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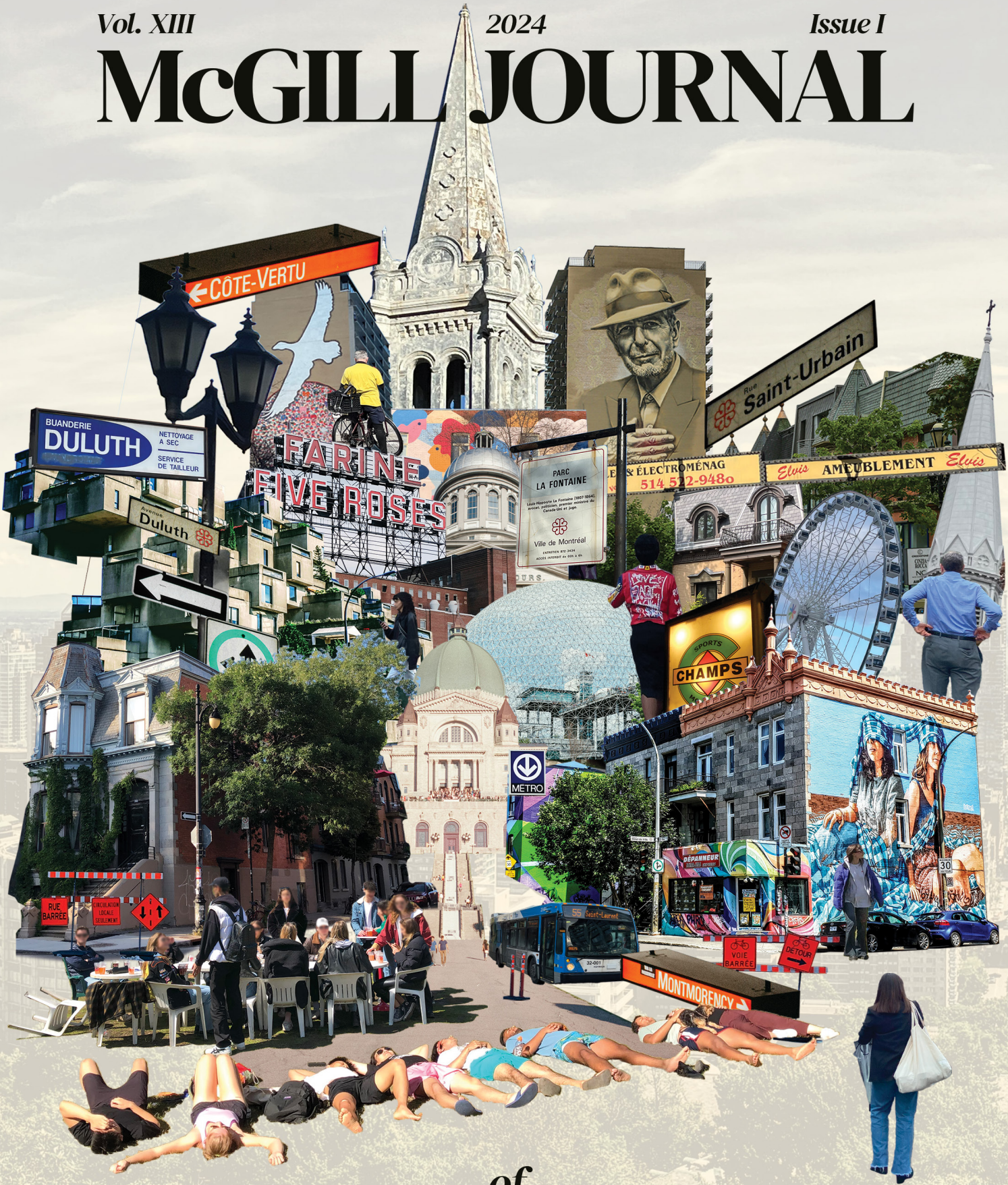

The Global in Local

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In celebrating the diversity of our communities and world, we are empowered to find collaborative solutions and strategies to uplift one another and promote the right to good health for all.

McGill University is situated on the traditional territory of the Kanien'kehà:ka, a place which has long served as a site of meeting and exchange amongst nations. We recognize and respect the Kanien'kehà:ka as the traditional custodians of the lands and waters on which this journal was produced.

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Foreword

Dear Reader,

We are pleased to present to you Volume XIII of the McGill Journal of Global Health. Originally founded in 2011, the journal seeks to provoke debate and reflection about global health by presenting articles and research on diverse health topics. Since the creation of the journal thirteen years ago, we have seen the discussions around global health encompass more dimensions of health and well-being. The need for health equity demands that we engage critically with global health research more than ever. Through these dialogues, we hope to encourage the spirit of empowerment, collaboration, and community that is so vital to dismantling structures of inequity.

Volume XIII shares thoughtful insights into the widespread impacts of climate change on coastal communities and the responsibilities of healthcare professionals in ameliorating climate change. It also explores the value of harm reduction in supporting people who use drugs. This volume prompts reflection on the power asymmetries of the global order and the consequences they may have on population health. Take, for example, the pertinent healthcare system issue of nurses from low-and-middle-income countries leaving to work in high-income countries, and the need for ethical, community-led, and collaborative humanitarian aid during emergencies. Together, these articles highlight the complex and interconnected structures which shape health inequities worldwide and the need for collective, sustainable action across the globe.

We would like to acknowledge the support of McGill Global Health Programs in developing and sustaining this journal. We would also like to share our gratitude for Stéphanie Laroche-Pierre and Kelechi Anyawu, whose dedication and support has been crucial to the journal's success this year. Finally, we wish to thank all the peer reviewers who offered their invaluable insights and time in supporting student research, and the authors for their excellent writing, patience, and dedication.

We thank you for taking the time to read and support the culmination of the hard work of everyone involved. We hope you enjoy!

Sincerely,
The MJGH Editorial Board (2023-2024)

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Alua is in her second year of the Master of Science in Family Medicine program with a concentration in Global Health. Her thesis research focuses on women's health in the context of global development. In addition to gender and health, she has interest and experience in Indigenous health, health policy, and ethics. Alua is passionate about critical and equitable engagement with global health research and promoting equity across the determinants of health and well-being.

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Passionate about public health, epidemiology, and clinical research, Rada Rusu is a Master of Science in Epidemiology Candidate within the Department of Epidemiology, Biostatistics, and Occupational health. She has industry experience working with a variety of infectious diseases as well as within the maternal fetal medicine and maternal health spaces. Rada is also fascinated by topics concerning social epidemiology, and the One Health principle, primarily the intersection of human, animal, and environmental health. In her spare time, Rada is an avid hiker, canoer, and camper. She is also a huge animal lover, and enjoys spending time with her dog Bruno!

Cal Koger-Pease

Cal is a second year PhD student in Experimental Medicine researching vaccine development for schistosomiasis. They did their undergraduate degree at McGill as well in Microbiology and Immunology. In the field of global health, Cal is particularly interested in neglected tropical diseases, and infectious diseases in general. Outside of school, they play water polo and love exploring the city.

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Raphaela is a Master's student in Family Medicine. Her research interests include health equity and health promotion interventions, specifically the impact of varying levels of health literacy on health outcomes. Her undergraduate degree in Kinesiology is what first inspired her to pursue studies in health research. Raphaela is curious about how the accessibility features and infrastructure of global built environments impacts the quality of care and subsequently care outcomes.

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Vincent is an Honours Neuroscience student with a passion for global health. His interests are in circumpolar health, Indigenous health, and healthcare access. Vincent has experience in community-based health research, particularly with Inuit communities in the Northwest Territories. He is eager to broaden his understanding of health equity and global health research through his involvement with MJGH this year. Outside of work, Vincent enjoys rock climbing with friends, playing the guitar, and repairing bicycles.

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Maira is currently in her first year of the Master of Science in Public Health program. Her primary area of interest is in global and public health ethics and understanding the health consequences that public health policies may impose on marginalized populations. Her interest in global health stems from her passion for advancing health equity through an interdisciplinary lens. Maira has actively participated in various research projects that bridge the gap between qualitative and quantitative methods. Outside of school, she loves making Spotify playlists and watching Netflix and Formula 1.

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Zahra is currently pursuing a Master's degree in Bioresource Engineering in Integrated Water Resource Management at McGill University. She recently moved to Montreal after obtaining her BSc in Urban Forestry with a minor in Landscape and Recreational Planning from The University of British Columbia. She is very excited to be a part of the journal as it presents a chance to explore the intersectionality between health and sustainability, more precisely water. She is originally from Senegal which makes her very passionate about exploring the different ways in which the Global South can be involved in important conversations revolving around global health and environmental sustainability.

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The Impact of Flood-Related Malnutrition in Guyanese Lokono-Arawak Coastal Communities

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Abstract

This paper explores the critical health impact of flood-related malnutrition, contending that it poses a significant concern due to its pervasive influence on the global population and enduring consequences across the life course. The analysis delves into the intricate disease pathways forged by malnutrition, emphasizing its role in elevating susceptibility to waterborne and vector-borne diseases. Through this investigation, the understanding of the interconnected nature of malnutrition and its intricate relationship with adverse health outcomes is strengthened, particularly in the context of climate change, environmental justice, and health. This research sheds light on the resilience of indigenous and coastal communities, showcasing their ability to mitigate the effects of flood-related malnutrition through alternative livelihoods.

Keywords: climate change, flooding, malnutrition, Indigenous health, Sustainable Development Goals (SDGs), climate adaptation

Introduction

Climate change is one of the most serious challenges posed to humanity in the present time (1). As global temperatures continue to rise, many cities around the world are suffering the consequences that climate change poses to infrastructure, communities, and populations (1). This includes an increased frequency and severity of natural hazards, such as flooding, that affect over 38% of the world's population (2). While some cities are well-equipped to cope with flooding, many are not, particularly those in low-and-middle-income countries (1). There is a shortage of international studies that examine the link between increased precipitation, flood-related malnutrition, and climate change adaptation in Indigenous South American communities. This paper will explore the Lokono-Arawak community's vulnerability to flooding and related health impacts in Guyana.

This paper will focus on the health impacts of flood-related malnutrition, which results from inadequate access to sufficient and nutritious food during or after flooding events. This health concern is considered to be the most serious repercussion of flooding because it exacerbates the socio-economic inequities already experienced by impoverished coastal communities, including food insecurity, unemployment, and financial hardship (1). Malnutrition is a primary pathway to other health challenges and is related to multiple intersections of physical, social, and developmental issues across the life course (3). Due to the nature of this deficiency, malnutrition can lead to a greater risk of injury, displacement, morbidity, and mortality in the Guyanese Lokono-Arawak coastal community (4). Following flood events, coastal farmland and crops are often destroyed, leading to a scarcity in food and other basic necessities (1). This disproportionately affects the Lokono-Arawak people who rely on sustenance farming to survive (2). The resulting scarcity of food can exacerbate tensions within this community, leading to violence and injuries over land, water, and resources (4). These socioeconomic conditions can push individuals to seek refuge in neighboring communities in hopes of safety and a better life (4). To fully understand the complexity of flood-related malnutrition, we must first examine increased precipitation, the specific climate driver that leads to this environmental condition.

