings.

Brief Discussion

For many Indigenous peoples in the US, illness or disease is often considered a result of imbalance within our relationships across both physical and spiritual realms. Although the coronavirus epidemic is caused by a virus, an imbalance of power within systems of relationships has resulted in widespread health disparities for tribal and other communities of color. Indigenous health and wellbeing are nurtured when traditional systems of relationality remain intact. Strong support networks strengthen our sense of connectedness and purpose and contribute to the overall

health of our people and communities. To explore a holistic interpretation of health during COVID-19, the authors asked members on the Elliott-Groves' Facebook page to consider how they are strengthening and maintaining their physical, emotional, intellectual, and spiritual health during a time of physical distancing; their responses are recorded on Table 1. Respondents included tribal community members, academic researchers, students, and professional caregivers; all respondents identified as AI/AN from the US or First Nations' from Canada.

Physical health: Living in balance with the land

As the heartbeat of Indigenous existence is relational, the sustenance of all life is predicated on human relationships with the land. Physical health is thus contingent on the healthy coexistence of human beings and nature, which is expressed in terms the elements of fire, water, air, and land (see Figure 1). In this symbiotic relationship, natural elements play a symbolic as well as a physical role in health and healing (Cajete, 1994). In fact, many Indigenous peoples understand human health as a function of the health of Mother Earth. After all, the land gives us food and nourishment, fibers for clothing, and materials for artistic expression and making tools, all things that facilitate human livelihoods (Cajete, 1994).

To maintain individual physical health, members of our social network have shared that they are walking, hiking, and spending time outdoors. Many people have lost their jobs, which has resulted in a concern for food production; food insecurity has inspired Indigenous and non-Indigenous peoples alike to invest in respectful approaches to food sovereignty and sustainability. For example, as part of their project to address food insecurity, the Flower Hill Institute, a Native-owned, community-directed non-profit organization offered packets of food seeds to community members in the Pacific Northwest to grow their own food, while others are learning how to harvest, can, hunt, or gather food and medicines. Some adaptations that people have made to ensure public safety include reorganizing classroom instruction to offer hybrid and/or online instruction; hosting virtual meetings; or visiting through doorways, windows, and in backyards (see Table 1). During a time of physical distancing, the land remains committed to facilitating human existence, including our thinking, acting, and knowing through interdependent daily interactions. The land recognizes the role she plays in Indigenous intergenerational healing processes, and she remains willing to facilitate human livelihoods.

Table 1

Suggestions for Cultivating Physical, Intellectual, Emotional, and Spiritual Health during COVID-19 (and beyond)

Area of health	Suggestions for everyday practice
Physical	Walking, running, hiking, swimming, lifting weights/bodyweight exercises
	Strengthening connection to mountains, land, water, plants, and animals
	Hunting/gathering/growing/harvesting/preserving foods and medicines
	Eating healthy, cooking for others, taking vitamin supplements, sleeping well
	Knitting, crocheting, weaving, or other making activities, such as masks or care packages for others
	Visiting or connecting outdoors
	Working from home, spending more time with family
Intellectual	Increasing knowledge of health and disease to inform decisions about virus
	Reading or listening to books
	Participating in social or civic life
	Engaging in professional development or acquiring new skills virtually
	Learning ancestral language or Indigenous survival techniques virtually
	Writing poetry or a journal, playing board games, completing puzzles
Emotional	Visiting virtually (e.g., Zoom, video conferencing, social media)
	Grieving (crying, laughing, praying, acknowledging loss), holding space for others
	Working with mental health counselors, continuing your own healing journey
	Holding self with compassion (e.g., lowering standards, delegating tasks, asking for help when you need it)
	Adhering to a schedule
	Singing, dancing, drumming, virtual storytelling
	Writing letters or emails to loved ones or writing for yourself
	Setting boundaries with self and others, taking a break when you need it (especially from news or social media)
Spiritual	Praying (individually or virtually), smudging, meditating, deep breathing,
	Cultivating gratitude, forest bathing
	Learning how to process or weave nettle or cedar
	Reconnecting self and children to land, plants and animals, and ancestral relations
	Honoring loved ones who have crossed over
	Retracing the steps of our ancestors
	Reclaiming Indigeneity
	Making financial or gift donations to worthy causes, activism

Emotional health: Living in balance with self

Emotional health hinges on a sense of connectedness and belonging (Elliott-Groves, 2018), which is gravely challenged during this time of physical distancing. Some members of our network have found emotional restoration through the connections provided by social media. One way of doing so is learning and listening to traditional stories shared virtually. For example, renowned storytellers Fern Naomi Renville (Sisseton Wahpeton Oyate) and Roger Fernandes (Lower Elwha Klallam) have been sharing traditional stories from many nations on Facebook Live daily. Other members of our social network have found emotional sustenance through more traditional channels, in some cases by giving to and caring for others (e.g., writing letters or leaving care packages on doorsteps) (see Table 1). One female respondent wrote, "For us, it is a mix of calling friends more than ever before and finding grounding feeding 150-200 elders every day" (personal communication). Her family has found healing by reconnecting with the land through walking and driving, observing seasonal change and weather patterns, and "watching the moon rise, making nettle rope and story-listening with [elders]" (personal communication).

Intellectual health: Living in balance with others

Physical distancing has led to the closure of schools, community centers, and other formal and informal learning spaces. Families have been tasked with homeschooling their children, often without appropriate resources to facilitate their success. To illuminate Indigenous teaching and learning strategies that may mitigate the stress of physical distancing, we draw on Megan Bang's recent discussions of intellectual health (Bang, 2020). For Indigenous individuals and communities, intellectual health refers to the degree to which individuals and communities can draw on specifically Indigenous intellectual traditions. A large part of the work our ancestors did to ensure our existence was to live intentionally and creatively every single day in ways that reflected a relational and reciprocal understanding of the world (Bang, 2020).

Some members from our own social networks report that they are using this time to reconnect with their ancestral languages and their traditional healing practices. Others are using video technology to learn survival skills, such as trapping animals, building homes, making tools, and harvesting plant medicines. On a broader scale, leaders and policy makers are making knowledge accessible on the Internet through free webinars and increased access to scientific publications. In a contemporary context, intellectual health is about the ability to draw on our own

ancestral traditions, coupled with an ability to consider, complement, and respond to alien knowledge systems (e.g., western knowledge). To that end, we recommend designing teaching and learning practices in ways that reflect the axiological commitments of the community. For many Indigenous populations, this may mean engaging in practices that emerge from an understanding that our education emerges from the land, and ought to be intergenerational, collective, and centered on Indigenous relationality.

Spiritual health: Living in balance with creation

One of our responsibilities as Indigenous people is to share what we know within a network of relationships. In Coast Salish tradition, for example, a large part of sharing knowledge occurs through the process of witnessing. Witnesses are called to be the keepers of tribal history and are asked to share what they have observed. However, some knowledge is considered to be a part of an intimate, spiritual relationship with creation, and thus ought to be protected, or shared only with great care and intention.

Indigenous concepts of spirit and spirituality have been described as an energy within and beyond the physical realm that connects us to something greater than ourselves (Cajete, 2000; Stonechild, 2016). When Indigenous members of our social network were informally asked what has helped them cope with physical distancing protocols, many examples of spiritual strength came up. For example, as prayer offerings for others, videos began to surface on social media of women and girls jingle dress dancing. An Ojibwe story tells how the rhythmic sound of bells was a healing mechanism during the 1918 influenza pandemic (Child, 2020). These practices are spiritual because the vibrational sounds and healing energy transmitted might not be logically understood or explained but can be spiritually known and felt.

As people are staying home in order to protect others from the threat of COVID-19, we have begun to observe some unanticipated benefits of physical distancing. From a global perspective, Earth continues to be our educator as natural environments heal themselves. In some cases, animals are returning to their traditional habitats; in other cases, smog and pollution have declined because people are driving less, and certain industrial processes have paused. Many people have embraced the concept of working from home. Although many parents struggle with the competing narratives of productivity and childcare, they are grateful for the time they get to

spend with their children. These hopeful silver linings remind us that we need to continue to strive for reciprocal, consensual, and respectful relationships with all other living beings.

Conclusion

The purpose of this essay was to draw on Indigenous knowledge systems to illuminate Indigenous approaches to physical, intellectual, emotional, and spiritual health during the current global pandemic. By providing examples of everyday survival, we provide actionable insights; by centering our discussion on Indigenous relationality, we hope to re-narrate and realign human priorities with Indigenous understandings of the world. By engaging Indigenous knowledge systems, we share information that has been transmitted across generations with hopes of expanding our collective possible futures.

Settler colonial processes disrupt necessary life-sustaining systems of relationships. Such a disruption makes it very difficult for Indigenous nations to make decisions for themselves, their children, or their futures. Without self-determination, Indigenous nations are limited in their ability to adapt to large-scale or catastrophic change. Without this adaptive capacity, Indigenous possible futures are threatened, and in some cases foreclosed. Indigenous knowledge systems push back against settler colonialism by re-creating beings guided and shaped by ethical commitments to live lives that promote the rebirth of life itself.

Indigenous education emerges from the land. Thus, Indigenous identity – what it means to be a person – is rooted in specific places and is informed by cultural systems of relationality. What would happen if we built or rebuilt our learning infrastructure based on our own knowledge systems? What if Indigenous children were raised in a community with elders and others who can teach them important cultural practices, ethical and moral responsibilities, and the language needed to put it all together? What if their entire sense of self was cultivated by family and social relationships? What if you could self-determine how you, your children, and your community responded to large-scale change? What if you could protect your land, and thus your future? As Indigenous people, our traditional knowledge systems have been put in place across generations to buffer us against challenges ranging from military invasions to novel contagions. What would it look like if we taught our children *with* and *through* a thriving Indigenous culture, rather than just *about* our culture as it once was? To regenerate our Indigenous political and educational structures, we collectively need to reimagine what it looks like to rehabilitate human relationships

with the natural world. We need to further consider what it means to dismantle the systems of power that continue to oppress Indigenous and other persons of color. By intentionally choosing Indigenous teaching and learning practices that have been passed on for generations, we hope to provide our children and communities with the tools necessary to respond to widespread challenges, whether a global pandemic or the malignant residue of colonization.

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Kōkua Kaiāulu: Keeping the Native Hawaiian Community in Waimānalo Fed

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Abstract
Recent data suggest that similar to other minority communities in the U.S., Native Hawaiians are more likely to contract and suffer from COVID-19, thereby exacerbating existing health and social disparities. Additionally, the COVID-19 pandemic has led to significant disruptions in employment and economic insecurity, both of which are intertwined with food insecurity. This paper describes the efforts of Ke Kula Nui O Waimānalo, a grassroots Native Hawaiian organization, to meet both the immediate and long-term needs related to food insecurity in the Waimānalo community. Numerous organizations from multiple sectors collaborated to provide over 24,000 prepared healthy meals and 3,550 fresh produce boxes as well as seeds and plant starters to over 6,500 Waimānalo families and community members who are vulnerable to food insecurity. In addition to meeting the immediate needs of the community, community resilience is being built by creating

permanent areas of food sources in the community to teach community members a variety of ways of growing their own food. Using a land-based and community-driven approach, Native Hawaiian worldview of health and healing need to be the foundation of promoting health and resilience in Native Hawaiian communities.

