

Ask an Expert with Dr. Dawn Martin-Hill

Climate Change and Health: Impacts of the Water Crisis on the Physical and Psychological Well-Being of Indigenous Peoples

By Anna-lise Bissola

What is the impact that climate change has on other social determinants of health, particularly in Indigenous communities?

Human health is a reflection and manifestation of the natural world. Indigenous Knowledge (IK) which includes Traditional Ecological Knowledge (TEK) highlights the connection between climate change, water, health, and food security, which are directly linked to wholistic well-being of community is critical. Indigenous Peoples carry disproportionately higher health burdens than the general population, and this is especially the case for those who live on-reserve. These disparities are linked with and compounded by water and food insecurity, negatively impacting chronic conditions (such as diabetes), and day-to-day life events such as home births, managing infection, menses, wound care, and managing mental health stressors.¹ Despite improved access to health services,² inequalities persist in daily living (e.g., running water, toxin exposure, contaminated game, substandard housing) and at broader scales (e.g., forced sterilization and youth suicidality).³

Specifically, how do drinking water advisories in Indigenous communities impact the physical and psychological wellbeing of community members?

The burden of accessing clean water and sanitation heightens with sex and gender, impacting physical and mental health disparities of vulnerable populations, such as young mothers.⁴ Research published between 2000 and 2015⁵ on water and health in Indigenous communities in Canada found reports of birth defects, obesity, anxiety and depression, heart diseases, liver diseases, kidney problems, neurological problems, immunopathology, cancers, thyroid conditions, and infant mortality in connection to low-quality water.

Requests to the federal government through Health Canada revealed that neither Health Canada, Statistics Canada, nor Indigenous Services Canada keeps data on deaths and illnesses resulting from contaminated water in Indigenous communities.⁵ Within Canada, Indigenous people have frequently been victims of environmental racism.⁶ A UNU-CRIS article from United Nations Climate Change COP 26 Conference indicated that “loss of nature, species, ecosystems, and landscapes can bring on ‘ecological grief’ as it influences the way of life, cultural beliefs and can steer anxiety and sadness related to anticipated uncertainty of future and identity”.⁷ Ecological grief is an emotional response (sadness, depression, and anger) to the past and present losses among the ecosystems, landscapes, loss of environmental knowledge and connection with the land, as well loss of culture and identity.^{8,9}

What do you feel is the best strategy to achieve water security/clean water access in Indigenous communities? How can other communities support Indigenous scholars and activists to improve water quality and availability?

The natural world is declining at a faster rate than any time in human history according to the UN IPCC Report ... *When Indigenous people managed to remain in control of their land their environment and well-being thrived...accelerating and unparalleled loss of biodiversity poses a “direct threat” to people living in all regions of the world...*¹⁰ Sustaining reciprocal relationships with the natural world, spiritual world, and community is foundational to Indigenous ways of knowing. A Six Nations study¹¹ found altered length of the growing season and increasingly warm and wet climate trends impacts groundwater recharge rates and increase the strain on surface water quantity and quality.

Mental health conditions impacted by climate change, including depression, anxiety, bipolar disorder, and post-traumatic stress disorder, were found within households correlated with the reliance on bottled drinking water and the presence of *E. coli* in tap water.¹² Culturally informed solutions include early supports¹³ and cultural initiatives that underscore IK gender teachings on roles and responsibilities.²⁰ Ecological grief brought on through natural disasters or indirectly through the stress and loss of food supply, displacement, and loss of homes due to climate change is rising.^{9,14,15} While one-third of the Canadian population reports moderate to high levels of psychological distress, this rate increases to nearly half when considering First Nation (FN) Peoples living on-reserve, due to personal and interpersonal trauma, compounded by intergenerational community trauma, and the challenges of environmental stewardship responsibilities. As observed by the global International Climate Change Panel (ICCP) that concluded: *Indigenous people, comprising less than 5% of the world's population, protect 80% of global biodiversity. At least a quarter of the world's land area is owned, managed, used, or occupied by Indigenous peoples and local communities. The impact of development on their ecosystem has a direct impact on Indigenous livelihoods.*²²

Furthermore, from a UN Department of Economic and Social Affairs policy brief “...*the need to promote dialogue among Indigenous peoples, local communities [and] scientists ... to enable co-production of knowledge and sharing of sustainable strategies to overcome risks and strengthen resilience to climate change*”.¹⁹ There is a need to predict future water availability and co-develop local culturally relevant solutions to water and wastewater management. Science has much to learn from Indigenous adaptability as a model for climate change and water remediation. Indigenous resilience has demonstrably improved mental and physical health.²⁴ Indigenous knowledge is recognized as a protective factor health, relational interconnection, and interdependence. Health and culture are interconnected to their lands. Chandler and Lalonde^{16,17} note that individual health and cultural continuity are strongly linked, such that FN communities that succeed in taking steps to preserve their heritage and culture are dramatically more successful in insulating their youth against the risks of suicide.^{18,23,25} Land and water back would be a great start to protecting human health and biodiversity.



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