Flooding in Guyana

Direct Impacts

Anthropological climate change over the past millennia has intensified the Earth's hydrological cycle (5). As water temperatures of oceans have risen over time, there has been a subsequent increase in sea levels and the amount of water

evaporating into the air (6). Once humid air moves over cooler land or converges with storm systems, it produces more intense precipitation in South America (6). Such environmental changes have exposed millions of people to an increased risk of flooding (6). These effects are particularly pronounced in Guyana, a country located on the low Coastal Plain, approximately 1.5 meters below sea level (1). Flooding is among the most prevalent natural hazards worldwide and can have a devastating impact on infrastructure and individuals' livelihoods and health (1). Heavy rainfall and storm surges can lead to extensive weather-related morbidity and mortality, especially in lower-income countries where infrastructure systems, such as drainage and flood protection, tend to be less developed (5). During floods, heavy and sharp objects can move at high velocities through floodwater (7). The forces associated with hydrological pressure can uproot trees, electric power lines, wild animals, and buildings, leading to a range of injuries (5). Contaminants found within flood water such as sewage, industrial hazardous waste, and carcinogenic compounds can lead to complications such as injury, infections, poisoning, and a rise in communicable diseases (7). The combination of these hazards can lead to immediate health impacts such as drowning and a loss of human life (5). However, they can also lead to a multitude of indirect health impacts contributing to food insecurity. These consequences will be explored in the remainder of the paper.

Indirect Impacts Leading to Food Insecurity

Malnutrition is a consequence of food insecurity, which refers to the lack of availability and/or ability of populations to access food of adequate quality and sufficient quantity. Rainfall-induced flooding and waterlogging can have a significant impact on communities that rely on agriculture as a primary source of food and income (8). In Guyana, most coastal populations live below the country's poverty line (1). Since the majority of these communities are located in remote areas, far from the national capital of Georgetown, many do not have access to grocery stores or fresh produce (9). In the rare cases where produce is available, it is sold at unaffordable prices due to the cost of transportation and importation (9). As a result, individuals living in these areas are forced to rely on their own production of fruits, crops, meat, eggs, and dairy to feed their families, known as subsistence farming (4). However, increases in the frequency and intensity of flooding have led to increased rates of crop loss, contamination, soil erosion, debris deposition, and invasive species, impacting the communities' ability to grow their own food (6). In addition to the direct rushing effect of floodwater, the submergence of crops creates complex abiotic stress in plants, including oxygen depletion, reduced light availability, and altered chemical and nutrient characteristics of soil (8). The combination of these physical and chemical alterations can substantially reduce farm stand as well as the yield and growth of crops (8). Under current climate conditions, there has been a significant reduction in crop yields due to excessive rainfall, which has negatively impacted Guyana's rice supply and created food insecurity (4). While this environmental hazard is prevalent in South America, it is also a global issue that affects much of the world's population that lives in coastal regions. There is a high proportion of individuals who participate in subsistence farming (8). The loss of farmers' livelihoods, as well as a lack of alternative food options, can exacerbate conditions of poverty within these populations (9). This can reduce coastal communities' ability to financially mitigate the damage caused by flooding (1).

The mass destruction and degradation of wildlife habitats by flooding can also have detrimental effects on Indigenous communities' livelihoods (8). In the case of the Lokono-Arawak Amerindians, the destruction of aquatic and terrestrial ecosystems can affect their ability to continue traditional ways of life, including hunting and fishing (10). Wild meat is an important source of protein, fat, and micronutrients for Indigenous people (10). Prolonged flooding and high-water depths can impact animals' ability to migrate from submerged areas, most seriously affecting mammals that have a limited ability to swim, such as deer, wild boar, and pacas (11). The short-term variation in seawater salinity due to the mixing of salt and fresh water can create physiological challenges for aquatic organisms, leading to the mortality of many important fish species like the gillbacker sea catfish, dorado, and Atlantic tarpon (6). These events can force families to rely on highly processed, non-perishable foods (4). This can result in a loss of traditional activities, languages, and place-based ontology that is intricately connected to the land (9). These environmental changes thus lead to culture stress, a loss of culture, and community identity (9).

Malnutrition

Impacts of Malnutrition on the Lokono-Arawak Community

The collapse of traditional food systems significantly increases the risk of malnutrition in the Lokono-Arawak community, disproportionately affecting pregnant women, children, and youth (12). Malnutrition occurs when individuals do not consume enough essential nutrients or when nutrients are excreted more rapidly than they can be replaced (13). A lack of access to traditional foods can contribute to a progressive decline in health, reduced cognitive and physical function

status, and increased mortality (14). Energy and nutritional vulnerability are most pronounced during pregnancy and lactation (13). The consumption of highly processed diets lacking in key nutrients such as iron, calcium, folate, or zinc can lead to adverse pregnancy outcomes such as pre-eclampsia, eclampsia, anaemia, hemorrhaging, preterm delivery, and death in mothers (15). These conditions can increase infants' risk of fetal growth restrictions, low birthweight, wasting, and developmental delays, having profound impacts on their lifelong health (16). Furthermore, maternal malnutrition can lead to a reduced production of breastmilk, preventing infants from receiving lifesaving antibodies from their mothers (15). Malnutrition is particularly important in young children, as they require more frequent and high-quality meals (16). Young bodies absorb nutrients from food at a faster pace than older bodies, especially during puberty when large growth spurts and bodily changes occur (15). Growth failure and micronutrient inadequacy during childhood and adolescence can cause stunting and create a higher risk of chronic diseases such as diabetes mellitus, coronary artery disease, and hypertension (13). Long-term, malnutrition in children can increase their susceptibility to infectious diseases, morbidity, and mortality, negatively impacting the Lokono-Arawak's population demographic.

The repercussions of stunting and micronutrient inadequacy extend beyond immediate health concerns, impacting the Lokono-Arawak community's collective well-being (17). These nutritional deficiencies can hinder the intergenerational transmission of cultural knowledge and practices essential to the Amerindian identity. An example of this is the nine-day Lokono-Arawak puberty rite of passage, where youth engage in a variety of practices including fasting and the receipt of traditional body tattoos (17). These rituals symbolize youth's physical and mental fortitude, marking their transition into adulthood (17). The completion of this ritual is essential for youth to earn the right to learn and be involved in cultural, traditional, and spiritual ceremonies (17). Thus, flood-related malnutrition can impact the continuity of Lokono-Arawak culture and heritage, as well as impacting affected individuals' status and acceptance in society.

Waterborne Diseases

In Guyana, the Lokono-Arawak people rely on local rivers, wells, and ground aquifers to access cooking, drinking, and bathing water (10). Similar to other coastal communities, the Lokono-Arawak people lack access to potable water, heightening their vulnerability to waterborne diseases (10). During periods of severe flooding, disruptions to nearby communities' wastewater treatment and water filtration can contaminate Amerindian's supply of drinking water. The contamination of water created by floating debris, chemicals, and sewage can expose the Lokono-Arawak to dangerous pathogens (4). Such exposure, compounded with flood-related malnutrition, can further increase the Lokono-Arawak's susceptibility to diarrheal and gastrointestinal illnesses (18).

Under strenuous environmental conditions, malnourished bodies have a reduced ability to mount adequate protective responses against infectious agents, particularly among young children (19). According to the Guyana Ministry of Health, nearly 30% of deaths among children under five are attributed to diarrheal diseases, due to their small stature, high metabolic needs, and area-to-weight ratio (20). During the first few years of life, infants undergo critical periods of immune development, heightening their vulnerability to infections and mortality (19). Consequently, Lokono-Arawak children, particularly those suffering from flood-related malnutrition, are at an elevated risk of contracting cholera (20). Left untreated, this waterborne illness can be fatal within a few hours in previously healthy people (21).

Flood-related malnutrition also plays a role in exacerbating the prevalence of leptospirosis cases, colloquially known in the Guyanese community as the "flood disease" (22). Guyana is particularly susceptible to leptospirosis epidemics, witnessing numerous outbreaks during each rainy season (20). While the majority of infections are mild or subclinical, leptospirosis can result in life-threatening symptoms and even death, with mortality rates ranging from five to fifty percent (20). The persistence of leptospires in wild and domestic animals further complicates the situation, significantly impacting the health of the Lokono-Arawak people who rely heavily on subsistence hunting and fishing for survival (22).

Infectious Diseases

Malnutrition can increase individuals' vulnerability to a variety of vector-borne diseases, including yellow fever, West Nile virus, dengue fever, Zika virus, and malaria (16). In Guyana, the combination of malnutrition and flooding conditions can have an additive effect on the prevalence and severity of malaria in the Lokono-Arawak community (4). Recent studies have found that the burden of malaria is disproportionately related to nutrient deficiencies in zinc, folate, vitamin A, and iron, as well as an underweight status in children ages 0 to 4 years old (13). Malnutrition has also been linked to recurrent infections of malaria which can lead to permanent tissue damage, central nervous system damage, dysregulated immune responses, disruptions to the blood-brain-barrier, and persistent health complications following the clearance of Plasmodium parasites

(3). In situations when malaria is not treated promptly, it can lead to seizures, kidney failure, respiratory distress, coma, and death (16). Malnutrition and infections often act synergistically to increase morbidity and mortality (3). Infections such as malaria can intensify the deficiency state of malnourished individuals, disproportionately affecting children, pregnant women, and immunocompromised individuals (19). An increase in stagnant pools of water after floods can expand the habitat availability of disease vectors such as mosquitoes, increasing their geographic and seasonal distribution (7). Coastal Guyanese communities' practice of collecting bathing water in buckets can increase transmission rates of malaria, allowing disease carrying Aedes aegypti mosquitos to infect a larger number of people (10). Collectively, these changes in coastal communities can contribute to an increased risk of zoonotic transmissions and epidemics.

Sustainable Solutions

In upcoming years, the impact of flooding and flood-related malnutrition is likely to play a role in the displacement of vulnerable populations locally and internationally (4). However, there are proactive and sustainable mitigation strategies that can increase coastal communities' resilience and preparedness to deal with this climate challenge. The government of Guyana can develop a climate-friendly national plan to fund green coastal defense projects, such as investing in the implementation and management of mangrove forests (23). Mangroves play a crucial role in mitigating flood impacts by slowing water flows, reducing erosion, and encouraging sediment deposition (24). Strategically positioning mangrove belts around coastal areas, farmland, and wastewater facilities can markedly diminish the risks of flooding-related crop damage, malnutrition, and disease proliferation (23). Further, another mitigation strategy involves developing community-based flood preparedness and response plans with local stakeholders, such as the Lokono-Arawak people (25). These plans should include early warning systems, evacuation routes, and emergency shelters to minimize the impact of flooding on vulnerable populations (25). Looking forward, it is imperative for the Guyanese government to seek collaborative partnerships with international organizations to support climate adaptability and resilience efforts in coastal regions, including knowledge exchange, technical assistance, and financial support (26). By adopting a multi-faceted approach that combines ecosystem-based solutions, infrastructure development, community engagement, and capacity building, coastal communities can mitigate the adverse impacts of flood-related malnutrition.