Introduction: Native Hawaiian History, Communities, and Practices

Native Hawaiians are the Indigenous people whose ancestors settled in the islands of Hawai'i over 1,600 years ago. Living in one of the most remote island chains in the word, these ancestors developed sophisticated food cultivation systems that sustained a thriving and robust population for centuries (Kame'eleihiwa, 2016). These food systems included loko i'a, which are fishponds used to grow and cultivate fish, and lo'i, which are irrigated terraces for planting kalo (taro), a spiritually significant plant and traditional staple of the Hawaiian diet. These systems were designed through a land division system known as an ahupua'a. Each ahupua'a, which is a strip of land that extends from the mountain to the sea, was stewarded by the konohiki appointed by the ali'i (chief) and other community members living in the community. Various community members and practitioners collectively played a role in ensuring animals and plants were cultivated in a manner that was sustainable and did not deplete the natural resources. For Native Hawaiians, this deep and intimate dependence on the land was built upon the belief that the health of the 'āina (land) was imperative to the health of the people. Thus, the value of mālama 'āina, or land stewardship, was ingrained in every part of their living (Kame'eleihiwa, 1992).

This intimate, spiritual, and practical connection to the land was disrupted at the start of western colonization in 1778 with the arrival of Captain James Cook. As western influences changed the societal structures of the islands, the illegal overthrow of the Hawaiian Kingdom in 1893 and the U.S.'s subsequent and ongoing illegal occupation worked to marginalize Hawaiians from positions of power. Driven by missionaries and American political figures with imperialist ideals, traditional and cultural practices of Native Hawaiians, such as the Hawaiian language, lā'au lapa'au (traditional medicine), surfing, hula, and many others, were banned (Marshall, 2006; Pukuiet al., 1974). Land was privatized, which was a foreign concept counter to the Native Hawaiian belief that land was a living entity, not a property to be owned (Kame'eleihiwa, 1992). Although the ali'i at the time generally supported land privatization with the intention to encourage Native Hawaiians to claim their traditional family lands, land privatization largely benefited foreigners who acquired large tracts of land. Much of the land was used to develop a profitable

plantation system (ie. sugar, pineapple, etc.) that uprooted the traditional ahupuaʻa system and severely limited Hawaiians from accessing traditional food sources (Kameʻeleihiwa, 2016). In addition, this upheaval disrupted their spiritual relationship with the ʻāina and the practice of mālama ʻāina. In addition, infectious diseases, which Native Hawaiians had no immunity against, decimated the population, leading to a 90% population decline within a century (Blaisdell, 2001).

Native Hawaiian Health and Conditions Today

Today, Hawaiʻi is often portrayed as the healthiest state in the U.S. However, Native Hawaiians disproportionately suffer from health disparities and food insecurity in their homeland (Kaholokula et al., 2009). As highly processed and high-fat western diets quickly replaced the high-protein and nutritious diets of pre-western contact Native Hawaiians, Native Hawaiians of the present day have one of the highest rates of cardiovascular diseases among all major ethnic groups (Look et al., 2013; Mau et al., 2009). Additionally, Native Hawaiians are 68% more likely to die from heart disease and have a 20% higher incident of strokes compared to the State average (Johnson et al., 2004). Native Hawaiians also suffer from mental health conditions, such as depression, anxiety, and suicidal behaviors (Hishinuma et al., 2017) and tend to live in areas with high levels of poverty with limited healthy food options and high concentrations of fast food (Lee et al., 2012; Mau et al., 2008). In addition, Hawaiʻi's residents face the highest food costs in the U.S. as 85-90% of the food supply is imported (Office of Planning Department of Business Economic Development & Tourism, 2012).

Recent data suggest that similar to other minority communities in the U.S., Native Hawaiians are more likely to contract and suffer from COVID-19, exacerbating the aforementioned health and social challenges (Kaholokula et al., 2020). Additionally, the COVID-19 pandemic has led to significant disruptions in employment and economic insecurity, both of which are intertwined with food insecurity, which leads to poor mental and physical health, obesity, diabetes, asthma, and arthritis (Kromer Baker et al., 2001). Many Native Hawaiians work in the tourism industry and in other service jobs that pay low wages (Department of Business, Economic Development and Tourism, 2017). As a result of the COVID-19 pandemic, the tourism industry, a major economic engine in Hawaiʻi, has been devasted. Coupled with the State's current travel restrictions stemming from COVID-19 safety precautions, many Native Hawaiians have become unemployed.

Ke Kula Nui O Waimānalo: Revitalizing Native Hawaiian Cultural Practices

Despite the current health and social challenges that Native Hawaiians face, Native Hawaiian communities have demonstrated resilience and strength. Since the 1970s, the Native Hawaiian Renaissance Movement has made tremendous efforts and strides in revitalizing Native Hawaiian cultural practices, such as the Hawaiian language, oceanic voyaging, food cultivation, and land and ocean restoration (Goodyear-Kaʻōpua et al., 2014). Numerous Native Hawaiian immersion schools have been established, thereby dramatically increasing the number of Native Hawaiian speakers. Communities across the islands have come together to restore land devastated by invasive species. Many rural communities that are predominately Native Hawaiian have been instrumental in retaining and promoting cultural practices, including the community of Waimānalo. Waimānalo is a rural community located on the eastern side of the island of Oʻahu. It is home to 7,000 residents, of which approximately one-third are of Native Hawaiian descent (U.S. Census Bureau, 2015). It is recognized as a medically-underserved population with a primary care health professional shortage (Healthcare Association of Hawaii, 2013) and has one of the highest percentages of food insecure households (36.2%) in the state of Hawaiʻi (Kromer Baker et al., 2001). Despite these challenges, many strengths reside in this close-knit community. Waimānalo is known for its natural resources, a history of community advocacy and organizing, and a large number of Native Hawaiian grassroots organizations.

One of these organizations, Ke Kula Nui O Waimānalo (KKNOW), is a grassroots community-based non-profit 501(c)3 organization established in 2017 by individuals from diverse backgrounds, all of whom are from the Waimānalo ahupuaʻa. The backgrounds of the Board of Directors include Hawaiian Studies, social work, complementary medicine, agriculture, public health, art therapy, education, and business. The organization's vision is Kūkulu Kaiāulu, meaning building community. Their mission is to provide a community of practice through collaboration of Kānaka (people) to promote a strong and healthy ahupuaʻa. They aim to support the Waimānalo community to become self-sustainable in every way, from the mountain to the sea, with the belief that the ʻāina and kai (ocean) can provide for the community as it did years ago. KKNOW is built upon on the early efforts of God's Country Waimānalo (GCW), which was also a grassroots organization founded in 2005 with the mission: Hoʻoulu a me Hoʻōla Lāhui, which means to propagate & perpetuate the race. The organization is rooted in cultural preservation and community partnerships, and connects the Hawaiian culture to other aspects of health and wellness

(Ho-Lastimosa, 2014). GCW strives to incorporate four key Native Hawaiian values of kuleana (responsibility), mālama (to care for, to protect), ʻike pono (intellect), and haʻahaʻa (humility, humbleness). These traditional values help shape culturally-grounded programs to preserve culture, strengthen community partnerships, and promote health and wellness.

KKNOW is accomplishing its vision through several culturally-grounded and community-driven programs, including Waimānalo Limu Hui (WLH), OLA KINO, MALAMA Aquaponics (Ho-Lastimosa et al., 2019), Waimānalo Pono Research Hui (Chung-Do et al., 2019; Keaulana et al., 2019), and others that are offered to over 1,000 Waimānalo community members from keiki (children) to kūpuna (elderly) at no charge to participants. Most participants are of Native Hawaiian ancestry and are from Waimānalo. The program embraces the educational pedagogy that Hawaiian knowledge is best acquired through experiential and multi-generational learning (Meyer, 2001). All programs are culturally-grounded in Native Hawaiian values and practices, are community-driven, and promote the connections between ʻāina, food sovereignty, and emphasize ʻike kūpuna (ancestral knowledge). For example, WLH is a community-driven initiative to bring back limu (native seaweeds and grasses) to the shores of Waimānalo. The kūpuna recalled abundant limu found in Waimānalo's beaches, which have greatly decreased today because of environmental degradation and climate change. Because limu plays an important role in Native Hawaiian culture in terms of diet and lāʻau lapaʻau, WLH holds regular limu planting days on Waimānalo's shores as well as wall-building days to restore the kuapā, or rock wall, of Pāhonu, the only known pre-contact turtle enclosure in Hawaiʻi. Another program is MALAMA Aquaponics, which began as a community-based initiative in Waimānalo in 2009. In 2018, KKNOW partnered with the University of Hawaiʻi (UH) to start a clinical health study to examine the ways a backyard aquaponics program can impact family wellness (Ho-Lastimosa et al., 2019). The study innovatively merges the modern technology of aquaponics with traditional Native Hawaiian practices to create a "mini ahupuaʻa" system in families' backyards to provide constant access to fresh fruits, vegetables, and fish. Through multiple hands-on workshops, families learn to create ʻai pono (healthy foods) meals and lāʻau using the produce grown in their aquaponics systems. They also work together as a hui (group) to help each other build and maintain an aquaponics system in their backyard.

Many of the KKNOW programs are hosted by The Waimānalo Learning Center (WLC) at the College of Tropical Agriculture and Human Resources' Waimānalo Research Station, with

support provided by the WLC Community Coordinator. The Waimānalo Research Station is an agricultural research facility located on a 128-acre piece of land in Waimānalo since 1955 to promote diversified agriculture. The WLC was initiated in 2012 to support broader community engagement by the station, with a Community Coordinator position created and hired in 2014. Consequently, the period 2014-2020 saw an explosion in programming (Chung-Do et al., 2019; Ho-Lastimosa, 2019), with the total annual community engagements supported by WLC exceeding 9,000 community members in 2019.

COVID Food Distribution

The COVID-19 pandemic hit Hawai'i in March 2020, shutting down schools and businesses, which led to a sudden increase in unemployment rate and excerbating food insecurity issues, especially among vulnerable populations. KKNOW sprang to action to garner resources and partners to meet both the immediate and long-term needs of the Waimānalo community. To meet the immediate needs of food insecure community members, families, elderly, and the houseless community, KKNOW partnered with numerous organizations from multiple sectors including non-profit and for profit businesses, and governmental agencies to provide prepared meals and fresh produce. Since mid-March, 24,000 prepared healthy meals and 3,550 fresh produce boxes (milk, eggs, bread, etc.) as well as seeds and plant starters (especially Hawaiian traditional staples like kalo (taro), 'uala (sweet potato) have been distributed to over 6,500 Waimānalo families and community members who are vulnerable to food insecurity, economic instability, and other social challenges.