Conclusion

This paper has argued that flood-related malnutrition is the most concerning health impact of flooding because it impacts much of the world's population and can have significant impacts across the life course. Throughout this review, special attention was paid to the disease pathways created and exacerbated by malnutrition, highlighting its ability to increase individuals' susceptibility to waterborne and vector-borne diseases. The exploration of this subject has addressed existing gaps within the literature on the Lokono-Arawak community in Guyana, providing a more holistic understanding of how climate change, environmental justice, and health are interrelated through geographic, historical, and political factors. This study demonstrates the resilience of Indigenous and coastal communities to mitigate the impact of flood-related malnutrition by engaging in alternative livelihoods such as flood recession farming, dry season farming, and petty trading. Despite common misconceptions, impoverished populations are far from powerless. They are resourceful and capable of making significant lifestyle changes to adapt to their environment conditions. This paper aimed to address how climate drivers such as increased precipitation can impact the socio-economic conditions of communities to widen existing health inequities between the Global South and Global North. Vulnerable populations in low- to middle-income countries are disproportionately faced with the consequences of climate change, despite being the least responsible for it. Future humanitarian and government initiatives addressing malnutrition will need to consider the interrelated relationship between climate change, environmental justice, and health in order to effectively address the needs of minority populations. A greater understanding of these three topics will help countries and communities better prepare for the climate changes predicted in the upcoming century.

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Humanitarian Response by NGOs to the 2010 Haiti Earthquake: Expectations vs. Realities

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Abstract

A rising interest and participation from high-income countries in global health initiatives has been driven by increasing visibility and opportunities such as volunteering with non-profit organizations to provide healthcare. Thus, there must be a conscious effort to avoid further ingraining structures of inequality present in global health. This is particularly important in the context of Haiti's post-earthquake recovery and the role of international aid. This paper examines the impact of international non-governmental organizations (INGOs) on healthcare and maternal mortality in post-earthquake Haiti. Before the 2010 earthquake, Haiti was known as the "Republic of NGOs," yet the INGOs' interventions often proved ineffective. The wake of the earthquake provided an opportunity for progress but resulting efforts from INGOs fell short of expectations. Abuse of power, the exclusion of Haitian-led NGOs from funding, and inefficient project implementation further hindered progress in Haitian healthcare. This paper calls for ethical and equitable partnerships, Haitian-led development, and a shift toward self-sufficiency in international aid initiatives. In conclusion, this paper recommends aligning initiatives with host communities' needs, as well as exploring innovative changes to the healthcare system that most effectively meet Haiti's global health goals.

Keywords: global health, Haiti, foreign aid, partnerships, colonialism, natural disaster, medical emergency, NGOs, INGOs

Introduction

Haiti is known by most people around the world as "the poorest country in the Western Hemisphere," "the backyard of the United States," "the failed state of the first Black republic," examples of an extensive list of derogatory nicknames (1,2,3). Others prefer to call it "La Perle des Antilles" because of its natural beauty and the riches found throughout Haiti's lands and waters (4). The rise in popularity of global health as a practice has led to scholars and clinicians from high-income countries (HICs) looking for global health "opportunities." Said opportunities primarily involve professionals from HICs working with international organizations in low-and-middle-income countries (LMICs) to provide aid, though these opportunities are frequently harmful to the communities they intend to help. We must examine what happened in Haiti following the January 2010 earthquake to avoid repeating the same mistakes and emphasize the need for respectful and equitable partnerships with collaboration between Haiti and foreign aid organizations. To analyze the effectiveness of the relief efforts carried out after the earthquake in Haiti, this paper will review the relationship between Haiti and foreign aid such as aid provided by international non-governmental organizations (INGOs) prior to the earthquake, the expectations of INGO presence in Haiti, and the realities that ensued after the earthquake, specifically focusing on maternal and child health.

Background

Before exploring the influence and consequences of INGOs acting in Haiti, it is essential to know the country's colonial history and socioeconomic context. Prior to its independence, Haiti, formerly known as Saint-Domingue during its time as a French colony, supplied almost half of Europe's coffee and sugar (4). This was possible due to the unpaid labour of imported enslaved Africans to the island and their descendants (4,5). The former French colony gained independence in 1804 following the first successful slave revolt (4). The formerly enslaved people had successfully defeated the French armies at a point in time when colonialism was at its peak (4). The leaders of the Haitian revolution returned the Indigenous name of "Ayiti" to the land they reconquered from the

colonizers, emphasizing their new independent identity from European imperialism (4). After losing its most prolific colony, France imposed an independence debt on Haiti consequently leading to economic decline: a form of compensation for the lost revenues of white colonizers equivalent to 21 billion dollars today (6). Haiti paid this debt from 1825 to 1947 (6). The US further contributed to Haiti's decline through occupation and political manipulation throughout the twentieth century, depriving Haitian peasants of their lands and agricultural work, leading to mass emigration of Haitians (7). These are but a few instances where greater foreign powers have been at play to undermine Haiti's development and deepen its economic and political dependence on HICs such as the United States, France, and Canada. The "failed state" of Haiti did not fail alone; it was designed, shaped, and manipulated to uphold the social inequities seeded by colonialism, slavery, white supremacy, US imperialism, international support for past dictatorship and collaboration of the elite populations and the bourgeoisie (8).

Foreign Aid in Haiti

Before the earthquake, Haiti was already known as the "Republic of NGOs" (9), Global health practice in Haiti, referring to medical aid provided by foreign governments and organizations, became popular in the 1990s, and by 2009, there were thousands of INGOs involved. They had, and continue to have, omnipresent influences on Haiti's healthcare systems (9). Medical missions are a common practice of foreign aid intervention in Haiti that have been criticized for being ineffective and undermining the public and private health systems (8,9).

While emergency relief INGOs are essential for their ability to provide rapid aid, their short-term interventions often result in challenges for long-term development. For instance, temporary clinics set up by these organizations may provide immediate medical assistance, but their departure often leaves local communities unchanged, with persistent health issues and a void that is difficult for the local government to fill without proper preparation or coordination with the intervening organization (2,9). An example of such a void was seen in 2008 after hurricanes hit Gonaives in northern Haiti. Médecins Sans Frontières (MSF) erected a camp hospital but insisted on using their own staff, displacing the Cuban doctors already present. Once the state of emergency had passed and MSF departed, concerns arose regarding who would ensure the ongoing provision of healthcare services (2). However, it is important to recognize that MSF provides emergency medical humanitarian care, their mandate ends once the emergency is under control. Although their interventions were successful based on their own metrics and goals, the communities remained without adequate healthcare infrastructure (2). Despite this, organizations such as MSF, among others, would report that their intervention was successful to their stakeholders to justify the annual trips as well as the funds disbursed (9). The evaluations of these interventions are typically carried out by the same organizations whose interventions are being implemented – incentivizing organizations to report positive outcomes, resulting in biased reporting.

These evaluations use quantitative metrics with specific and limited indicators that do not consider the context and nuance essential to understanding health outcomes (9). This explains, in part, why little to no progress had been made in the country despite the increase in foreign aid and funding from INGOs to Haiti since the 1980s until the earthquake in 2010. The population continued to experience extreme poverty; thus the government could not sustain its own healthcare needs, resulting in a mass exodus of healthcare workers, and Haiti was still dependent on the "help" of high-income countries prior to the 2010 earthquake (2,9). However, it is important to mention that it is difficult to evaluate the impact of an intervention on the health sector because few health indicators, especially at a national level, can be directly linked to a specific intervention. This would require epidemiologic studies which have yet to be done. According to the World Health Organization (WHO), "health systems that can deliver services equitably and efficiently are critical for achieving improved health status" (10). This suggests that global health interventions should prioritize enhancing health systems and strengthening the building blocks of health systems while supporting nations in attaining sustainable gains. According to the WHO, the building blocks of health systems are service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership and governance (10). Before the earthquake, Haiti already had a fragile healthcare system due to extreme poverty, weak infrastructures, limited access to health centers and medicines, and a shortage of personnel and facilities, among other challenges (2,7,8). It is important to note that the impact of the earthquake compounded pre-existing challenges, making the recovery and reconstruction efforts even more difficult for Haiti.

Haitian Expectations of NGOs

The earthquake that struck the country on January 12, 2010, propelled Haiti into the global spotlight. International aid workers, particularly those working with NGOs, came to Haiti by the thousands (9). Everyone wanted to help and donate

through various means, including monetary donations, shipments of clothing and baby products, medicines, canned food, and more. The increased visibility of the hardships Haiti was experiencing held the promise of a new beginning. It was an opportunity to build a new Haiti with better infrastructures and strengthening governance and institutions to reduce the country's vulnerability to future disasters. It was also an opportunity for INGOs to collaborate and form partnerships with Haitian communities to build long-term sustainable development and to provide competent and comprehensive aid. It is safe to say that the expectations held by Haitian people following the earthquake were not met (11).

The Reality of Foreign Aid After the 2010 Earthquake

The biggest failure of foreign aid in Haiti following the earthquake is the cholera outbreak that began in the fall of 2010 after the arrival of United Nations (UN) personnel (12,13). It is important to note that cholera had never been documented in Haiti prior to this outbreak. Hundreds of thousands of Haitians became unhoused after the earthquake. Many had no other option but to seek refuge in the tent camps set up by international relief organizations or pack themselves into overcrowded and crude shelters (9,13). These environments were prone to infectious diseases due to the lack of sanitation infrastructure (9,13). However, the cholera outbreak that began nine months after the disaster did not emerge from the camps but appeared in an unlikely area in Haiti's Central Plateau (9,13). In 2018 it was estimated that the outbreak resulted in 10,000 deaths and over 800,000 infections (12).

Haitians are still dying from cholera today. These are largely preventable deaths as treatments such as intravenous hydration and antibiotics are widely available in wealthy countries (14). It would be unacceptable for someone to die from cholera in a HIC, yet the number of Haitian casualties due to cholera continues to be overlooked by the international community. This is a failure of foreign aid, and more specifically, it is a failure of the UN. Initially, the source of the outbreak was unknown. However, officials from the WHO downplayed the significance of determining the source or cause of the outbreak after the focus was shifted to the United Nations Stabilization Mission in Haiti (MINUSTAH) base of Nepalese origin located in the region where the outbreak had taken place (13). The UN denied their involvement in the cholera outbreak for several years despite the overwhelming body of evidence suggesting that the peacekeepers had contaminated the Artibonite River due to negligence occurring over several years (12). Despite Haitians' public outrage and actions against the UN and their personnel, the global community ignored their concerns. The UN only acknowledged its involvement years after the initial outbreak, emphasizing that they were not obligated to provide any form of reparations to anyone affected by the deadly virus they brought to Haiti (15). The demonstrated lack of accountability and responsibility by the UN is unfortunately representative of most NGOs acting in Haiti; in that they are not accountable to Haitians but instead accountable to the hands support them financially. The reluctance or apparent lack of urgency among WHO and UN officials to identify the source of the cholera outbreak, under the guise of avoiding attributing blame, is indicative of a failure to acknowledge responsibility and ensure accountability (9,12).

There were also many reported cases of foreign aid workers, particularly those associated with MINUSTAH, perpetrating sexual exploitation and abuse against local communities (16). Foreigners acting under INGOs fathered children and abandoned them (13). Again, despite the Haitian population's outrage, little to nothing has been done to hold perpetrators accountable for their actions. Foreigners abusing their powers and using Haitian communities for their own personal gain continues to deepen the mistrust that Haitians have towards foreigners. It only emphasizes the existing sentiment that Haitians hold against nations like the United States and France, who have continuing histories of exploitation.

INGOs failed in Haiti due to the lack of collaboration and coordination with the Haitian population. Between 2010 and 2011, two billion dollars USD were raised for immediate relief, of which less than one percent went to the Haitian government (17). International aid directed to the Haitian government has been notably limited. Donors exhibit reluctance in providing funds directly to the government due to perceptions of its lack of capacity to effectively manage finances and concerns regarding corruption (17,18). As a result, a significant portion of funds is channeled through non-state actors as donors tend to place greater trust in them, as has been the case for decades prior to the earthquake (16). The little funding that the Haitian government received was subject to harsh conditionalities and used as a mechanism of control by international donors who set their own priorities which do not always correspond to the country's needs (18). Any government acting under such limitations is extremely likely to fail its population.

Haitian-led NGOs were also excluded from these funds as 99% of the money raised for the earthquake remained in the hands of large INGOs, some UN agencies, private contractors,

the Red Cross, and US government agencies, to name a few (17,19). One would expect that the billions of dollars raised after the earthquake would result in significant change in a small country such as Haiti, yet little has changed. The money appeared to be diminished in a "trickle-down" effect as the funds were going through multiple layers of subgrantees before reaching the intended organizations responsible for implementing projects on the ground, projects which were often never implemented (9, 17). A myriad of projects were developed by undoubtedly highly skilled people from HICs that surely had Haiti's best intentions at heart but, regrettably, were not applicable within the Haitian context, highlighting another shortcoming of INGOs. Instead of financing people or initiatives unfamiliar with the needs of Haitian communities, thereby causing significant harm, INGOs should have collaborated with Haitians either through the Haitian government or by providing assistance to existing Haitian initiatives. INGOs would have seen a better return on their investment, as exemplified by organizations like Konbit Sante, which is generally well-perceived by the local community because they have a collaborative approach where they train and employ Haitian healthcare workers (9). Pierre Minn, an Associate Professor in the Departments of Anthropology and Social and Preventive Medicine at the Université de Montréal, describes the experiences of medical staff with foreign aid in his book *Where They Need Me* and notes that Konbit Sante is nearly always mentioned first by the staff. It is also referred to as the favoured partner of the Hôpital Universitaire Justinien, a significant hospital in Cap-Haitien, by its director. Konbit Sante is a US-based INGO acting in Cap-Haitien and works in partnership with Haiti's Ministry of Health and Population (MSPP) (9). Many international organizations prioritize short-term relief efforts, often neglecting their sustainability. In contrast, Konbit Sante prioritizes capacity-building initiatives aimed at empowering local actors and institutions and focuses on strengthening the Haitian healthcare system (9). Rather than directly administering treatments or having consultations with patients, Konbit Sante prioritizes other things such as infrastructure projects, logistical support for hospital leadership teams, and the education and training of Haitian clinicians (9). This approach enables Konbit Sante to contribute to the long-term sustainability of the healthcare system in Haiti, a goal that many international organizations may not prioritize due to their temporary relief-focused mandates. There lies the true success of an organization responding to the community's needs by including them in every step of a project's implementation.

After the earthquake, an estimated 3,000 to 10,000 unregistered INGOs were acting in Haiti (9). These organizations acted as parallel independent states setting up and imposing their own rules, causing the disempowerment of local actors, and weakening existing structures and organizations, all without producing any meaningful sustainable change (8). The problem is not necessarily the number of INGOs, but the fact that there was no collaboration or coordination between the organizations and the Haitian population. Effective collaboration entails engaging with local communities, understanding their needs, and involving them in decision-making processes. At the very least, consultation with the MSPP is necessary. Ideally, it would entail consultation with community healthcare workers to identify where the needs are and including their perspectives in designing the initiative. Unfortunately, these INGOs operated inefficiently, failing to prioritize strengthening the already weakened health systems in Haiti, resulting in temporary and superficial changes, and an apparent discrepancy between the inputs of global aid efforts, financing, and the observable outcomes.

Maternal Mortality

It is important to evaluate the impacts of INGOs on maternal mortality following the earthquake since both the Millennium Development Goal 5 and the Sustainable Development Goal 3.1, set by UN Member States (20), aimed to reduce the maternal mortality rate globally. However, little research has been done on maternal health in Haiti since the earthquake.

The Three Delays framework developed by Thaddeus and Maine (18, 21) can help improve understanding of maternal health in Haiti. The delays that contribute to maternal mortality are (1) the delay in deciding to seek medical care, (2) the delay in reaching the appropriate healthcare facility, and (3) the delay in receiving adequate care. Rapp explains that while this framework is helpful, it does not fully explain the dynamics and hierarchy between MSPP, NGOs, health practitioners and pregnant people, which Rapp describes as "shadow delays" (18). As such, "global health practitioners often opt for technical solutions" but do not take into consideration the "shadow delays" during the decision-making process thereby preventing the amelioration of maternal mortality (18, p. 8-9).

Several factors influence the Three Delays such as the lack of transportation, especially in rural areas. An organization can have the best intentions and set up practice in an already existing Haitian health center and train community healthcare workers. However, if a pregnant person living in a remote area in the mountains lacks transportation to reach the clinic, they are unlikely to make the journey as it will require walking for several hours. Instead, like 70% of women

living in rural areas in Haiti, a mother will give birth at home without the presence of a skilled birth attendant, thereby significantly increasing the risks of complications and death (18). This is only one example demonstrating how technical solutions drafted by INGOs that do not consider all delays, including the influence of contextual factors, and may not deal with problems the host population faces in an efficient manner. It is also why communication with Haitians is essential to understanding their needs. The absence of maternal health research in Haiti, conducted by relevant stakeholders such as local healthcare professionals, international organizations, and academic institutions, can be detrimental to the population. Without a thorough understanding of the situation on the ground and continuous assessments of needs, we cannot ensure that efforts remain appropriate and relevant (22). This can lead to the implementation of ineffective or inappropriate interventions that do not address the root causes of maternal health issues, leaving populations vulnerable to the same issues.

Conclusion

In conclusion, despite the difficulty of qualifying global health interventions as successes and failures for the reasons mentioned above, it is evident that the foreign aid to Haiti from INGOs and the UN after the earthquake was a massive and unforgivable failure. The world failed Haiti. It is of the highest priority for Haitian people to lead their own development, in contrast to a continued influx of INGOs. The Haitian population must initiate actions which are not directed by international institutions, organizations, or Haitian elites. This must be respected by any foreigner wishing to go to Haiti to fulfill their altruistic dreams. The realities that ensued after the earthquake exposed the need for respectful and ethical partnerships and collaboration between the host country's government, local actors, and foreign aid organizations. The goal of international organizations providing aid in any country should be the self-sufficiency of the local populations and to avoid patterns that lead to the dependence of lower-income countries on HICs. Proper research, including social science research and implementation research, should be done by people and organizations looking to implement their projects and initiatives in any community to avoid causing unnecessary harm. This paper's recommendation for anyone in search of global health opportunities is to ask yourself if you are needed, to research if what you intend to do is redundant, and if it is for your own benefit rather than catering to the needs of the host community. Moving forward, health systems research should explore innovative ways in which a healthcare system can incorporate public, private, and community-based methods at the same time – while promoting shared responsibility for meeting ambitious and equitable standards of care, global health goals, and patient satisfaction in all countries worldwide.

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The Neoliberal Globalization of Services Now Includes Nursing: The Exploitation of Low-Income Countries via Brain Drain

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Abstract

In response to rising nursing vacancies, many high-income countries are turning to low-income countries to recruit nurses into their healthcare systems, a process that has exacerbated global health inequities. This review challenges the dominant neoliberal worldview of achieving economic prosperity through a largely unregulated free market at the expense of population health – instead suggesting that high-income country governments should implement alternative local solutions rather than reinforce global health disparities through the exploitation of migrant nurses. In fact, increased nursing vacancies in high-income countries are the result of domestic nurse retention crises, not nurse shortages. The primary drivers of migration of nurses from low-income countries to high-income countries include remuneration, security, career prospects and job satisfaction. The Global South faces a collapse of healthcare systems due to scarcity and maldistribution of nurses, while nurses who relocate face exploitation in their receiving high-income country. The reliance of high-income countries on recruitment of nurses from low-income countries is an unsustainable mechanism for global healthcare.

Keywords: globalization, nursing shortage, retention crisis, health equity, migrant nurses, migrant healthcare workers

Background

High-income countries are recruiting nurses from low-income countries to fill their bedside vacancies. This 'brain drain' of nurses from low-income countries such as Nigeria, India, and Philippines, to higher income countries such as Canada and the United States, has characterized globalization in recent decades. Human capital flight, colloquially known as 'brain drain', refers to the departure of educated, trained health personnel from one country to another in search of better opportunities, such as higher pay, better standards of living, increased quality of life, and more stable political conditions (1). The neoliberal global economy has opened international borders for goods and labour, which now includes nursing. Over the past decade, the World Health Organization reports a 60% increase in the number of migrant healthcare professionals working in high-income countries (2). Additionally, the World Health Organization reports that 81% of the world's nurses work in three regions (the Americas, Europe, and Western Pacific), where only 51% of the of the world's population resides within (2). Unprecedented levels of exodus of healthcare workers, especially nurses, from low-income countries to high-income countries, have created a pressing global health issue with implications for population-level health outcomes. Moreover, the inequities in density and distribution of nursing personnel within low-income countries is exacerbated by this approach to filling nursing vacancies in high-income countries (3). This review explores the main drivers of the migration of nurses from low-income countries to high-income countries and the implications of this phenomenon. The brain drain of nurses is a pressing global health concern and its harms are disproportionately felt by low-income country populations, while also failing to address the root causes of the nurse retention crisis in high-income countries (4).

The Retention Crisis in High-Income Countries

High-income countries are claiming a nursing shortage; however, this issue is more accurately described as a nursing retention crisis (4). A 'nursing shortage' implies a lack of citizens with nursing credentials or too few students registered in the education streams. This is not the case. In Canada, according to the 2021 Labour Force Survey conducted by

Statistics Canada, the number of vacant registered nurse positions increased 85.8% from 2019 to 2021, despite a 2.5% net growth of nurses from 2020 to 2021 (5). There are enough nurses to fill these vacancies, but not enough Canadian nurses willing to work in the poor conditions which characterize many current nursing positions.

A few documented barriers to nurse retention in Canada include unsafe nurse-patient ratios and workplace violence. These are rampant issues in the nursing profession. Unsafe nurse to patient ratios causes reduced quality of patient care as well as documented increased likelihood of patient death, with a patient's odds of dying within 30 days of admission increasing by 7% for every additional patient added to a nurse's workload (6). In terms of workplace violence, the Canadian Federation of Nurses Unions reports that 93% of nurses experienced at least one form of violence at work in the past year, including verbal abuse, physical assault, threats of physical violence, bullying and aggression, and sexual harassment (7). Globally, 59.2% of nurses reported exposure to workplace violence in the past year, defined as any physically or non-physically violent incident where staff were abused, threatened or assaulted in circumstances related to their work (8). Taken together, barriers to nurse retention are the result of a poorly maintained health system in Canada.