KUPU Hawai'i, which is a non-profit youth empowerment program that connects youth to themselves, families, and communities through service-learning and environmental stewardship, coordinated the preparation of healthy meals by the chefs and students from their culinary training program. Aloha Harvest, one of approximately 50 recognized food rescue non-profit organizations across the nation, coordinated the delivery of the meals to the food distribution site in Waimānalo with ReUse Hawai'i. Communities by Altres, the philanthropy arm of Simplicity by Altres, saw the need to help our rural communities on the island of O'ahu and eagerly supplemented the ongoing effort with 3,550 boxes of fresh produce, bread, milk, eggs and protein. Ham Produce & Seafood, a wholesale distributor of fresh fruits, vegetables, and seafood, provided fresh produce boxes that included milk, eggs, bread, vegetables, for example for distribution. WLC provided

fresh fruits, vegetables, seedlings, and starter plants to the community. The Department of Hawaiian Homelands, which governs the Hawaiian Homes Commission Act of 1920 to protect and improve the lives of Native Hawaiians, and the Waimānalo Market Co-Op, a local co-op that brings locally-grown food and Native Hawaiian medicinal plants and herbs to the community, provided the sites for the daily food distribution.

The meals were distributed Monday to Friday over 14 weeks from late-March to end of June through the efforts of long-time volunteers and program participants of KKNOW, as well as other volunteers from Hawaiian Civic Club of Waimānalo, 808 Cleanups, Oʻahu Hawaiian Canoe Racing Association, and Windward Community College Trio, totaling 1,507 volunteer hours. Safety Systems & Signs Hawaii, a local business that deals in safety products and services, donated personal protection equipment, including gloves and masks, and safety equipment, such as traffic cones and signage, for the volunteers. Financial support for these efforts came from Hawaiʻi Community Foundation, Hawaiʻi People's Fund, NDN Collective, First Nations Development Institute, Harold K.L. Castle Foundation, Community Change Leadership Network of Robert Wood Johnson Foundation, and Papa Ola Lōkahi.

Build Community Capacity and Community Resilience

In addition to meeting the immediate needs of the community, KKNOW's goal was to also build community resilience by teaching Native Hawaiians how to grow their own food before another disaster or disruption strikes. Funding was acquired to build permanent areas of food sources in the community to encourage community members to learn a variety of ways of growing their own food, especially among vulnerable populations, such as the houseless community. To serve the houseless community, KKNOW worked with Hui Mahiʻai Aina, which is a part of the Waimānalo Kauhale, Inc. The Waimānalo Kauhale, Inc. is Hawaiʻi's first community-driven kauhale for chronically houseless members. The kauhale concept is a traditional, cultural model of housing consisting of tiny homes clusters and communal areas for restrooms, cooking, and gathering. Kauhale are meant to foster a sense of community and ownership among their formerly houseless residents. These master-planned communities consist of permanent, supportive housing units and a small amount of rent will be collected based on personal income. Through a partnership with Alu Like, KKNOW, and UH CTAHR, the WLC Community Coordinator and volunteers trained 8 Native Hawaiian ʻōpio (youth) leaders aged 14-24 years from Waimānalo in a variety of

food production methods, including aquaponics, food forestry, fruit orchard, and banana circle. The ʻōpio leaders then implemented these food production methods at Hui Mahiʻai Aina with the residents and staff.

In additon, two large aquaponic systems (each with four 4'x8' grow beds and two 300-gallon fish tanks) were installed and are expected to produce at least 1000 lbs of produce and fish annually. Many community members are drawn to aquaponics technology because it mimics the Native Hawaiian traditional ahupuaʻa system (Beebe et al., 2020). By effectively combining hydroponics (soilless horticulture) and aquaculture (raising fish stock), families can grow fresh fruits, vegetablesm and fish in a contained, sustainable, food production system that uses a fraction of the water and nutrients of traditional terrestrial systems (Tokunaga et al., 2013). Compared to gardens, aquaponics vegetables and fruits mature in a shorter time span and require minimal maintenance with fewer demands on time and skills. The result is a largely self-contained food production system that effectively illustrates the traditional natural resource management model of the ahupuaʻa. Aquaponics systems can be easily constructed on a small scale to provide families and communities a consistent source of staple Native Hawaiian foods in a system that models traditional natural resource management. Aquaponics is an innovative way to merge Native Hawaiian values, practices, and foods with modern agricultural technology. In addition to the efforts at the Waimānalo Kauhale, the MALAMA Aquaponics program also helped 10 Native Hawaiian families install backyard aquaponics systems at their respective homes.

A food forest, fruit orchard, and a banana circle were created at the Waimānalo Kauhale to emphasize traditional staples. The food forest, which includes a variety of vegetables such as kalo, papaya, ʻulu (breadfruit), ʻuala, and beans, is expected to produce 500-1000lbs of food annually. A fruit orchard that includes lychee, orange, tangerine, coconut, and mountain apple trees will also be grown on site and is expected to produce 500-1000lbs of food per year. The banana circle will have native varieties of bananas as well as kalo, ʻuala, and other plants preferred by the Kauhale residents, and is expected to produce 700lbs of food. Before these food sources are built, residents of Kauhale will be surveyed to ask what types of fruits and vegetables they want to plant and eat.

Discussion

To address the needs and priorities among vulnerable populations that are exacerbated by disasters, innovative collaborations among public, private, and non-profit organizations need to be

promoted. To respond to the impacts of the COVID pandemic on the community, KKNOW was able to anticipate the needs and leverage existing resources and relationships in Waimānalo and the surrounding communitues to create synergies that resulted in trans-disciplinary partnerships among farms, wholesalers/distributors, certified kitchens, academics, and community members that have the history and trust in the community. Partnering with agencies outside the community that possess resources, such as a certified kitchen, not readily available within the community not only allowed for immediate distribution of prepared meals, but also allowed for the opportunity to develop proposals for establishing these resources in the community.

It was also important to meet immediate community needs as well as build capacity and resilience. KKNOW and its partners and volunteers used a two-pronged approach to meet the immediate needs of the community and to build capacity and resilience in the long-term. Coupling meal distribution with home food production training builds self-provisioning capacity that provides individuals with some control over their food security (Colby & Kennedy, 2017). These individuals then have credibility among their peers, exceeding that of professionals and can then become effective advisors to other community members (Bezold, 1989). In addition, including young community leaders in food distribution and food security activities provides professional development opportunities that have the potential to pay big dividends in the future.

One critical factor in this successful implementation and collaboration is KKNOW's trust and history in the community. Although KKNOW was founded fairly recently, KKNOW is community-driven with members who are either from the community or have long-standing relationship with the community. This is an example of the power of the community members as primary actors. Efforts to address the pervasive health disparities have historically used western-centric methods that have failed to produce long-lasting results among Indigenous peoples, including Native Hawaiians. Therefore, there has been a call for place-based and culturally-grounded interventions, which are demonstrating promising results with Indigenous peoples. To restore the health of Native Hawaiians, community leaders, cultural practitioners, and researchers are calling for interventions that revitalize cultural practices and identity, and recognize the impacts of historical trauma and the existing strengths and resilience of the community. Using a land-based and community-driven approach, the Native Hawaiian worldview of health and healing, which is deeply rooted in the ʻāina, needs to be the foundation of promoting health and resilience in Native Hawaiian communities (Antonio et al., 2020; McGregor et al., 2003).

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Enacting Indigenous Community Relationships and Governance Systems

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Abstract
COVID-19 has had an overwhelming impact throughout the world. Many countries, including Canada, declared states of emergency. Many people experienced self-isolation and practiced physical distancing, and schools have been closed. Around the world, Indigenous communities and leaders have drawn on their own environment, health, and education systems and taken important measures to prevent the spread of the virus. This paper provides an overview of Indigenous health systems, and a short historical discussion of the impacts of earlier pandemics on Indigenous people. It examines Indigenous experiences dealing with and managing the COVID-19 virus, and reviews literature from various reports, scholarly articles, websites, and databases. The findings show that Indigenous people have valued the knowledge that Elders carry with them and have developed procedures to protect the Elders. Indigenous people have also found ways to connect with each other, to live their daily lives, and to build and nourish caring communities. Findings from this research reveal the ways in which Indigenous people experience and address the pandemic through their governance models and show their adherence to Indigenous codes of ethics and laws.

Introduction

According to the First Nations Health Authority (FNHA) (2020), Indigenous peoples always had 'health protecting' lifestyle and ways of being. Indigenous peoples live off the land and experience spiritual wellness and overall good health. Intricate systems connect each Nation to its territory (Vancouver Coastal Health, n.d., p. 7). These ways of life are ingrained in Indigenous laws and protocols which benefit the whole community. For example, The First Nations Health Authority notes that oral and historical traditions and contexts confirm practices and beliefs that have persisted over time (FNHA, 2020). Indigenous peoples' understanding of health and wellness is shaped by their relationship with the earth, the water and all living beings (p. 7). Those who become unwell in the community have the support of their family and community, and this practice is still evident today. Therefore, Indigenous people, based on their

philosophy and understanding of their Indigenous world model, practise a holistic way of health and wellness (Vancouver Coastal Health, n.d).

Historical Context on Pandemic

The impact of colonization and government legislation, including policies concerning residential schools, forced adoptions, foster care, and displacement, continue to have a detrimental impact on Indigenous people (Vancouver Coastal Health, p. 3). Indigenous people experienced quick changes to their structures, governance systems, and everyday life. The First Nations Health Authority (2020) explains, "they retain virtually no political power in the face of Canada's repressive legislation" (para 23). Barrera (2020), writing about some historical accounts in Canada, notes that from the 1830's to the 1930's, successive epidemics swept through Algonquin settlements in the Upper Ottawa Valley, destroying families and villages alike. Loggers, fur traders, miners, labourers, and settlers introduced the diseases, forever reshaping the Algonquin communities (para 5).

Canada's residential school system, which Indigenous children were forced to attend, included industrial schools, boarding schools, homes for students, hostels, billets, schools with a majority of day students, or any combination of these (Castellano & Archibald, 2007 p. 76). Tuberculosis and other disease outbreaks were common at residential schools, and children – many of whom died – were quarantined on a regular basis (Longhurst 2020). The Truth and Reconciliation Commission Report of Canada (2015) asserts that there were over 6,000 deaths in residential schools.

These experiences were not exclusive to the Canadian context but were felt in Indigenous communities around the world. For example, since 1492, in the Caribbean territories where I am from, where my ancestors were brought to be enslaved as chattel, and where some of my ancestors were Taino and the original peoples of those lands, European contact resulted in the introduction of new and devastating diseases (Longhurst, 2020, p. 2). Smith-Morris and DeLuca (2020) remind us that these pandemic and other epidemics are connected to broader structural challenges which Indigenous peoples face, including threats to their food security, deforestation and climate crisis.

As I reflect on the current COVID-19 situation, a Canadian court has dismissed an appeal by the Squamish Nation, Tsleil-Waututh Nation, the Ts'elxweyeqw Nation and the Nlaka'pamux First Nations against the Trans Mountain pipeline expansion (Indian Country Today, 2020). This

is occurring in the midst of a pandemic. The United Nations Human Rights Office of the High Commission (2020) argues that Indigenous peoples are being denied their freedom of expression and association, while business interests are attacking and destroying their lands and resources (para. 8). This is happening while Indigenous people are working to alleviate the crises in their communities and to protect themselves against the virus. Indigenous people have a right to self-determination, and their lands and resources must be ensured (United Nations Human Rights Office of the High Commission (2020, Para 8). Varallier (2020, para 1) discusses how impossible it is to understand the impact of the virus on Indigenous people in Canada without understanding the repression, oppressive policies, and genocide that they experienced. The literature demonstrates how Indigenous people in Canada care deeply about Elders and Knowledge Holders and shows the steps that Indigenous leaders have taken to ensure the safety of the Elders and communities.