Moreover, the nurse retention crisis in high-income countries is projected to worsen. Intentions to leave the nursing profession are at an all-time high. For example, the 2022 United States National Nursing Workforce survey found that 100,000 (2.8%) nurses have left positions since the COVID-19 pandemic, and that 800,000 (22.6%) more nurses plan to leave the profession in the next 5 years, excluding those who plan to retire (9). Similar trends were reported by Canadian nurses, with a 2021 survey conducted by the Canadian Federation of Nurses Unions finding that 19% of nurses reported intending to leave the profession in the next year and another 27% intending to leave their current nursing position in the next year (7). It is likely that the dissatisfaction with unsafe nurse-patient ratios and experience of structural and workplace violence has been compounded by the demands placed on nurses due to the COVID-19 pandemic. The COVID-19 phenomenon of praising nurses as 'heroes', coupled with governments simultaneously ignoring their calls for safe staffing ratios has compounded nurse burnout levels and their concerns with capacity issues, unable to provide adequate levels of care for their patients (4). Critical care nurses based in the United Kingdom, Australia, and North America report concern for unrealistic expectations and risks to workplace safety as a result of the pandemic heroism narrative (10). The framing of the issue by high-income country governments and health leaders as a nursing shortage is problematic as it allows these institutions to evade responsibility for the conditions of their workers.

Drivers of Migration

In general, the primary drivers of migration of nurses from low-income countries to high-income countries include remuneration, security, career prospects and job satisfaction (11). Interestingly, these drivers of migration do not differ across geographical regions in low-income countries (11). International organizations have described the main push and pull factors involved in migration and international recruitment of health workers. Push factors are those which motivate healthcare workers based in low-income countries to migrate out of their countries for work. Main push factors include absolute low pay or relative low pay, poor working conditions, lack of resources, limited career growth opportunities, economic instability, and dangerous work environments (12). Pull factors are those which draw in healthcare workers based in low-income countries to high-income countries, and these are reported to be higher pay, opportunities for remittances, better working conditions, better resourced health systems, and political stability (12). Specifically in Canada, the pull factors for migrant nurses are improved quality of life for their families, improved educational opportunities for their children, opportunities to advance their nursing education with specialty certifications and a higher income (13). As of 2019, 9% of the nursing workforce in Canada were migrants, an increase from 6.9% of the Canadian nursing workforce in 2007 (14).

The Globalization of Services and Exploitation of Migrant Workers

The neoliberal global economy has opened international borders for goods and labour, which now includes nursing. High-income countries are resorting to recruiting nurses from low-income countries to fill their vacancies. Concerningly, the nurses recruited from low-income countries are being recruited to work in the identical poor conditions which pushed out the existing nurses in high-income countries. Migrant workers are a vulnerable population at increased risk for exploitation, such as lower wages compared to their domestically trained counterparts, threats of deportation if they do not comply with excessive work demands, or delayed payment, all of which is further aggravated by the systemic racism they may face (4,7,8). Migrant nurses report discrimination, lack of recognition in comparison to non-migrant nurses, and limited opportunities for promotion (15).

The documented unsafe nurse-patient ratios and experience of workplace violence of the system will be burdened onto migrant nurses.

Compounded with poor work conditions, migrant nurses in Canada can also face complicated policy barriers to begin working, such as extensive skill and language requirements and lengthy, expensive licensing and registration processes (16). Internationally educated nurses may migrate to Canada due to various pull factors, such as better opportunities and renumeration, yet they instead face obstacles at every stage of the migration and relicensing process (17). As many as 47% of migrant healthcare workers who come to Canada for work cannot find employment in their profession (16). Issues in coordination are also to blame in the case of Canada's migrant health workers, as the immigration is incentivized and selected by the federal government. However, nursing employment is organized by the provincial governments, resulting in many migrant workers poached by Canadian incentive programs arriving in Canada and subsequently discovering their qualifications do not meet Canadian requirements (16).

The Collapse of the Healthcare Systems in Low-Income Countries

A key implication of this phenomenon is the collapse of healthcare systems in low-income countries due to loss of staff and expertise. The low-income countries disproportionately bear the cost of this exchange, while high-income countries stand to disproportionately gain. There is a persistent global maldistribution of nurses. According to the WHO's 2019 global health workforce statistics, high-income countries have approximately 12 nurses per 1,000 patients, compared to 1 nurse per 2,000 patients in low-and middle-income countries (18). For example, in 2020, the Americas had a ratio of 83 nurses per 10,000 people, while Africa had 9 nurses per 10,000 people (2). Moreover, the WHO's 2020 State of the World's Nursing report announced that nurse shortages are primarily in the African, South-East Asia and Eastern Mediterranean regions (2), such that an estimated 89% of the global nurse shortage is concentrated in low-and middle-income countries, and growth in number of nurses is not keeping pace with the population growth (2).

Furthermore, high-income countries are primarily recruiting nurses from these regions with the lowest-documented nurse to patient ratios (2). This is of critical significance as the reliance on this brain drain mechanism stands to deepen the global healthcare inequities, especially in relation to countries with the lowest numbers of nurses (4). Reliance on low-income countries for nurse recruitment leads to a collapse of their healthcare systems as they are left without adequate staff. In addition to aggravation of the existing workforce shortages, low-income countries face increased costs for healthcare, decreased access to care, and adverse population health outcomes (11,19). According to the Chief Executive Office of the International Council of Nurses, the risks are incredibly concerning; a low-income country may only lose a few specialist professionals to emigration, however this can be enough to end a specialized service for patients in a given country or region, resulting in severely decreased availability of care (17). The overwhelming loss of specialist expertise out of low-income countries as well as the extent of attrition of health care professionals is highly concerning as it compounds global inequities in access to health care.

Alternative Solutions

To address the problematic implications of the recruitment of nurses from low-income countries, various policy approaches have been proposed. These approaches encompass international agreements, domestic policies, and strategic interventions. In terms of international agreements, one such proposed solution is the introduction of a compensation mechanism where high-income countries would financially compensate the low-income countries from which they recruit workers (20). This compensation mechanism could be structured in two forms; either direct investment in educational institutions for nursing in the source country or general financial support to the source country to repay for their investment in human capital (to cover the invested cost of public nursing education for each migrant nurse) (20). The direct investment mechanism has been ongoing in the Philippines, whereby a high-income country interested to recruit nurses will fund private nursing schools for Filipino students intending to migrate upon completion of their nursing education (20). The latter form of bilateral financial agreements, general financial repayment, is less likely to be feasible (20). The human capital investment of a given low-income country in the public education of one nurse is a challenge to estimate and there are barriers to implementation of legally binding payments by high-income countries for each recruited nurse (20, 21). Throughout the evolution of various voluntary codes of best practices for international recruitment of nurses, the concept of financial compensation to low-income countries by high-income countries was replaced by the concept of mutuality (21). Rather than direct compensation, mutuality encompasses other trade-offs to balance the needs of the source and destination

countries, such as training exchanges (20, 21). Yet, in theory, a compensation mechanism may at least reduce the harms to the low-income countries caused by overwhelming loss of human capital investment in nursing education, compounded by loss of workers and expertise from the national health system (20, 21).

With regard to international health trade service agreements, the General Agreement on Trade in Services (GATS) treaty of the World Trade Organization (WTO) is a set of legally enforceable rules on trade in goods and services. However, they are only enforceable to members of the WTO who commit to modes of the GATS. Specifically, Mode 4 of the GATS pertains to the movement of people including the international mobility of health workers, including nurses (21). GATS commits WTO members to rounds of negotiations of their service sectors, in which members settle which service sectors they will commit to a higher level of liberalisation via GATS (22). The potential benefit provided by GATS on health care services is controversial (20). GATS may positively contribute to the international harmonization of nursing qualifications (20). GATS can also have positive economic impact for both high and low-income countries, as liberalization of the trade in services for nurses enables all countries to enter global markets, such as exporting of services abroad or to operate abroad (23). For example, low-income country economies may argue for increased freedom to work abroad since the associated remittances boost their economy (23). However, when it comes to health care services, experts warn against commitments to liberalist trade policy embodied by accepting remittances as this can seriously compromise health care quality and availability (24). Market competition for health care can exacerbate health inequities since public hospitals must compete with private. In low-income countries, the introduction of foreign private hospitals can recruit the most experienced healthcare professionals out of the public sector, compromising the number of professionals and level of expertise in the local public health care system, thereby reducing or removing the opportunity to access health care for those of lower socioeconomic status (24). The GATS is a step in the right direction for the equitable movement of people in health services, as global regulation efforts are integral, but it is not sufficient as it can reinforce inequities (20). There are opportunities for deeper, more equitable bilateral commitments related to health worker mobility, such as financial compensation to low-income countries from which nurses are recruited for high-income countries (21).

Voluntary codes of practice have evolved since adoption of the GATS. The 2010 WHO Code of Practice on the International Recruitment of Health Personnel serves as a core component of international, domestic and bilateral responses for the promotion of ethical principles in recruitment and retention of healthcare professionals (21, 25, 26, 27). The Code facilitates the strengthening of health systems, particularly low-income country health systems, by mitigating aspects of healthcare worker that may be detrimental (21, 25, 26, 27). Its main recommendations to member states include: ethical international recruitment by discouragement of active recruitment from low-income countries facing critical shortages of health personnel, health workforce development and health systems sustainability, fair treatment of migrant health workers, international cooperation, support to low-income countries, data gathering, and information exchange (25). Overall, the WHO Global Code of Practice emphasizes the importance of equitable access to healthcare services worldwide.

In low-income countries, non-financial incentives are effective strategic interventions against the mass emigration of nurses, which include training, study leave, and the opportunity to work in a team (20). Policy interventions may also be effective – specifically the replacement of traditional restrictive donation rules with more relaxed rules to allow donor money to be directed toward recurring health care costs such as wages (20).

The improvement of working conditions for nurses is another proposed domestic solution within high-income countries, achieved via policy and strategy interventions. This would stimulate the retention of trained local nurses as a means to address the root cause of the lack of nursing staff and the increase in vacant nursing positions. Local governments can implement evidence-based targeted solutions to ameliorate working conditions and to retain nursing staff: safe nurse to patient ratios, adequate wages, benefits, organizational support, and policy development to facilitate the reporting of workplace violence (20, 28, 29). In Canada, the government released a 2023 report stating strategies for nurse retention following the pandemic: Health Canada's Nursing Retention Toolkit draws upon evidence-based practice and lived experiences of nurses to call for immediate action (30). The Toolkit calls for safe staffing practices, flexible and balanced ways of working, and reduced administrative burden on nurses, in addition to other organizational adjustments (30). A joint report from the World Health Organization, International Council of Nurses, and Nursing Now (2020) recommends that countries who are over-reliant on migrant nurses focus on their self-sufficiency through investment in domestic retention and production of nurses (2). This is also an optimal solution to ameliorate the global nursing deficit

(4). The most sustainable approach to the lack of nurses in high-income countries is to fix longstanding systemic problems in their healthcare system by increasing the number of institutions providing safe working conditions.

Conclusion

The brain drain of nurses from low-income countries to high-income countries is a pressing global health concern which has been exacerbated in recent years. Adverse effects of the migration of nurses are disproportionately felt by low-income country populations, as this approach to low nurse retention in high-income countries is further worsening the global maldistribution of nurses (4). The communities of already resource-poor countries are burdened by increased costs for healthcare, decreased access to care, and adverse health outcomes (11, 18). The reliance of high-income countries on recruitment of nurses from low-income countries is an unsustainable mechanism for healthcare systems worldwide. To promote equity, it is necessary for all stakeholders to reinforce the implementation of the WHO Global Code of Practice. This review calls for two actions. Firstly, urgent global prioritization of preventative strategies against the unsafe nurse-patient ratios, and structural and workplace violence of nursing staff. Secondly, high-income countries ought to cease the unethical poaching of nursing staff from low-income countries. In sum, coordinated and synergistic work from both low- and high-income countries on their domestic safe working conditions for nurses will facilitate the recruitment and retention of nurses globally, thereby alleviating disparate global health inequities.

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Understanding the Drug Epidemic: The Role of Safe Injection Facilities in Harm Reduction

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Abstract

Opioid overdose rates have seen substantially elevated numbers globally since its recognition as a public health crisis in the 1990s. Throughout its history as a public health issue, activists have strived for change with notably renewed calls for action in recent years. This argumentative essay will discuss the implementation of safe injection facilities (SIFs) as one evidence-based, yet controversial solution. SIFs may provide resources to not only prevent overdose deaths but additionally offer holistic care that addresses both physical and emotional aspects of addiction. This is achieved by giving people who inject drugs (PWID) access to a wide variety of support, such as nurses, peer support workers, and mental health professionals. Furthermore, SIFs promote harm reduction strategies to PWID and help address any gaps in drug-use knowledge that may exist and lead to harmful practices. Contrary to misconceptions, SIFs are also a more cost-efficient way of increasing safety in neighborhoods, with studies showing a decrease in discarded syringes and crime rates while saving millions of dollars per year in drug-related medical costs. Moreover, SIF implementation is rooted in the community, bringing together many individuals to support the drug epidemic cause, such as peer support workers and the local police force. The British Columbia Coroners Service found that 79% of those who died from overdose had contact with health services in the year preceding death, indicating a problem with the medical systems available to PWID, and calling attention to harm-reduction models such as SIFs.

Keywords: safe injection facility, opioid crisis, harm reduction, addiction

Introduction

In 2016, British Columbia's Provincial Health Officer declared the opioid crisis a public health emergency (2). In the 6 years following this, Canada saw a total of 32,632 opioid toxicity deaths (1). Between 2020 and 2021, there was a 96% increase in deaths over the same period in the year preceding (1). With drug poisonings continuing to rise globally, government response is becoming increasingly crucial, and is garnering more attention from citizens. One solution that experts are looking towards is safe injection facilities (SIFs). The first of these sites to be government-sanctioned in North America was Vancouver's Insite, which opened in 2003. Prior to this, people who use drugs faced forceful regulation by police, and in protest, they spearheaded the establishment of unsanctioned SIFs, along with the help of nurses, researchers and activists (3). Many of these sites eventually closed due to police and government pressure. Insite was finally approved due to the need for scientific data on SIFs, which was quite limited at the time, and under the stipulation that it would be tightly regulated (3). Between January 2017 and October 2023, there were 47 sanctioned SIFs in Canada, receiving a total of 4,480,823 visits over the 6-year period (4). Such sites provide a clean and safe environment for people who inject drugs (PWID) to do so under medical supervision, with the aim of reducing harms associated with drug use. SIFs have shown progress towards creating reliable solutions for the opioid crisis: safe injection sites are shown to reduce deaths while providing educational opportunities, increasing safety in neighborhoods, and inviting community-based intervention.

SIFs as a harm-reduction and educational model

Safe injection sites positively impact drug users by allowing ease of access to different forms of harm reduction that not only treat the addiction itself, but also allow PWID to be more engaged in discussions pertaining to their health, since they do not need to be concerned about hiding their substance use.

The primary aim of SIFs is reducing overdose deaths through intervention provided by trained experts, and not necessarily just medical professionals. Nurses are able to supervise the injection of drugs to ensure that physically safe quantities are used and social workers and trained peer workers are able to provide mental health support and help create social environments free of judgement. This non-traditional method of supervision helped Vancouver reach a 35% reduction in overdose events in the 500 meters surrounding its safe injection site, Insite, between 2003 and 2005 (5). Addressing both the physical and mental consequences of addiction allow SIFs to take a holistic healthcare approach, playing an important role in an individual's long-term well-being. In addition to creating a space with better equipped staff, SIFs allow PWID to learn more about harm reduction strategies and therefore be more engaged in their care plans. An example of this is nurses advising clients on proper injection techniques to avoid injury. One study done at Vancouver's Insite in 2008 involved client interviews, and many of them credited Insite for their healthier habits. Multiple users reported fewer medical complications after learning how to clean the injected skin and inject properly (6). Furthermore, a 2015 study by Roux et al. showed that after an extended period of supervised injections, unsafe injection practices in drug usage dropped from 66% to 39%, as opposed to the control group which remained mostly stable (7).

While many citizens see the advising as "enabling" drug users, an important reality to note is that drug users are tempted to inject, whether they are taught how to or not. A common misconception is that these facilities serve to cure drug addiction, which is simply not true. As opposed to completely preventing injections, SIFs aim to reduce risk to PWID, and treat them with dignity, whether the SIFs help lead them to recovery or not. Furthermore, drug users are not the only population that may benefit from the education SIFs provide. Studies conducted for the Canadian Expert Advisory Committee on Supervised Injection Site Research in 2008 illustrated that the majority of Vancouver police officers are in support of Insite's operation, while national law enforcement groups shared opposing views (8). For individuals with less understanding of PWID, such as law enforcement officers outside of heavily drug-influenced communities, SIFs may be the key to spreading educational resources. These resources lead to more informed populations and consequently, improved harm-reduction solutions. Additionally, safe injection sites provide other resources such as access to medication, social services, rehabilitation centers, medical care, and STI testing, which drug users otherwise may not know about or have access to (9). One popular resource introduced at Insite called "drug checking" allows PWID to get their drugs tested for fentanyl, a rising concern due to the drug's extreme potency. According to Vancouver Coastal Health, users were ten times more likely to reduce their dose upon a positive fentanyl test, and this was associated with a 25% reduction in overdose events, showing the benefits of injection facilities (5). Overall, SIFs are crucial for providing drug users with a safe, monitored environment to inject, as well as improving drug knowledge and creating access to relevant education.

Increasing safety in neighborhoods while saving taxpayer dollars

A major concern raised by citizens where there is a particularly high density of people who use drugs is the danger posed by discarded syringes and a lack of public order. Due to a high density of drug users, places like Vancouver's Downtown Eastside may be littered with used syringes, increasing risk of disease transmission, community exposure, and accidental overdose if contaminated with toxic substances. Public injections and altercations are also common, creating disturbances that may lead to danger for both non-drug users and drug users alike. Many opponents to safe injection sites argue that their implementation will only exacerbate discarded syringes and crime rates; however, studies done in Vancouver and Sydney, Australia prove the opposite. After the implementation of SIFs, both cities observed a decrease in drug-related crimes, drug soliciting, and discarded used syringes (10). Citizens also voice concerns that SIFs expose the community to drug use, particularly youth, and encourage drug-use initiation. However, a cohort study done at Insite in 2007 showed that the average time of drug use was sixteen years, indicating that users were not influenced by the facility and had been injecting drugs long before Insite was established in 2003. Only one person in the study reported performing their first injection at a safe injection facility (11). The results indicate that SIFs do not prompt drug-use initiation and do not attract a large number of youth (11). In fact, it is hypothesized that the result of decreased public injections may serve as a preventative measure for youth drug-use initiation, in that PWID are given private places to inject rather than doing so in public spaces (12). SIFs drawing in large numbers of drug users from other communities that may have higher rates of crime is an additional raised safety concern. Research has shown, however, that the majority of SIF clients travel less than twenty minutes to a facility, due

to the strategic accessibility of these services (10). For this to remain true, however, SIFs must be implemented differently depending on geographic area. For example, Insite works well for Vancouver due to the very concentrated population of drug users in a commercial area. However, in provinces like Saskatchewan, where the drug user population is more isolated (5), mobile SIFs can see more clients. A mobile SIF has similar benefits to sites such as Insite, however, it is packaged into a recreational van so that SIF services can be brought to rural areas. By adjusting SIF operations, the safety that they provide is consistent. The improved safety is also cost-efficient, contrary to many opponents' beliefs. Many taxpayers do not support subsidizing drug equipment, believing this to enable drug users and increase taxes. Yet, amongst Vancouver drug users, for every 83.5 HIV infections prevented by Insite, eighteen million dollars are saved by the Canadian government in life-time HIV-related medical costs, while Insite's operating cost is only three million dollars per year (13). A similar cost-benefit analysis study of a supervised consumption site in Calgary from November 2017 to January 2020 concluded that another two million dollars are saved in emergency service expenses for overdose (14). Taxpayers save a significant amount of money compared to the costs of the opioid crisis, meanwhile increasing the levels of safety in their own neighbourhoods.

Intervention rooted in community

The several resources that SIFs provide share a common theme of being rooted in community. SIFs use various community members' services to provide more specific harm-reduction treatment. This is critical in ensuring that all of an individual's specific needs are met. A study conducted in Melbourne, Australia interviewed drug users who had experienced both hospital-based support and a community-based support program at the Healthy Liver Clinic (HLC) (15). Many participants reported attending the community-based program simply because it was not a hospital. The clients described facing much less stigma than in a hospital setting and feeling more connected to employees working at HLC than anywhere else due to their advising and listening abilities. One client at HLC described peer support workers as relatable human beings, explaining the threat many people feel from doctors, and preferring communication through a peer support worker (15). While doctors may endorse a more compassionate system, busy schedules in hospitals make it unrealistic, often leading to dehumanizing treatment. Drug users therefore have a tense relationship with the public health system, deterring their recovery process. However, when various community members act as liaisons for medical professionals, drug users are able to receive better treatment, and also have better communication and relationships with doctors. Furthermore, peer support workers can help introduce SIF services such as peer-assisted injection. This service not only aims to reduce harms associated with injections, but promotes safe relationships between PWID. Some PWID require assistance with injecting due to physical and psychological hinderances or inexperience. However, some relationships between the injection provider and receiver can be established through violence, particularly in relationships with power imbalances in the social context. Peer-assisted injection programs allow PWID to be injected by someone with experience, and who will treat the client as an equal (16).

Additionally, the community's police force must play a significant role in SIF implementation, due to the connection between the criminal justice system and drug prohibition. Historically, drug users maintain a tense relationship with law-enforcing systems. In a study done in British Columbia, 57% of PWID reported a disinterest in forming positive relationships with the police (17), which may be due to experiencing abuses of power, harsh sentences, and confiscation of clean equipment and drugs. Consequently, the relationship between drug users and the police may create an increase in overdose events and injection complications. For instance, a 2003 Vancouver study found a 27% decrease in the number of sterile syringes distributed four weeks after the implementation of high police presence around needle exchange services. A 2010 Swiss study had similar results: increased policing led to increased drug-related mortalities (17). The police force must complement the strategies of SIFs. Otherwise, they run the risk of creating fear that prevents clients from visiting facilities and seeking help during drug poisoning and overdose events. While the police are required to play a role in SIFs, this may involve new approaches. An SIF-supported policing method might include physically distancing police forces from injection facilities and altering their role to encouraging drug users' visits to SIFs instead of confiscating drugs. A gentler approach to policing drugs may improve the relationship between PWID and the justice system. Ultimately, without the joint support of community members, SIFs would not differ from other harm reduction models already in place, such as rehabilitation centers. While these models are certainly important, combinations of various organizations provide real impact for drug users.