Emerging Themes-Indigenous Elders are Sacred to Communities

According to Nuorgam, chair of the United Nations Permanent Forum on Indigenous Issues, the COVID-19 pandemic poses a major health threat to Indigenous peoples around the world (para 1, 2020). This is due to the generational inequities that Indigenous people experience across all institutions. In Canada, the First Nations Health Authority cultural safety attribute working group explains that colonial policies and actions were targeted to get access to Indigenous Lands. They argue that the continued attempt at the assimilation of First Nations Peoples also includes the "denial of First Nations rights and title, residential schools, and *Indian* hospitals" (The Cultural Safety Attribute Working Group, 2019, p. 5). Canada has a long history of institutionalized and oppressive laws which produced blatant inequities in Indigenous people's health, education and more.

Rodriguez-Lonebear describes how COVID-19 amplifies the ways in which Indigenous peoples are treated by oppressive colonial systems. Rodriguez-Lonebear argues how losing even one Elder threatens Indigenous nations' futures "as it means losing our language, oral histories and the cornerstones of our families and communities" (cited in Lakhani, 2020, para 17). Indigenous people throughout the world have echoed similar responses about Elders. For example, throughout Latin America and Asia, Indigenous leaders have expressed concerns about the safety of their community and Elders who they describe as the "keepers of heritage" (Garrison, Lammertyn &

Boadle, 2020). Nieva, a community leader in Argentina, states "The fundamental importance of Elders is that they hold the collective memory, particularly regarding our identity" (cited in Garrison, Lammertyn & Boadle, 2020, para 5). The impact of COVID-19 on Indigenous Elders has implications for whole communities, since Elders are key in transmitting Indigenous Knowledge, culture and practices. Nuorgam (2020, para 1) discusses the importance of recognizing Indigenous peoples as essential in fighting the pandemic, and of recognizing Indigenous governance and knowledges, including health and food systems, which can aid in building effective COVID-19 emergency response and recovery.

In one instance, The Haida nation urged the public, in the spirit of respect to cancel any trip to Haida Gwaii. Their statement read:

> Dear Public: We respectfully ask you to do your part and protect Haida Gwaii by staying home. The Haida Nation survived decimation—notably from smallpox and tuberculosis—and the trauma of the colonial encounter. The Elders and knowledge holders are one of the last links to the wisdom of our ancestors about how to live with the Earth and each other. Please, do your part and cancel your trip to Haida Gwaii this summer. The stakes are too high and outweigh the inconvenience; and, Haida Gwaii will always be there in another year. (Haida Nation, 2020)

Speaking about the smallpox that historically ravaged the community, Wilson Kii'iljuus states "Smallpox running through our people can be likened to a fire burning a library of 30,000 books. Our Elders are our books of knowledge and the young people are the first drafts…" (2009, p. 9).

Indigenous people have gone to great lengths to protect their Elders and communities since the diseases that Europeans brought have caused considerable destruction which has an ongoing legacy. As a result, Indigenous leaders and Elders exercise and assert their governance systems. Champion (2020) explains that "when an epidemic comes, it is important to beware of the disease, and the consequences of it" (para 12).

Many Indigenous communities are keeping borders closed while Canadian provinces are opening businesses and amenities. For example, there are only three remaining fluent Nuxalk-as-a-first-language speakers left in their British Columbia community. Therefore, the Stataltmc Nation are preventing the arrival of outsiders in order to keep the virus out of their community and to protect the Elders from COVID-19 infection (Para 3). Contact for Indigenous people, whether it is European contact with the Taino in 1492, or with other Indigenous nations in 1600 or 1700, has resulted in destruction and decimation. Smith-Morris and DeLuca (2020, para 3) discuss the significance of Elders and their knowledge to Indigenous communities and to future generations.

While StarBlanket and Hunt observe that "in many ways, the pandemic carries on a lineage and does the work the state cannot do; that is to say, eradicate us so Canada does not have to deal with Indigenous social and political life" (2020, pp. 3-4). The literature discusses how Indigenous people continue to assert their forms of leadership and governance, continue to engage with their communities, are proactive, and continue to work to prevent the disease from entering their communities. As a result, travel into many communities is limited, and Indigenous people have found ways to develop outreach programs for the community (Smith-Morris and DeLuca, 2020, para 6). This is in spite of Indigenous people's collective experience of systemic and oppressive health care and other power systems under Canada's settler colonial governments.

StarBlanket and Hunt (2020) refer to the Canadian government and their jurisdictional and bureaucratic colonial processes regarding Indigenous people as a "convoluted relationship between different levels of government. Even outside of a pandemic, the provision of health services to Indigenous people is a messy, patchwork arrangement" (pp. 3-4).

Living Indigenous Pedagogy

Since the outbreak of the coronavirus, Indigenous people have used technology and social media to connect with each other, build relationships and form communities virtually. The Cultural Safety Attribute Working Group (2019, p. 14), states "Community represents where we live, where we come from, and where we work. There are many different communities: communities of place, people, knowledge, interests, experiences and values." Over the past several months of the pandemic, Indigenous people have used innovative ways to stay connected with each other, to learn and to practise their knowledge systems and transmit their cultures. These include using online webinars and social networking to share information to protect people in the community (Smith-Morris, 2020, para 7). Indigenous youth are building and inspiring community through the TikTok-based #PassTheBrush challenges on social media platforms (Brant, 2020, para, 3).

In many ways, Indigenous people are adapting to the situation and are finding ways to work within the challenges that COVID-19 presents. The seven Anishinaabe teachings of wisdom, love, respect, bravery, truth, honesty, and humility are all exercised and are expressions of the methods in which Indigenous people meet, lead and share with each other. They exemplify the ways in which Indigenous people have always carried out Indigenous Ethics, and the teachings guide them through this pandemic. Brant (2020) observes that Indigenous authors and podcasters are bringing

people together through dialogue, while the survivance and the solidarity of Indigenous peoples "hold us up and keep us well" (p. 4). Longboat (2020) describes this as practicing reciprocity, guided by gifts of kindness, honesty, sharing and respect, and as acts of taking up the call to action (para 6).

Smith-Morris (2020) speaks of the gift of Indigenous languages and discusses The Cree Literacy Network which introduced a "Stay Home: Learn Cree" broadcast to engage people who are staying at home to learn their language. Similarly, the Native Canadian Centre of Toronto (and other Indigenous organizations throughout Ontario) has introduced online language and culture learning programs (NCCT, 2020).

Longboat (2020) shares that Indigenous philosophies across "Turtle Island have spoken about this illness and have provided instructions that Indigenous people can use to strengthen in this time of illness" (para 2). Meanwhile, Indigenous communities have hosted virtual beading circles. When schools closed, Indigenous educators and scholars created "Think Indigenous" online as a way to teach, inform, entertain and dialogue with Indigenous youth from K-8. When people could no longer meet face to face, Indigenous people moved online. Brant (2020) states that "Our virtual Indigenous community… is stronger than ever as evidenced with each YouTube, TikTok video and virtual jingle dress dance" (para 5). Indigenous people found ways to continue to embody their Indigenous ways of life. These are significant activities since, in the past, the Canadian government prohibited Indigenous people from practicing their spiritual ways of life. Even then, they found ways to live their Indigenous ways despite the gaze, hostility, and violence of the settler colonial society. Below I have outlined some calls to action for governments to adhere to as communities continue to navigate the COVID-19 pandemic.

Some Calls to Action

* The United Nations has called on governments to provide effective support to Indigenous communities that have imposed restrictions to stop the spread of the COVID-19. The Canadian government must provide support to Indigenous communities as they have done throughout the rest of the country. Indigenous Health is a Treaty and Inherent right. The government should be more effective and refrain from sending body bags to First Nations communities as it did during the H1N1 virus. That was reminiscent of Canada's assimilative and genocidal policies towards Indigenous peoples (United Nation COVID-19 Response, 2020).

* The impact of historical under-funding of Indigenous communities becomes more evident during a pandemic. Funding support in a reasonable amount and time remains crucial (Nuorgam, 2020).
* It is critical that free and informed consent of Indigenous peoples be obtained before initiating activities with Indigenous peoples or communities. Everyone, including the government and members of the public, must consult with Indigenous leaders/peoples before going on Indigenous Lands and before making decisions that will impact their lives and communities (UNDRIP, 2007).

Conclusion

Through generations, Indigenous peoples have established responses to different circumstances within their communities. These are founded on the principle of ensuring that the community survives (Degawan, 2020, p.3). While the current pandemic has impacted people globally, this paper shows that Indigenous peoples have experienced many systemic inequities and oppressive structures (see Begay 2020). As Starblanket and Hunt (2020) state, the current virus affects not only the present generation, but also "the future well-being of coming generations." Indigenous communities are exercising their governance systems and have grounded their responses to COVID-19 in their own Indigenous Knowledge systems.

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Decolonizing Risk Communication: Indigenous Responses to COVID-19 using Social Media

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Abstract

In this exploratory study, we examine how American Indian and Alaska Native (AIAN) governments and organizations are using social media to share critical health information about coronavirus disease 2019 (COVID-19) with their citizens. Through a thematic analysis of 119 public Facebook posts made by Tribal governments and organizations, we identified three broad categories and 13 subthemes. Tribal governments and organizations created risk communication material for their respective communities that fell under (1) risk reduction, (2) meeting community members' needs, and (3) staying connected to community and culture. Our findings suggest that through social media AIAN communities and organizations played a crucial role in disseminating reliable culturally adapted risk communication and vital community information to Tribal citizens during the COVID-19 pandemic. Such communication included clear illustrations, posts and messages about the importance of masking up, social distancing and washing one's hands; mandated border closures; and suggestions for maintaining a sense of connectedness with community. By doing so they are filling a gap that ensures their communities receive the relevant information they need to mitigate and manage risks. In order to understand how to better meet community needs, more work is needed to improve the wellbeing and visibility of AIAN people in the areas of health disparities, technology, social media, and the many impacts of COVID-19.

Introduction

As the novel coronavirus disease 2019 (COVID-19) outbreak expands, American Indian and Alaska Native (AIAN) communities are experiencing some of the highest rates of infection, hospitalization, and morbidity among all racial groups in the US (Centers for Disease Control and Prevention, 2020). Many of these increased health risks are rooted in the significant ongoing health disparities faced by AIAN peoples (Castor et al., 2006; Jones, 2006) and amplified by persistent lack of adequate and timely support from the US government (Nagle, 2020; O'Neill, 2020; Pickner et al., 2018). These risks are further compounded by the barriers Tribal citizens face when seeking current and relevant health information. Furthermore, AIANs experience invisibility in America (Fryberg & Townsend, 2008; Hammack et al., n.d.), that is perpetuated during the pandemic through the omission of AIANs as a distinct population in critical health data such as national COVID-19 risk assessments and risk communication (Godoy & Wood, 2020; Nagle, 2020). Risk communication refers to "the exchange of real-time information, advice and opinions between experts and people facing threats to their health, economic or social well-being." (Abrams & Greenhawt, 2020; World Health Organization, n.d.).

To circumvent these shortcomings, and to effectively mitigate COVID-19 within Tribal communities, access to culturally relevant and timely risk communication from reliable sources who understand the culture, behaviors and values of these communities is critical (Driedger et al., 2013; Hilleary, 2020). Social media plays an influential role in many communities (Pew Research Center, 2019), including Indigenous communities (Morris & Meinrath, 2009; Rushing & Stephens, 2011; Vigil et al., 2015) where it is being used to transmit health information (Rice et al., 2016; Sweet, 2013).. In this exploratory study, we aimed to shed light on how AIAN governments and organizations are using Facebook to share critical health information with their citizens.

Method

Criteria and Dataset

Our inclusion criteria in this qualitative study were national, regional, and local Tribal governments or organizations in the US with a publicly accessible social media presence and with messaging on COVID-19 risk communication directed at a Tribal community audience. We collected data from January 20, 2020, the date of the first reported COVID-19 case in the US (World Health Organization, 2020), through May 28, 2020. During our data collection window,

early exposures and cases were first identified and quickly spread in the Western US near Pacific Northwestern and Southwestern tribes (Holshue et al., 2020; Gamio et al., 2020). Our data collection was driven by three broad categories of communication important to Tribal communities during the COVID-19 pandemic: risk reduction, meeting community members' needs, and staying connected to community and culture. These categories were informed by our own personal and professional experiences as AIANs connected to tribes and non-Indigenous researchers, as well as Indigenous social media and relevant literature (Belton, 2010; Duarte, 2017; Duarte & Vigil-Hayes, 2017; Molyneaux et al., 2014; Monroe, 2002; Sweet, 2013). We generated our dataset by gathering and enumerating Facebook posts, messages and dates from each of these organizations, agencies or governments.

Thematic Analysis

We employed thematic analysis (Braun & Clarke, 2006; Crowe et al., 2015), guided by principles in decolonizing and critical Indigenous methodologies (Denzin et al., 2008; Kovach, 2010; Smith, 2013; Wilson, 2008). After familiarizing ourselves with the dataset, our analysis began by reviewing and writing about each post, then discussing with our research team the emerging patterns and subthemes that materialized within the three main categories listed above. This was an iterative process that led to the refinement of each category and subtheme in order to accurately define and describe each of them.

Results and Discussion

Our dataset included 119 public Facebook posts from 11 Tribal governments and nine Tribal organizations distributed across three broad categories (Table 1): Risk Reduction (26), Meeting Community Needs (78), and Staying Culturally Connected (15). Additionally, 13 distinct subthemes emerged from our analysis (Table 2). We describe how Tribal governments and organizations used social media messaging in two broad communication types: culturally adapted risk communication and community-based responses relating to Tribally focused services or culture.

Table 1.

Total Facebook Posts per category made by Local, Regional and National Tribal Organizations and Tribal Governments.

Category	Source of post					
	Tribal organization				Tribal government	Total
	Local	Regional	National	Total		
Risk reduction	1	7	0	**8**	**18**	**26**
Meeting community needs	1	8	23	**32**	**46**	**78**
Staying culturally connected	0	4	5	**9**	**6**	**15**
Total	2	19	28	**49**	**70**	**119**

Note: Tribal government includes governments and their services specific to their citizens, including localized Tribal community governments, health departments, and media services.

Table 2.

Total Facebook posts per Category and Subtheme.

Category & subtheme	Total posts
Risk reduction	**26**
CDC guidelines*	6
Face coverings	9
Social distancing	5
Handwashing	3
Family and Community	3
Meeting community needs	**78**
Health and wellness	24
Elder care	13

Food and water access	10
Education	15
Tribal government services	10
Curfews and border closures	6
Staying culturally connected	**15**
Cultural activities	11
Resilience and resistance	4
Total	**119**

*Note: This subtheme is not discussed in the body of this paper; however, it reflects our data of re-posted CDC recommendations or similar posts made by Tribal nations.

Risk Reduction

At the start of the outbreak, Tribal governments and organizations used their Facebook pages to repost notices from the Centers for Disease Control and Prevention (CDC) and county public health departments that focused on reducing risks due to the spread of COVID-19, understanding its symptoms, and treating infections. Subsequent posts included culturally adapted and community-specific messaging by Tribal nations and their health departments that incorporated images, graphics, videos and infographics representing AIAN peoples and cultures. Additionally, some Tribal health organizations referenced AIAN-specific, COVID-19 resource webpages such as the Northwest Portland Indian Health Board's (NPAIHB) (Northwest Portland Area Indian Health Board, n.d.), with Tribally focused information on CDC guidance, funding, telehealth, policy and legislative information and tips for creating community messaging (Table 3). Among NPAIHB's posts, one character stood out: Bigfoot. Indigenous communities across the nation have similar cultural and spiritual beliefs of Bigfoot as a helpful partner, messenger or protector (Lokosh & Hinson, 2016; Todd, 2012) and the spiritual connection is foundational as they share messages of community tradition and history (C. Jimenez, personal communication, July 25, 2020). Bigfoot resonates with the Pacific Northwest Tribes as a relative that wanders in the mountains and thick forest — sustaining oral traditional stories (C. Jimenez, personal communication, July 25, 2020; Meldrum, 2019). NPAIHB's Bigfoot post for social distancing

states, "*They've been staying 6 feet away from others and avoiding groups their entire lives*" (Figure 1). Below we discuss additional examples across four subthemes related to risk reduction.

Figure 1. Post about social distancing by Northwest Portland Area Indian Health Board (NPAIHB) on April 21, 2020.

Face coverings.   Tribal governments involved youth in displaying the importance of wearing masks with photos of them holding signs that asked, "Why do you mask up?" along "MaskUp" hashtags. They shared YouTube videos of their youth expressing how COVID-19 affected them and their desire to mask up to keep themselves, their moms (posted on Mother's Day), families, elders, friends, and communities safe. In other posts, they highlighted Tribal members making masks for others and Tribal communities distributing cloth masks to their citizens. Lastly, they shared posts of Native artists who created face coverings using Indigenous imagery, skills including beadwork and weaving, and materials like cedar bark.

Social distancing. Tribal governments and organizations incorporated AIAN culture into their social distancing messages in many ways, adapting CDC recommendations (CDC, n.d.) to be more meaningful to their community members. For instance, one Tribal government re-posted a list of indigenized self-quarantine recommendations that focused on Indigenous values and culture such as safely protecting elders, utilizing traditional medicines and connecting with their traditions, crafts and languages. One Tribal health organization, the Urban Indian Health Institute (UIHI), shared posts incorporating AIAN culture through humor (Urban Indian Health Institute, n.d.). For

example, sharing an Indigenous comedian's alternative handshaking tips such as "Sing an honor song" and "Dance southern plains traditional style," along with using an Indigenous hashtag (#ndnhumor) (Echohawk, 2020). Others embedded familiar AIAN cultural concepts into graphics to illustrate what six feet of social distancing resembles such as the length of canoe paddles (Figure 2) and an adult eagle's wingspan (Figure 3).
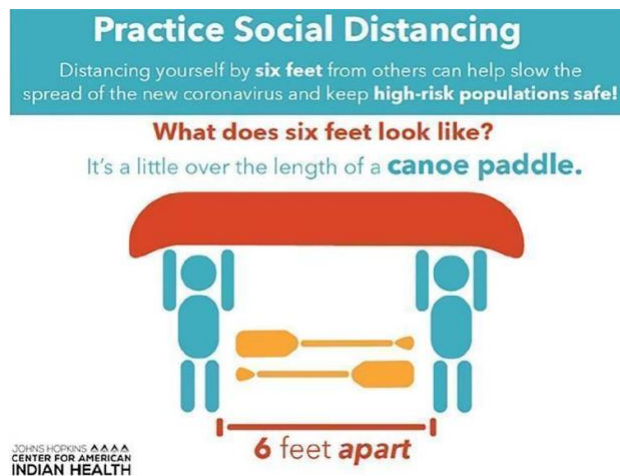

Figure 2. Post about social distancing by Johns Hopkins Center for American Indian Health (JHU CAIH) on April 30, 2020.

Figure 3. Post about social distancing by Johns Hopkins Center for American Indian Health (JHU CAIH) on May 06, 2020.

Hand washing. One tribe posted a video demonstrating proper handwashing and incorporated traditional language narrations and on-screen text. Another tribe's post connected handwashing with reducing risk to others, specifically essential Tribal health care workers. NPAIHB continued using Bigfoot images in its risk communication strategy, illustrating Bigfoot washing their hands for 20 seconds at the river (Figure 4), followed by consistent use of Indigenous hashtags and links to CDC information.

Figure 4. Post about hand washing by Northwest Portland Area Indian Health Board (NPAIHB) on May 15, 2020.

Family and Community. Extended and intergenerational family relationships, including aunties and uncles, are an integral part of many AIAN cultures, so they play a vital role in risk communication in Tribal communities (Martin & Yurkovich, 2014; Weaver & White, 1997). The NPAIHB supported the engagement of youth in risk reduction conversations by re-posting a YouTube video from "Ask Auntie" of WeRNative.org (WeRNative, 2020). The UIHI posted a visual resource representing Indigenous adults and children talking about COVID-19, along with consistent use of Indigenous hashtags (e.g., #WarriorUp, #Resilient, #COVIDinIndianCountry, #Covid_19Indigenous_World) (Urban Indian Health Institute, n.d.). One Tribal nation communicated risk reduction protocols on mourning and honoring loved ones during funerals, an important consideration for Indigenous communities during pandemics (Massey et al., 2009). These family and community posts highlighted the use of face coverings, social distancing and

hand washing, consistent with CDC suggestions but with culturally adapted messaging for Tribal communities.

Meeting Community Needs

Facebook postings consistently conveyed community-specific and culturally adapted resources that incorporated traditional ways of knowing, cultural practices, indigenized strategies, and community-driven programming to meet varying community needs, such as health and wellness, elder care, food and water access, education, Tribal government services, and curfews and border closures.

Health and wellness. Tribal governments and organizations posted recommendations on exercise, healthy eating, and healthy lifestyle choices to build and maintain physical health along with telehealth options. As mental health needs emerged from the stress, fear, and anxiety associated with the pandemic, social media provided active and collaborative digital spaces for sharing culturally adapted mental health resources, traditional healing practices, and personal and social stories. NPAIHB continued using Bigfoot in their posts, showing them stretching on a yoga mat, encouraging Tribal members to exercise and offering a strategy for reducing stress and anxiety (Figure 5). Finally, several national-level AIAN advocacy organizations chose social media to generate meaningful discussions about changing a healthcare system with significant health disparities amplified by the pandemic (Júnior et al., 2020; van Dorn, et al., 2020).

Figure 5. Post about health and wellness by Northwest Portland Area Indian Health Board (NPAIHB) on May 26, 2020.