Conclusion

The discussion of safe injection facility implementation reveals ingrained stigmas, and the extreme lack of education about the science and impacts of addictive substances creates a population that fails to invest their attention in those suffering from the drug epidemic. There are many factors that may lead to drug addiction, such as chronic pain, trauma, mental illness, and homelessness. Viewing addiction as a multifaceted issue rather than reducing the epidemic to merely drug consumption may start new conversations that help bridge the gap between non-drug users and drug users. In doing so, harm-reduction services like SIFs may receive more support, leading to more widespread implementation, and thus offering opportunities for rehabilitation and education, effectively enhancing safety and public order, and encouraging community-led intervention. By approaching addiction with a comprehensive treatment plan that addresses all facets of the disease, the benefits will not only impact drug users, but create informed change for other generations as well. Thousands of future deaths can be prevented, and thousands of current lives can be supported by moving past misplaced stigma to implement truly effective harm-reduction models.

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How Can Occupational Therapists Contribute to Climate Action? Exploring the Potential

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Abstract

Climate change can have many devastating effects on health and disrupt occupations, including activities of work, self-care, and leisure. Thus, occupational therapists (OTs) have a role to play in climate action by promoting sustainable occupational therapy practices and educating clients on the importance of employing more eco-responsible occupations. However, within the Canadian context, the OTs who support climate action may face many difficulties when advocating for it. This analytical essay will explore the multiple barriers to the implementation of sustainable practices in Canada that OTs encounter. As most Canadian citizens adopt consumerist lifestyles due to Western ideals and systems, this can affect clients' and professionals' receptibility to sustainability education and motivation. Moreover, many Canadian OTs lack education on climate action in their profession, and current resources are either overwhelming or unclear. Nonetheless, Canadian OT leadership, specifically the CAOT, has begun taking initiative, thus while work is still in progress, the outcomes have yet to appear, however there are great hopes for the future. In conclusion, while there are still many barriers to overcome, OTs have a great potential to become active change agents in the fight against climate change by collaborating with clients and colleagues alike to spread awareness and build sustainability in occupations.

Keywords: occupational therapy, rehabilitation, climate action, sustainability, consumerism, leadership

Introduction

Climate change presents a profound threat to humanity as it has multiple wide-scale consequences on the ecosystem. The consequences include the scarcity of resources, natural disasters, and forced migration, which creates a chain reaction of issues that can affect people's physical and mental health. People may experience a loss of physical and social environments, as well as material and psychological losses, which may lead to chronic stress, mental health disorders, and many other health issues (1, 2). As a result of these losses, peoples' occupations may be disrupted. This holds true especially for vulnerable populations such as those with disabilities and physical, mental, and chronic illnesses; older adults; children; and the unhoused (1, 2). According to the theoretical foundations of the occupational therapy (OT) profession, occupations are understood as all activities of self-care, work, and leisure (3). Occupations are a source of meaning, purpose, freedom of choice and control over one's life; all elements deemed critical to make one's life worth living (4, 5). Participating in meaningful occupations can enhance quality of life as, according to Hammell (4), "the experience of quality of life is not dependent upon the quantifiable material conditions of life but upon subjective, qualitative factors: the content of life" (p.299). Having a better quality of life is associated with lower mortality (6). In other words, health and occupations both affect each other in a cyclical way, either positively or negatively. The operational definition of health used henceforth is aligned with the WHO's definition: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (7). As health professionals, occupational therapists (OTs) must therefore combat the impacts of climate change to protect people's right to participate in occupations so they may lead healthy and meaningful lives by pursuing sustainability in their practice and encouraging eco-friendly behaviours in clients. This essay uses the U.S. Environmental Protection Agency's (8) definition of pursuing sustainability: ensuring that the productive and balanced coexistence of humans and nature will remain for the present and future generations. From this definition, this paper asks: How can Canadian OT become more sustainable? What are the current barriers to

sustainability, and how can OTs overcome them?

Peoples' occupational needs are tied to their use of natural resources, and have implications on all aspects of daily living (9). A continuous, unsustainable exploitation of these limited resources may lead to their depletion. In turn, peoples' wellbeing will be impacted as they are highly dependent on these resources. It is important to consider that the massive consumption of resources has a direct impact on the environment and their availability to future generations. On the other hand, OTs are required by their practice to consider the effect of environment on their current and future clients' occupations and wellbeing. As a result, they must combine both aspects of the relationship between occupations and environment to fulfill their duty as advocates for intergenerational occupational justice. This form of justice requires securing access for both present and future generations to a wide variety of occupations (9). In order to achieve occupational justice, OTs can educate themselves as well as their clients and their colleagues on ways to make their preferred occupations both eco-friendly and adapted to their personal environment.

This essay will explore the underlying reasons why occupational therapy, as a profession, faces many challenges with implementing sustainable practices in Canada. First, as a Western country, the importance Canadians accord to consumerism poses a great barrier to sustainability in client education and OT practices. Second, peoples' personal means can greatly affect their access to eco-friendly resources and their freedom to choose such resources. Third, many Canadian OTs also lack education on sustainability, preventing them from becoming active agents of change. Finally, the involvement of the Canadian Association of Occupational Therapists (CAOT) has only just begun, and while they have taken many initiatives, the outcomes are still unknown. Yet, by leading by example, they can potentially initiate climate action in other OT leader organizations. Despite these barriers, OTs can still be an essential component of climate action by collaborating with their leaders and clients for a brighter future.

Consumeristic Lifestyles

In Western society, consumption-pollution is the default lifestyle. Consumerism is defined by the Merriam-Webster Dictionary as "the theory that an increasing consumption of goods is economically desirable" and as "a preoccupation with and an inclination toward the buying of consumer goods"(10). Unsustainable consumerism as it is done today in most peoples' occupations will inevitably lead to the depletion of resources. Unfortunately, because this is a system-wide phenomenon, it is near impossible for individuals to lead a fully pollution-free lifestyle without systemic changes.

Authors such as Wynes and Nicholas (11) would argue that individuals can produce a great impact in climate action through the reduction of their carbon footprint. According to them, the four most applicable and impactful methods individuals can use to reduce their personal carbon emissions are: "having one fewer child, [...] living car-free, [...] avoiding airplane travel, [...] and eating a plant-based diet" (11). They admit the effects of implementing these changes will vary between countries due to the economic and political systems in place (11). For instance, changing from an internal combustion car to an electric car for the purpose of reducing carbon emissions is very effective in Norway since it would be mainly powered by clean, renewable electricity. In contrast, switching to an electric car in the United States will not be as effective, as most electric cars are powered by electricity generated from burning fossil fuels (12).

Contrarily to Wynes and Nicholas, Fisher (12) states that individual actions can be positive but are inherently insufficient, and that an over-reliance on individualism can be a dangerous distraction. The author highlights that research shows changing individual behaviors is a difficult task, and that individual action is constrained by the individualistic system put in place. They state that "anyone who says that individual consumption choices can do it alone is trying to distract from where the power is actually concentrated" (12, para. 8).

In engaging both points of view, it is unclear whether individual actions can impact climate change. While the system in place does impede on an individual's ability to live a pollution-free life, an individual reducing their personal carbon footprint is still better than nothing at all, and the higher the number of individuals doing so, the bigger the impact. As the Quebecois saying goes: "we make dollars with pennies".

OTs' role in this situation can be both at the individual, interpersonal, and structural levels, depending on their level of practice. At the individual level, they can change their own personal and professional habits for a more sustainable lifestyle. For example, they can learn to reuse or recycle everyday objects, purchase goods from eco-responsible or local companies, and become more aware of their own waste of energy and material. For more information, the Columbia Climate School lists 35 ways to reduce individual carbon footprint (13). At the interpersonal level, they can increase awareness in their colleagues and clients to spread change

beyond their individual lives. They can also advocate for modifications in the clinical environment to their higher-ups. If they possess enough power, they can directly perform the change, fund sustainability formations to their staff, and more. Finally, at the structural level, OTs involved in policymaking can advocate for changes in policies, in public systems, in governance. The possibilities for involvement are vast and OTs from all clinical settings can get involved in promoting sustainable occupations.

Such actions do not come without challenges. To bolster the sustainability of one's lifestyle, one needs the motivation, knowledge, and means to do so. Not all OTs are sensitized to eco-responsibility, and those who are sensitized may face barriers when trying to implement sustainable practices in their personal and professional lives. They may also struggle to promote sustainable behaviours depending on their clients' and their own attitudes and beliefs. According to an international study performed by IPSOS in 2022 with 30 countries, only 34% of Canadians worry greatly about climate change, compared to a worldwide average of 48% (14). This relatively low number demonstrates that there is much work to do in terms of sensitization on eco-responsibility, and although this is not a major responsibility for OTs, they remain well-positioned to contribute to the movement. Of course, at the structural level, politics are a major barrier. One OT's individual call for action may not influence the multitude of people involved. Sustainability is obviously not the only challenge these people must manage, which affects fund distribution and policymaking. Some interprofessional group work and research can help persuading people, but it is still a very sizable task. Finally, the common challenge between all three levels is the availability of eco-responsible resources, which are limited in a consumer society, as well as the means that an entity – whether it be an individual, a company, or a government – possesses to access and implement those resources.

Impact of Means and Accessibility to Eco-friendly resources

While there is an increase in environmental awareness and regulations in Canada, it remains difficult for individuals to determine the impact of products and activities on nature. Locating such information requires time, a resource that may not be readily available to many consumers, especially those with low income, low education, or working multiple jobs. A lot of the eco-friendly options are also more expensive than the non-sustainable ones. Indeed, costs rise rapidly for companies who try to follow green practices in a market with high production costs and low demand (15). Unfortunately, not all consumers have the financial means to begin to consider choosing such products. Furthermore, many consumers may not care to investigate sustainable options. Such people prefer selecting products that are most convenient to their situation—even when possessing the necessary resources—valuing individual interests over community wellbeing. As a result, actively choosing to be more eco-responsible is a luxury for those who have the time, care, and financial resources to do so.

This is especially true for people with disabilities, a prevalent OT client population that includes 6.2 million Canadians (16) . Most of them have difficulties keeping a job; in 2022, only 65.1% of Canadians with disabilities are employed, compared to 80.1% of people without disabilities (17). For those with a more severe disability, the employment rate drops to 26.8% (17). These people may also be required to spend a lot of money on therapy and therapeutic adaptations, further affecting their financial resources. A Global News article (18) cited Canadian federal data from 2022 to highlight that "working-aged Canadians with disabilities are twice as likely to live in poverty in comparison to able-bodied Canadians" (Statistics section, para. 2). These financial difficulties become a great barrier to the use of eco-responsible options for individual consumers. Most of the time, the products needed for clients' rehabilitation have no sustainable alternative, or clients lack the money to afford those options. This is intensified in an individualistic society like Canada, where "self-responsibility and self-reliance imply that personal misfortunes reflect poor choices on behalf of the individual, despite contextual influences" (19). As a result, these people may have a very hard time obtaining external financial assistance, and while governmental help exists, it remains insufficient. Global News (18) compared the average Canadian cost of living to the average government grants of the Canada Pension Plan for people with disabilities in 2022 and found there was an approximate deficit of $2,271 per person per month. This deficit is further increased with the addition of expenses such as medications, treatments, and home and mobility adaptations. OTs can act to reduce some of the burden of these expenses by developing sustainable and low-cost therapeutic techniques and adaptations for their clients. For example, they can partner with organizations like the STRIDE-Wheelchair Plus Recycling Depot (20), an organization that recycles and refurbishes used wheelchairs and other healthcare equipment that are then sold at a lower price. OTs can also encourage the adoption of cost-free or cost-effective sustainable behaviours in clients' daily lives. These may include learning new skills like composting or

repairing torn garments, when possible, instead of buying new ones. By directly providing resources to their clients, and their caretakers if applicable, OTs can also help the clients who may have been too limited in time to conduct their own independent research.