Elder care. Given the special place elders have among Indigenous communities (Conte et al., 2015; Martin & Yurkovich, 2014; Weaver & White, 1997) and their increased vulnerability during the pandemic, Tribal organizations used their Facebook pages to advocate broadly for elders' protection and offer specific recommendations for ways to support them. Messages also provided strategies to strengthen elder mental health during the stress and challenges of the pandemic. Figure 6 shows how Tribal nations adopted CDC's guidelines and integrated them for community-specific contexts by adding short storylines suggesting ways to care for elders, such as checking up on those at a higher risk while taking extra precaution to stay at least six feet away.

Figure 6. Post about elder care by Northwest Portland Area Indian Health Board (NPAIHB) on April 28, 2020.

Food and water access. Tribal governments and organizations turned to Facebook to announce local food banks and water distribution services, funding resources for food sovereignty projects, guidance on safe shopping practices, traditional knowledge of food to support healthy eating, and the centrality of food as a cultural and relational community practice to foster well-being and resilience in difficult times.

Education. AIAN governments and organizations employed social media to support and implement online learning structures, maintain a sense of community, and address students' holistic needs as the pandemic disrupted educational services and learning communities. Several

Native education organizations created social media posts to connect teachers and students with innovative and culturally relevant lessons and supplemental learning activities.

Tribal government service. There were numerous Facebook conversations around the closure of non-essential services and businesses within and outside Tribal communities and its significant economic impact on Tribal communities, families, and individuals. National Tribal organizations posted informational support and webinar training for Native-owned businesses to help them expand their online services and strategies for continuing operations. On the community level, Tribal governments used social media to broadcast information on accessing unemployment benefits.

Curfews and border closures: Although there is an ever-growing body of evidence for the most effective interventions for reducing COVID-19 transmission, such as social distancing (CDC, n.d.), the use of laws to encourage these behaviors has become contentious (Doshi et al., 2020) and tribes have been marginalized from state and federal decision-making on these matters (Collman, 2020; Nagle, 2020; Tahir & Cancryn, 2020). Notwithstanding, to keep transmission rates at bay, many sovereign tribes enacted Tribal laws mandating curfews and border closures within their jurisdictions (Doshi et al., 2020), using social media to communicate these decisions to their Tribal citizens.

Staying Culturally Connected

Tribal community gatherings and shared cultural practices strengthen interdependence and identity, which are vital to health and well-being for Indigenous Peoples (Walters et al., 2020; Walters & Simoni 2002). While pandemic mitigation strategies that promote physical distancing between people effectively reduce viral transmission, they present tradeoffs such as limited in-person activities which may threaten connectedness to community-wide cultural practices. Below we discuss some of the strategies utilized by tribes to provide opportunities to connect.

Cultural activities. With lockdowns, border closures, and curfews in effect, Tribal governments and organizations sought ways to reduce social and cultural isolation by engaging their communities through Facebook. In particular, larger Tribal communities and organizations used social media, including Facebook Live, as a platform for storytelling, songs, language lessons, sharing recipes, honoring the wisdom of elders, and facilitating remote activities and gatherings. Figure 7 is a post by John Hopkins Center for American Indian Health (JHU CAIH)

about their children's storybook on Indigenous peoples, their values, and their strength and hope in the face of COVID-19 (JHU CAIH, n.d.).

Figure 7. Post about cultural activities by Johns Hopkins Center for American Indian Health (JHU CAIH) on May 21, 2020.

Resilience and resistance. Indigenous health agencies, Tribal members, and grassroots activist groups also used Facebook to offer messages of strength, resilience, and resistance. Tribal communities described anecdotes about their collective historical trauma and struggles against prior pandemics and colonial germ warfare. They reminded their citizens about strength that comes from within their communities and the wisdom of their ancestors. Furthermore, Indigenous activist groups organized aid for affected communities and provided online resources for political action and resistance to continued colonial exploitation in the face of the pandemic.

Conclusion

Through a qualitative analysis of Facebook posts from several Tribal governments and organizations, this study highlights social media as an essential and effective strategy for providing culturally relevant risk communication and community-focused information. The COVID-19 pandemic has exacerbated the existing health disparities Tribal communities face. Targeted and culturally specific risk communication are important supports for Tribal members seeking to mitigate the health, educational, economic, and social challenges wrought by the pandemic.

Recognizing the vital need to connect and share cultural experiences, Tribal organizations and communities rapidly adapted, creating new online spaces and events as an alternative to in-person gatherings. This appeared to encourage adherence to strict social distancing guidelines while reducing the negative effects of isolation.

Limitations

We acknowledge that the scope of this exploratory study is limited to one social media platform, Facebook, and a small dataset of Tribal communities and organizations, often larger ones with a social media presence. Although all included posts were public, we chose to acknowledge the privacy of Tribal governments and not include their names or use images of their posts, in the interest of building trust and respect with these Tribal communities (Hinzo & Clark, 2019). We obtained permission for the use of graphics, such as from NPAIHB, or chose to publish images of public posts made by regional or national organizations who sought to disseminate information broadly.

Future Work

There is much more work to be done to improve the visibility of AIAN people in the areas of health disparities, technology, social media, and the many impacts of COVID-19. While conducting this study, we identified several additional resources that support Tribal communities and organizations with the creation of culturally relevant social media messages, providing templates for posts and graphics and links to relevant health guidelines (Table 3). Consistent with Indigenous research methodologies (Smith, 2013; Kovach, 2010; Denzin et al., 2008), our team is disseminating our research findings for this study directly to Tribal communities in the form of a user-friendly Social Media Toolkit, as well as providing additional resources for creating culturally adapted risk communications (Applied Indigenous Research Methods Social Media Group, 2020).

Table 3.

Online Resources for Creating Indigenous Social Media Posts related to COVID-19.

Center for Disease Control and Prevention

Toolkit for creating social media posts for local efforts to address COVID-19, Facebook and Twitter post templates for Tribal communities, and CDC guidelines for Tribal communities.

https://www.cdc.gov/coronavirus/2019-ncov/communication/social-media-toolkit.html#Tribal-communities

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Johns Hopkins University Center for American Indian Health

Provides audio-visual materials to share information in both digital and offline formats.

https://caih.jhu.edu/news/covid19

Northwest Portland Area Indian Health Board

This resource offers social media campaign videos, social media posts, links to additional resources, and tips for community messaging about COVID-19.

http://www.npaihb.org/tips-resources-for-community-messaging/

Indigenous Responses to COVID-19: A Social Media Toolkit

A social media toolkit that provides examples of social media posts relating to risk reduction, meeting community needs and staying culturally connected created by Tribal nations and organizations for Tribal communities.

https://claritalb.org/student_projects/toolkit-social-media/

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Bringing Indigenous and Earth Sciences, Knowledges, and Practices Together to Understand and Respond to COVID-19

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Abstract
COVID-19 is having specific and devastating impacts, yet it is already spurring resilient responses among Indigenous populations due to unique histories, cultures, geographies, and capacities. The Working Group on Indigenous and Earth Sciences Knowledges and Practices in response to COVID-19 foregrounded Indigenous perspectives in defining research questions for potential intercultural collaboration between Indigenous and Earth sciences to drive urgent, culturally relevant, and appropriate responses to COVID-19. The Working Group included intercultural, intergenerational, and interdisciplinary representatives from the Rising Voices Center for Indigenous and Earth Sciences, a nation-wide network of over 650 scientists, educators, students,

and community leaders and organizers. To identify priority research areas and emerging questions, the Working Group hosted a webinar discussion and fielded a questionnaire with the Rising Voices community as well as utilized their own perspectives and expertise.

Introduction

COVID-19 has specific and devastating impacts that spurred resilient responses amongst Indigenous populations (Lakhani, 2020; Mapes, 2020; UNHR, 2020). All communities are experiencing the effects from the coronavirus yet Indigenous peoples have experienced an exacerbation of issues that stem from the federal government response. For Indigenous cultures, the relationship to place is paramount, thereby they are finding solutions by turning to the resilience and wisdom of their Indigenous ancestors for strategies used during similar events in history (Yeoman, 2020).

The U.S. government initially responded to COVID-19 by putting a package of fiscal measure in place, and, at varying degrees at local and state levels, governments issued emergency stay-at-home and shelter-in-place orders except for essential workers, school closures, and travel and public meeting and/or event bans, to fight the coronavirus. To ensure each state continues to provide essential and core services there are exemptions to certain businesses to remain open. However, these orders left millions of people out of work, some collecting unemployment, and many others not. Even more devastating for many Indigenous and Tribal communities, where assistance to help with the crises may have been provided, it has been scaled-back and blocked by the federal government (Bendery, 2020); legal battles have ensued over the distribution – or lack thereof – of the $8 billion allocated to Tribal nations in the CARES Act (the Coronavirus Aid, Relief, and Economic Security Act), a pittance of what is needed (Cochrane and Walker, 2020). Through the Executive Order on Accelerating the Nation's Economic Recovery from the COVID-19 Emergency by Expediting Infrastructure Investments and Other Activities (White House, 2020), the pandemic has been used as an excuse to greenlight fossil fuel development and extraction on Tribal lands, such as in New Mexico for a number of Tribal communities (Cabrera, 2020), further fueling the climate crisis and exacerbating the effects of COVID-19 on Tribal and Indigenous peoples, homelands, and territories.

In many ways, the situation affecting Indigenous communities is predicted. Capitalist-driven society has ripped apart Mother Earth, with the globalized world driven by private interests

and connected globally through relentless fossil fuel-burning transportation, our one common home has been devastated to the point she is crying out to heal (Roy, 2020). With the levels of resource extraction, habitat loss, human population growth, and commodification of the food, water, and air we breathe and need to survive, those giving close attention saw something on the global scale of a pandemic as quite probable.

In response, the Rising Voices Center for Indigenous and Earth Sciences (Rising Voices) formed a collaborative Working Group to bring together Indigenous Knowledges and Earth sciences to further our collective understanding of COVID-19 (Iaukea et al., 2020). The Working Group included intercultural, intergenerational, and interdisciplinary representatives from Rising Voices, a network of over 650 atmospheric, social, biological, and ecological scientists, educators, students, and Indigenous, Tribal, and community leaders and organizers from across the United States, including Alaska, Hawai'i, and the Pacific and Caribbean Islands, and around the world. Rising Voices facilitates intercultural, relational-based approaches for understanding and adapting to extreme weather and climate events, climate variability, and climate change. as well as other crises. The goal of Rising Voices is to bring together multiple knowledge systems, honoring them equally and recognizing that no single knowledge system is adequate to address the contemporary challenges faced by communities around the planet. Rising Voices is co-administered by the University Corporation for Atmospheric Research/National Center for Atmospheric Research and the Livelihoods Knowledge Exchange Network in partnership with Haskell Indian Nations University, the Indigenous Peoples' Climate Change Working Group, and the National Oceanic and Atmospheric Administration's Office for Coastal Management.

Our Collaborative Approach

The Rising Voices Working Group on Indigenous and Earth Sciences, Knowledges, and Practices in Response to COVID-19 ("the Working Group") was convened as one of the University of Colorado Natural Hazards Center's CONVERGE COVID-19 Working Groups for Public Health and Social Sciences Research, sponsored by the National Science Foundation (NSF). The CONVERGE Working Groups each produced research agenda-setting papers to "help advance convergence-oriented research in the hazards and disaster field. It highlights areas where additional research could contribute new knowledge to the response to and recovery from the pandemic and other disasters yet to come" (NHC, 2020).