Moreover, still at the interpersonal level, OTs can further encourage participation in individual and group activities organized by community centers. For instance, the Friendship Circle based in Montreal offers the Delamie Culinary Arts program (21), where people with mild intellectual and learning difficulties learn to cook in a group setting, free of charge. Cooking is a cost-effective skill that builds autonomy and confidence. Participants also learn how to communicate effectively and work as a group. The food is then either kept by the cooks or sold back to the community, reducing waste. There exist many similar programs that are accessible, sustainable, and favour the development of skills through meaningful occupations. Referring clients to such community initiatives could have a multitude of benefits for both the client and their social and physical environments.

Furthermore, at the structural level, OTs can promote participation in sustainable occupations through activism and advocating for concrete action on policies. Within the scope of practice, OTs have a role as agents of change to advocate for peoples' occupational needs in relation to determinants of health (3). Some policies may affect peoples' health, access to healthcare services, and occupational rights. OTs who wish to advocate beyond their clinical setting can use their influence and knowledge to include sustainability in their discussions of policy development or policy change at the municipal, provincial, or national levels. OTs can advocate for governmental investments in organizations like STRIDE-Wheelchair Plus Recycling Depot. This would benefit both clients and organizations, as the organizations would be able to expand their reach and help more people in need of affordable options, and it would help reduce the deficit between governmental help and client financial needs. This would slow down depletion of natural resources while investing in a local organization and stimulating the economy.

Additionally, OTs can create environments which favour sustainable occupations as part of their role. Indeed, some OTs are tasked with evaluating infrastructure accessibility and ergonomics. In this capacity, OTs can suggest sustainable choices such as ensuring that water fountains be sufficiently available and accessible in buildings, as it respects the right to drink clean water and it is a way to reduce the use of plastic water bottles. OTs can also advocate for accessibility to public transport. Note that the *Minister of Justice Canada* (22) defines barriers in the *Accessible Canada Act* as:

> Including anything physical, architectural, technological or attitudinal, anything that is based on information or communications or anything that is the result of a policy or a practice – that hinders the full and equal participation in society of persons with an impairment, including physical, mental, intellectual, cognitive, learning, communication or sensory impairment or a functional limitation. (p. 2)

Some of the main barriers to accessibility in public transit include physical barriers, cost barriers, and "availability when needed" barriers. For example, physical barriers may include the absence of elevators or ramps in transit terminals. Cost barriers may be an insufficient amount of funding to build infrastructures or expensive ticket prices. The most important barrier, however, is the availability of the transit when and where it is needed. Public transport is largely well established in urban centers. However, in suburbs and rural areas, public transit becomes much less accessible. Transit options are more distanced in time and in between stops or are absent altogether. This can impede access to a multitude of essential services, as well as the participation of people in meaningful occupations, and people may find it necessary to use cars, even if they wish for sustainable transportation. Consequently, OTs can advocate for the development of accessible public transit, as it pertains in their scope of practice.

Education on Climate Change in the OT Profession

In addition to the barriers to the sustainability initiatives set in place by individualism, some Canadian OTs may also struggle to make their practice more sustainable due to lack of education and lack of clarity in professional guidelines. They often understand the main concepts of sustainability, but lack the knowledge to apply them in practice (24). While some adopt sustainable behaviours in their personal lives, these cannot be transposed into their professional activities. This disconnect justifies the need for adapted professional guidelines for sustainable practice. As for the new generations of OTs, many Canadian universities now teach their students about environmental awareness (26). Thus, long-term change is on the way, but as of now, that change has yet to occur.

To respond to the urgent need of sustainable practices, multiple guidelines have been created. However, Chan et al. (24) show that these "preset organisational structures, institutional policies, and evidence-based practice guidelines contain extensive information that can be overwhelming"

(p. 57). In practice, people were most likely to follow pre-established workplace structures in anchored institutions, even if they did not respect the employee's personal values, because they felt overwhelmed and helpless (24). Most participants also further exclaimed that the instructions could not be adapted to all situations (24). Occupational therapy occurs in a great variety of settings, from schools to clinics to at-home services. It is obvious that no single set of guidelines will be applicable in all contexts and locations. Thus, adaptable guidelines which allow OTs to provide tailored care are necessary to truly have an impact.

When creating sustainability literature, another problem that arises is the method of generating knowledge. According to Lieb (19, p.3), "Western science has been described as reductionist, rationalist, and positivist." It is based on unmovable facts and rarely accepts other epistemologies. This is blatantly demonstrated in instances where Western medical professionals refuse to acknowledge alternative medicine commonly used in other cultures. Keeping this narrow view of medicine may prevent OT researchers and practitioners from considering other forms of practice that may be more sustainable or appropriate. On the contrary: opening up to the ways of other non-Western populations may just be what Western societies need to make their healthcare system more holistic (19). Such populations include Indigenous, African, and East Asian cultures and communities, which are known to value community over individuality. Lieb (19) particularly favors the two-eye seeing method utilized by Indigenous cultures. It asks the practitioner to consider all viewpoints' strengths and weaknesses before making a decision, including non-Western viewpoints. This can help reduce bias and provide a better understanding of a situation. Unfortunately, asking OTs to know all potential solutions is unrealistic with the little time they have. OTs could also use the Kawa model, an Eastern-focused model developed by Japanese and Canadian rehabilitation professionals, which sees one's life as a river ("kawa" in Japanese) whose flow is affected by its environment. OTs then serve into improving that flow through enhanced harmony between environmental components (27). If OTs were to integrate either method in their practice and their educational techniques, the result would be much more inclusive and favor community aid over individuality. The key element is to promote inclusion of diverse perspectives and viewpoints and to be aware of one's own biases. To make this more feasible, courses on bias awareness and on other cultures' medicine could be offered. As well, creating and regularly updating research tools like OTSeeker or performing literature reviews that include both Western and non-Western epistemologies can help people make informed decisions more quickly.

To resolve these issues, concrete action plans are needed. OT climate change activists should collaborate with or join and take active leadership roles in organizations like the CAOT or Justice-Centered Rehab (28) to build a plan to educate OTs from multiple backgrounds more effectively. Social psychology suggests to use methods beyond scientific facts that would tap into people's emotions to make them more aware and connected to the issue (29). Organizations and activists should keep that in mind in their knowledge translation plan. They can use social media, knowledge bases, forums, or awareness campaigns organized in clinics to educate OTs on sustainable and holistic practices. This would help them understand and apply the guidelines that are otherwise overwhelming. It could also encourage them to explore non-Western practices so that they may integrate community values to their profession. In summary, a barrier to sustainable occupational therapy is OTs' lack of education on the subject – and because existing guidelines and research tools are neither adapted nor efficient, creating challenges for the profession to integrate non-Western viewpoints that could enhance sustainability.

Leadership Contributions

OTs in the field struggle to find ways to make their practice more sustainable. In recent years, climate change awareness has risen, and organizations in all sectors have started acting. Canadian OT leaders have been somewhat behind schedule, as the CAOT only began discussing climate change seriously in 2022 (30). For the scope of this article, OT leaders include any OT in position of power in their workplace, including especially the provincial regulatory bodies of OT, with the CAOT being the main visible hub for all OTs in Canada. As such, to induce change at the structural level, the CAOT should lead the charge in climate action, and OT leaders on the field should follow suit. Note that while the CAOT possesses major strategic influence on Canadian OT, the provincial regulatory bodies are the ones with the power to impose regulations. This article focuses on Canadian-wide changes rather than province-specific changes. Despite the CAOT's late start, they have attempted to make up for lost time through multiple actions in 2023 and they remain accountable as their website provides details of its actions in fighting climate change to date. Thus far, the CAOT have been engaging with Health Canada representatives and other planetary health professionals to build a durable plan of action for OTs in the future. While it is too early to say how effective those measures will be, such dedication shows

promise. Critics may say that there are barriers to participating in the CAOT's activities. For example, the webinars they have been offering may not be accessible to all, as the CAOT's webinars' admission fees are often prohibitively expensive. Nonetheless, the CAOT has also created a Practice Resource Hub (25) where people can submit free practice resources and existing studies to help build up a multimedia, hybrid knowledge base for the use of the OT community. A notable article they provide access to is the Green Office Toolkit for Clinicians and Office Managers from the Canadian Coalition for Green Health Care (31), a highly useful resource for all healthcare professionals. It has very detailed instructions on how to make aspects like clinical environment, material use, and transportation more environment friendly, as well as how to educate patients and the community on eco-responsibility. Admittedly, it lacks specificity to occupational therapy, and some of the solutions provided may be restricted by financial and physical barriers. Similarly, other articles that include guidelines to sustainable practice can be overwhelming, unclear, and lack specificity. Some improvements to address these issues are needed in order to then pursue efficient changes. In addition to the Practice Resource Hub, the CAOT also has two podcast episodes on planetary health and sustainability in OT (32, 33). Finally, the CAOT's official website (30) provides a Strategic Plan 2023-2026 (34) centered around environmental sustainability. However, the strategic plan is only two pages long, includes a nonspecific goal to improve sustainability, and very few details on the implementation process. While this plan may simply be an overview, more transparency is needed in order to have accountability.

While the CAOT can be applauded for its recent educational actions, there is uncertainty in the application of this information by the OT community. For actions to have a widespread impact, leaders would have to execute awareness campaigns or possibly offer free virtual classes to the practitioners regarding sustainability awareness and practice. In order for the classes to be effective, they would ideally be subdivided by OT setting – due to the diversity of work environments – as to not overwhelm therapists or diminish the clarity of instructions. Moreover, some OTs may not have the means necessary to apply the changes proposed in the free classes. They may also face other issues, such as a need to advocate for government support. For instance, municipalities are responsible for public schools in Québec. An occupational therapist could want to advocate for the addition of water fountains in a school where they work which, as said previously, could reduce plastic water bottle consumption and make drinkable water accessible for everyone. However, the occupational therapist may be limited in their action if the city refuses to fund the project. It is also possible that some OTs share their workspace with other OTs or other healthcare professionals who may not share the same interest in climate action. OTs may then not have the power necessary to perform changes. As such, the CAOT would first have to survey OTs on their barriers and needs. Then, they could plan resources in accordance with those needs and provide a strategic consultation service to help OTs manage the barriers they are facing regarding adoption sustainable practices or educating themselves on sustainable solutions and recommendations. They could also raise funds dedicated to this cause and distribute them where necessary.

Conclusion

In conclusion, Canadian occupational therapy is currently moving towards environmentally sustainable practices, especially with recent leadership initiatives, however, many changes at the individual, interpersonal, and structural levels must be integrated in the future. Increasing awareness on key issues is necessary as Canadians are less concerned for the environment, relative to other nations. OTs will face difficulties in changing their own practice as well as educating their peers and clients due to consumerist lifestyles and other social, political, and financial barriers. As such, it is important that the CAOT and OT leaders provide the necessary support for their practitioners. OTs must also collaborate with colleagues to induce change not only in occupational therapy, but possibly with other healthcare professions as well. OTs have the power to educate people on how to make their occupations more sustainable. Why not seize that opportunity?

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