The Rising Voices Working Group members came together based on mutual trust and respect, with the work guided by key values at the center of Rising Voices, including but not limited to: a diversity of views and opinions, including acknowledging the inherent value of Indigenous knowledge systems and Indigenous science, adaptive practices, and processes; relational-based, as opposed to extractive or transactional-based science; listening, learning, and sharing between and across cultures and generations; relationship-building and developing trust over time; and respect and awareness of diverse experiences and histories as current relationships and collaborations are shaped by colonial histories (Rising Voices, 2020). To identify priority research areas and emerging questions, the Working Group gathered information from the broader Rising Voices community through two opportunities, a virtual convening and an online questionnaire. This article describes the findings that have emerged from the Working Group, foregrounding Indigenous perspectives and knowledges in defining research questions for potential intercultural collaboration between Indigenous and Earth Sciences to drive urgent, culturally relevant and appropriate responses to COVID-19.

As an initial step, the Working Group created a short online questionnaire about key questions, concerns, and responses to COVID-19, and disseminated it to the Rising Voices network. The goal of the questionnaire was to solicit input from the broader network of Indigenous and non-Indigenous partners, which would then be discussed in the virtual convening as well as Working Group meetings. Fifty-three people responded to the questionnaire, which investigated topics including:

- Where respondents live;
- Any challenges the respondents and/or their communities are experiencing that are exacerbating the impact of COVID-19 or hampering responses to COVID-19;
- What has gone well in in respondents and/or their community's responses to COVID-19 including how Indigenous Knowledges and/or practices can be helpful;
- Any observations that respondents have made or heard about the coronavirus and COVID-19 related to climate or other environmental factors; and
- What questions respondents have about the coronavirus and COVID-19 related to climate or other environmental factors.

Next, information was also gathered through a facilitated virtual convening of approximately 200-members of the Rising Voices network to share further concerns, questions,

and observations around COVID-19 and consider potential collaborations to address the emerging questions from the discussion and questionnaire. Ultimately, the Working Group members held a conference call for an in-depth conversation guided by the questionnaire results and virtual community discussion to coalesce emerging themes. What emerged from the questionnaire, virtual convening, and working group discussions highlights the disparaging differences between Indigenous peoples and non-Indigenous peoples and furthermore, encapsulates positive solutions in dealing with a worldwide outbreak by showing the importance of traditional practices during such times of crises.

Insights, Impacts, and Responses to COVID-19 at the Intersection of Indigenous and Earth Sciences

The following themes emerged from the Working Group's online questionnaire and virtual community discussion. The findings describe several dynamics that Indigenous peoples are facing in present day due to the coronavirus outbreak, including observations of impacts and experiences of resilient responses. The priority research topics and emerging questions throw into stark relief the disparaging differences between Indigenous peoples and non-Indigenous peoples. They also encapsulate positive solutions in dealing with a worldwide outbreak by showing how to revert to traditional practices in times of need. The results from the questionnaire highlight four dynamics that many Indigenous Peoples are facing in present day with the coronavirus outbreak, including several emerging questions.

Food Security and Safety

Food security is a top concern due to local, state and/or federal government not allowing access to certain areas and sites adjacent to Indigenous communities where traditional foods can be found. Traditional foods are obtainable through hunting, gathering, and hiking in the mountains and backcountry. These foods connect to the well-being of a person spiritually, mentally, and physically and their absence is detrimental to health when not obtainable. Another element related to food security highlights the tribes and nations that live in the desert and other remote locations and their access to traditional sustenance is cut off. The only other option is to drive miles away to grocery stores. Because of stay at home and quarantine orders, however, this option is forbidden. This dynamic puts families at risk for unsafe and unhealthy eating practices. Some families are

risking their health by eating what is obtainable even if out of sync with when the food is traditionally consumed; for example, shellfish consumed in certain places this time of year can contain biotoxins potentially resulting in Paralytic Shellfish Poisoning for the consumer.

Pre-Existing Conditions

The many different disparities that Indigenous peoples endure during their daily lives are underlined and exacerbated at times of emergencies such as the novel coronavirus. Many of the results from the questionnaire highlighted concerns such as the high rates of poverty that are seen through housing security and limited resources that affect education, health, and financial stability. The lack of not having a job leads to a profound lasting effect on families and their individual members. Throughout the questionnaire, the need to raise attention to the continued biases and racism against Indigenous Peoples set a tone for the distrust of the U.S. government, thereby not taking the directives of stay-at-home seriously. What comes out of this discussion is the need to have reliable information and communication channels, which is challenging during physical isolation due to a lack of internet and computer access for many Tribal members.

Turning to Resilience and Wisdom

The common denominator throughout the questionnaire results highlighted families navigating back to cultural and traditional practices. This finding highlights cultural practices of Indigenous Peoples of the entire family unit living together. These multifamily/multigenerational households make physical distancing difficult. Isolation and/or living alone is not common and strays from the philosophy of community over individual for Indigenous Peoples. The physical distancing hinders people's practices by not having family members together, much less during a time of a pandemic. Resilience and wisdom is found in the family unit. Together, a focused relationship on land and place occur simultaneously. Turning to the resilience and wisdom of ancestors for strategies used during similar events allows Indigenous peoples in modern times to become resilient based upon the knowledge from their ancestors. There are more people returning to traditional practices in medicines, food sources, gardening, and farming practices. In unity with the family and community, spaces have open in which the community networks and aids provide meals to youth, elders, and members that do not know where their next meal will come from. The need to farm and garden appears to be the most common response to food security for most

families.

Emerging Questions at the Nexus of Indigenous Wisdom and Knowledges and Earth Sciences

The questionnaire results include an array of input that help to define research questions for potential intercultural collaborations between Indigenous and Earth Sciences to drive urgent, culturally relevant, and appropriate responses to COVID-19. The following questions are some of the main ideas that came out of the questionnaire results for possible future collaborative projects:

- What role does temperature/humidity play in increasing or decreasing the spread of the coronavirus?

- What role do high levels of air pollution play in the spread of the coronavirus?

- As the climate and temperature changes, how does this effect exposure to new viruses?

- Would shifts in seasonal changes impact the spread of the coronavirus?

- How will the virus intersect with other climate change-related impacts such as worsening wildfire and hurricane season to exacerbate the effects on communities? For example, are first foods' cycles impacted by delays in doing prescribed burns to keep the air cleaner and human lungs less vulnerable?

- How might the positive outcomes of COVID-driven closures and rest periods on our natural resources influence environmental protection measures moving forward?

- What are the long-term impacts on cultural health and seasonal activities from COVID-19?

- What do Indigenous knowledge systems inform about the linkages between wildlife and humans and the emergence and spread of these novel coronaviruses? In turn, how might Earth science information support what Indigenous knowledge systems inform?

- How can traditional practices, such as not eating predator animals or not disturbing soil in certain places with names that may include related information, prevent virus transmission to humans?

Ethical / Methodological Considerations

Ethically, research to address the impacts—whether of COVID-19, climate change, or any other disaster—with Indigenous populations must be driven by Indigenous communities and

engage Indigenous partners at all steps of the process and proceed only with free, prior, and informed consent. Methodologically, research in this vein must begin by following cultural protocol of the engaged partners and with approval from Institutional Review Boards, and only once approval is granted, go on to utilize Indigenous methodologies that value relationships of trust and reciprocity. We intend that the emergent concerns, observations, and reflections presented here will inspire ethical collaborations that serve Indigenous communities and improve their capacities in the face of COVID-19.

Conclusion

The work highlighted above is focused on facilitating collaborations between Indigenous knowledge-holders and Earth scientists to address emerging questions about the coronavirus and COVID-19 related to climate or other environmental factors. The results from the questionnaire, virtual convening, and Working Group discussions highlighted four dynamics that many Indigenous Peoples are presently facing with the COVID-19 pandemic, including food security and safety; pre-existing conditions; turning to resilience and wisdom; and emerging questions at the nexus of Indigenous wisdom and knowledge and Earth sciences. By valuing Indigenous observations, knowledges, wisdom, and practices equally with Earth Sciences, this work contributes to decolonizing Earth Sciences, disaster management, and public health. Further, it works to mitigate the particular threats and impacts that Indigenous communities and populations face from COVID-19, including the threat of subsequent waves of COVID-19 and the increasing spread of infectious diseases. Doing so addresses injustices in Earth Sciences and disaster management and in the disproportionately adverse impacts of COVID-19 on Indigenous communities. These different approaches to science and disaster management occur because of the different worldviews that come with being an Indigenous person. A collective, co-informed understanding of the concerns and themes included here allows for a different perspective and thereby different solutions based on ancestral knowledge. Times of disaster and crises call for innovation, collaborations, and convergence of expertise, wisdom, and experience. No one single knowledge system or way of knowing holds all of the answers to either the climate crisis or the spread of the coronavirus; it is critical to bring diversity of knowledges and understandings to bear on the linked crisis between a changing climate and the spread of infectious diseases such as the coronavirus.

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Tribal Responses to the COVID-19 Pandemic Experience in the Culture and Health Stations of Taiwanese Indigenous Peoples

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Abstract
Both the challenges faced by Taiwan's indigenous communities due to the COVID-19 pandemic and their experience in preventing the virus's spread are worthy of more discussion. Data include participant observation, archival data analysis, and the author's practical experience on the Tribal Culture and Health Station program. With theoretical insights from the literature on decolonization, sociology of disaster, and community development, this article analyzes three main aspects: the Taiwanese disease control model, Taiwanese indigenous peoples' response to the disease, and the coping experience of Tribal Culture and Health Station. This article thus highlights the importance of medical and public infrastructures, and concludes how social solidarity, public and private collaboration, and innovative technology utilization deeply shaped indigenous community development and the disease control work. The promotion of the Tribal Culture and Health Station in Taiwanese indigenous tribes and the National Health Insurance have become crucial factors to establish disease control centers in tribes and implement disease control policies from the government. What we need to further examine is the relationship between indigenous people and the state, as well as the potential of traditional indigenous medicine and a bottom-up tribal development model. It is the value of reciprocity and collective action from indigenous tribes that can be exemplified for the mainstream society under the pandemic.

Introduction: Taiwan's Model of Epidemic Prevention

As of the end of October 2020, the outbreak of COVID-19 in Taiwan has been under effective control. Counties and cities in Eastern Taiwan, where mainly indigenous peoples reside, are among the few places in Taiwan that have reported zero confirmed cases and hence are considered to be relatively safe. This contradicts the general assumption that indigenous peoples are more vulnerable to the impact of an epidemic because of the healthcare and social inequalities that they have suffered for long. Therefore, the tribal situation and the epidemic prevention experience of Taiwanese indigenous peoples is an issue that must be discussed. This article references archival materials and practical experience from the culture and health station programme; further, it explores Taiwan's epidemic prevention model and the responses of Taiwanese indigenous peoples and the experiences of Tribal Culture and Health Stations. This

article presents observations and reflections from the following three perspectives: decolonisation, the sociology of disaster and community development.

Taiwan's health policies and the country's experience of fighting the SARS epidemic 2003 and COVID-19 2020 has been a model for the world. Taiwan's comprehensive national health insurance system is the keystone in our response to coronavirus disease 2019 (COVID-19). Taiwan's National Health Insurance (NHI) system covers more than 99 percent of the population and provides healthcare services to all citizens nowadays. Adoption of smart technologies forms the backbone of efforts to fight pandemic. Experience of fighting the SARS epidemic helping Taiwan strengthen all-round response capacity and take advanced preparations to fight COVID-19. In 2004, the year after the SARS outbreak, the Taiwan government established the National Health Command Center (NHCC) (Wang, Ng, Brook, 2020). So far, Taiwan's main COVID-19 epidemic prevention measures are as follows:

1. **Border control:** Taiwan resists the invasion of the virus through strict border controls. Quickly carry out control and quarantine on flights in severely affected countries and implement entry quarantine measures.

2. **Mask National Team (National leading and supporting mask production):** Through the cooperation of the country and the private industry, the production speed of medical masks can be rapidly increased in a short time. Through the power of the state, affordable and good quality of anti-epidemic products are provided to all citizens.

3. **Application of technology and innovative technology:** Using the Internet and innovative technology to make a fair distribution of masks, so that everyone in need can get them. People can easily get the masks and anti-epidemic supplies they need through convenience stores or local health centers or know where they are in stock through Internet technology and smartphones. (Chang & Chiu, 2020; Lo & Hsieh, 2020)

But due to overemphasizes the role of the country and the emergency of epidemic prevention, there is less room to discuss ethnic differences and social inequality.

Situation and Experience of Taiwanese Indigenous Peoples: The Case of Tribal Culture and Health Stations

A major policy espoused by the Council of Indigenous Peoples is the establishment of community long-term care stations for Taiwanese indigenous peoples with the help of tribal or social welfare organisations and with government funding. The Council of Indigenous Peoples

is a ministry-level body under the Executive Yuan in Taiwan , serving the needs of the country's indigenous populations as well as initiating the program of the tribal culture and health stations. The main goals of the tribal culture and health station program include preventive healthcare, postponement of disability and active ageing. The main work items of those stations include physiological measurements, phone greetings, home visits, disability prevention, referral services, meal delivery, health-promotion activities and cultural and spiritual courses, among other services. The tribal culture and health station program started in 2015 with 43 stations established across Taiwan, serving more than 1,000 tribal elders. As of October 2020, a total of 432 stations have been set up, serving more than 13,000 people. With an increase in capacity by more than 10 times, these stations have become important and indispensable long-term care depots for elderly indigenous peoples.

According to the Taiwan Indigenous Peoples Open-Research Data (TIPD), there are around 570,000 indigenous peoples in Taiwan. Hualien County (see Figure 1) is the region with the largest population of Taiwanese indigenous peoples. Among the 774 tribes in Taiwan, 182 live in Hualien, 90 of which have established culture and health stations. According to the statistics from the TIPD, there were 15,246 elderly indigenous people aged 55–100 years old in the Hualien area in 2019. Taiwanese indigenous peoples enjoy annuities and other senior citizen benefits once they reach the age of 55. The Amis people are the major ethnic group served by culture and health stations in Hualien, followed by ethnic groups such as Taroko, Bunun and Sakizaya. Currently, 23 of the culture and health stations in Hualien have a service scale of 40–49 people, 20 have a scale of 30–39 people and 22 have a scale of 20–29 people. These community senior care stations have become increasingly common in Hualien.

Figure 1: Map of the Hualien County.

Experience of Tribal Culture and Health Stations in Epidemic Prevention

Although Hualien County is remote from the capital, Taipei, with the support of the national health insurance and national health infrastructure, the epidemic prevention and medical services of Hualien do not fall behind. With the widespread establishment of tribal culture and health stations, 2–4 full-time care-workers with a nursing or social work background work at each tribal station. During the ravages of the epidemic, the culture and health stations act as critical bases for epidemic prevention and community health education. Some important strategies for tribal epidemic prevention that are practiced by the culture and health stations include the following:

1. **Vital sign measurement and temperature monitoring:** During normal days, one of the major service items of culture and health stations is to measure the vital signs and health status of visiting tribal elders. During the outbreak, the stations promoted epidemic prevention through vital sign measurement, temperature monitoring and health education.

Image 1: Sado Station(Amis Tribe)

In response to the epidemic and the central government epidemic prevention measures, an epidemic prevention monitoring measure is set up at the entrance of the station. Anyone who enters must be-checked body temperature at the entrance and be equipped with a mask before entering the station. Once the body temperature exceeds the central government standard, the person will be prevented from entering, and all monitoring data will be recorded for follow-up by local health and epidemic prevention center.

2. **Translation of messages and implementation of national epidemic prevention guidelines (promoted in indigenous people's mother tongue and through a hand-washing dance):** The culture and health stations translate information and guidelines on epidemic prevention from the Central Epidemic Command Centre to indigenous people's languages and spread the message through leaflets and videos. These promotional efforts are conducted with traditional music and dance, where a hand-washing dance lesson plan has been promoted at numerous tribal cultures and health stations. Thus, the tribal elders who suffer from the digital divide and information barriers could receive and understand the latest epidemic prevention information and strategies in a timely manner.

Image 2: Onsing Hot Spring Station (Amis Tribe)

Although the station is an open room space, epidemic prevention measures are still implemented. Elders must take their temperature check and wear a mask when entering the station and maintain a social distance in the seating arrangement. In particular, the care-workers designed the anti-epidemic hand-washing dance, combined with the indigenous traditional music, and matched with health exercises. In a simple and relaxed way, the elderly can memorize the 5 steps of handwashing and practice epidemic prevention in their lives.

3. **Provision of epidemic prevention supplies:** The government provides and controls the distribution of basic prevention supplies to every citizen, including thermometers, alcohol, detergents, and face masks, among other things. Indigenous tribes enjoy priority access to epidemic prevention supplies from local health centres and culture and health stations.

4. **Autonomous tribal epidemic prevention and border establishment:** The Hualien area is a tourist hotspot in Taiwan. Since the epidemic's outbreak, citizens have flooded to

indigenous regions for domestic tourism and sightseeing because they cannot leave the country. This has led to higher risks of virus transmission and presented challenges in epidemic prevention among tribes. Some tribes initiated their own anti-epidemic response actions such as setting up checkpoints at tribal entrances to prohibit visitors from entering and introducing control measures such as temperature monitoring.

Observations and Reflections

After describing the epidemic prevention model in Taiwan and the epidemic prevention experience of the Tribal Cultural Health Stations, according to the relevant literature, further discussions will be made from the perspectives of decolonization, disaster sociology, and community development.

From the Perspective of Decolonisation

With the enormous stress placed on the application of technology and the professionalism of modern epidemiology, traditional healthcare and spiritual care have received relatively little attention. During the epidemic, several important tribal festivals were suspended (including the 'ear-shooting ceremony' (Malahtangia) of the Bunun tribe, the 'millet harvest festival' of the Paiwan tribe, and the harvest festival (Ilisin) of the Amis tribe, etc.). However, in the face of major epidemics and disasters, the traditional wisdom of the indigenous tribes and their healing relationship with nature need to be discussed and observed. The human drive to improve lifestyles may enable a hopeful response and solutions to the crisis by embracing indigenous values(Anna, 2020). The values of mutual assistance and collectiveness emphasised by indigenous tribes bring inspirations and reflections to mainstream society, which are especially precious in times when individualism and capitalism are emphasised.

Insights Based on the Sociology of Disaster

An epidemic is a major disaster in a specific form. Although it is different from natural disasters, it can still be explored from the perspective of the sociology of disaster. Experiences from across the world have shown that countries with more equal and complete welfare systems such as Germany and France and Nordic countries have performed better in controlling the current epidemic; they can thus be listed as less vulnerable countries. In contrast, countries that have liberal systems such as the United States, the United Kingdom, Spain and Italy have displayed poorer resistance to the disease and are listed among highly vulnerable countries. In addition, countries that closed the borders earlier such as Taiwan, Vietnam, New Zealand and

Australia have better control of the epidemic. During the period of a major epidemic and the unfolding of a disaster, we should pay attention to the inequality within society and ethnic groups. From the perspective of 'vulnerability', it is necessary to consider why indigenous peoples bear higher risks. Aspects such as access to information, medical resources and tourism development should all be weighed as potentially feasible solutions to strengthen the resilience of tribes and reduce their vulnerability. Furthermore, the power of the state plays a crucial role in Taiwan's epidemic prevention experience. It has promoted social solidarity, enhanced mutual trust, solidarity and cooperation between tribal organisations, civil society and the nation and has contributed to the effectiveness of epidemic prevention. However, in this process, it is difficult to create space for dialogue for the relationship between the government nation and the main body of indigenous nations.

Community Development

Taiwan achieved brilliant performance in the first stage of epidemic prevention, and we should cheer for the government and the devoted epidemic prevention personnel. However, under the precondition that large-scale community transmission may occur, the strategy and team formation of epidemic prevention should be inverted from 'preventive measures from top to bottom' to a 'bottom-up community mobilisation model.'

As an island country, Taiwan currently employs border control and wearing of masks as its major epidemic prevention strategies. If community transmission is inevitable in the future, we should now do our utmost to bring about a people's epidemic prevention effort by mobilising people from the community, local community organisations and tribes. We should not continue to dream of the emergence of heroes in epidemic prevention or passively wait for the government to act. To place the majority of the burden on a small number of government officials or medical staff is insufficient and inefficient. Ordinary people, tribal community members and non-governmental organisations should play their roles in epidemic prevention and take the initiative to become a backup force of actors to support governmental epidemic prevention effort. The Community Anti-epidemic Action Alliance, which was established in the wake of the experience of SARS (2003) in Taiwan, has rendered laudable actions. There are indeed several resources within the community that should be integrated as soon as possible to develop a bottom-up community epidemic prevention force. Long-term care centres in various tribal and other communities, community health building centres, community colleges, community groups, religious groups, schools, educational institutions, volunteer services, social workers and other groups should join forces to gather the strength of the community for

better community epidemic prevention and assist in quarantine and isolation efforts. The promotion of community organisation and development has been carried out in Taiwan for several years. Over the years, more than 6,700 community development associations have been established. Furthermore, there are numerous volunteer groups, neighbourhood watch groups, and elderly care stations and tribal culture and health stations set up in various regions under the long-term care strategy, along with the long-established local health centres and basic level public health systems in different places. It is time to begin with mobilisation and integration of resources from grassroots communities through public-private partnership to make the most out of autonomous community epidemic prevention, services for disadvantaged groups and mutual caring, in the face of the potential spread of the epidemic and community isolation.

Conclusion

Taiwan's experience in COVID-19 epidemic prevention provides critical insights including the importance of basic medical facilities and public construction, social solidarity and public-private partnership, and also the application of technology. Among indigenous tribes, the widespread establishment of culture and health stations, infrastructures and health insurance has provided important epidemic prevention bases deep inside every tribe and acted as partners of the government to promote epidemic prevention strategies during the epidemic. However, we have to look deeper into the reasons behind successful epidemic prevention in terms of the relationship between indigenous peoples and the government and how to attach fresh emphasis to the traditional healthcare of indigenous peoples, and also the bottom-up tribal development model. The value of mutual assistance and collective action can also flow back and act as references to mainstream society.

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