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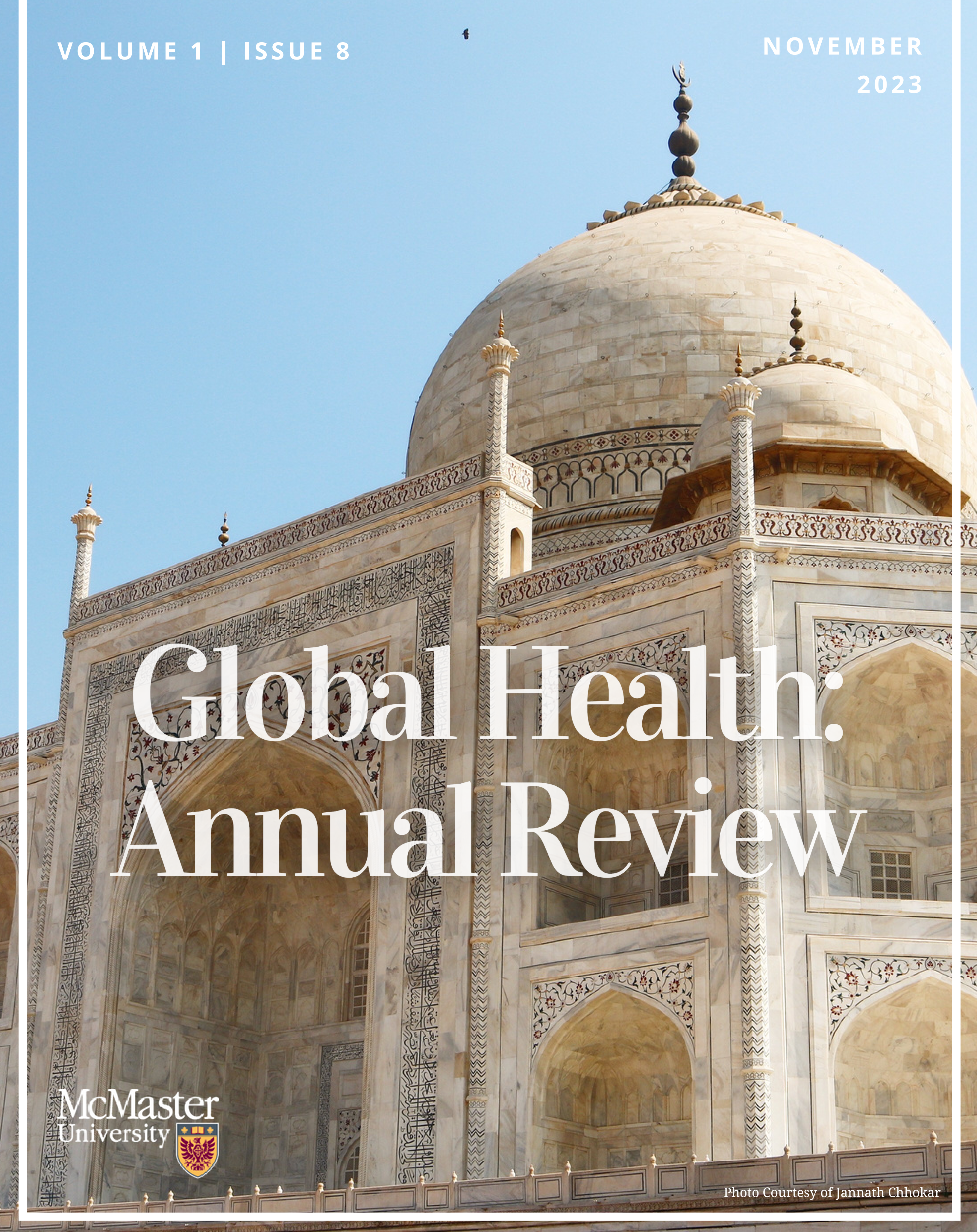

Photo Courtesy of Jannath Chhokar

McMaster University

LETTER
FROM OUR EDITORIAL BOARD

Dear Readers,

Welcome to the eighth issue of the Global Health: Annual Review (GHAR). GHAR is an open-access and peer-reviewed journal that strives for equitable access to the findings, insights, and views within global health. Run through McMaster University, this student-led journal emerged from the alumni of the Master of Science in Global Health program. Since its inaugural issue in 2015, the journal has expanded to include contributors, reviewers, and authors from a diverse pool of international institutions with the shared goal of uplifting the work of students, graduates, and professionals within the field.

In Issue 8, our editorial team carried out significant internal restructuring while upholding a double-blinded peer-review process. Emphasizing GHAR's community-serving approach, the editorial board facilitated workshops for contributors, career panels, and evidence-based humanitarian seminars. Issue 8 also marked the addition of the inaugural group of International Editorial Assistants, who enhanced GHAR's reach and integrity as a globally inspired journal.

This year, we proudly present a total of 28 pieces from our pool of contributors. We recognize the diverse expression of research and story-telling in the world of global health, which is why we have curated a range of research articles, reflective narratives, art-based submissions, and opinion pieces for your enjoyment and learning. In Issue 8, you will encounter a collection of works meticulously curated to provide thought-provoking insights into the world of global health.

This year GHAR focused on 6 key areas: Indigenous Health & Colonialism, Women's Health, Mental Health, Health Equity, COVID-19, and Infectious Disease. We believe that research is not a solitary pursuit, but a collective progress that thrives on the exchange of ideas in the international community. Thus, we have intentionally selected works that highlight the intersectionality and interplay of a variety of disciplines.

On behalf of the Issue 8's authors, contributors, reviewers, and the 2023 GHAR editorial team, we would like to express our gratitude to you, the readers. It is with your interest and engagement with the featured works that provides them with even deeper meaning beyond these pages. We hope that this issue ignites your curiosity and inspires you to embark on your own journey in global health.

Sincerely,

Global Health: Annual Review
Editorial Team, Issue 8

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LETTER
FROM OUR EDITORIAL ASSISTANTS

Amar Saeed

Amar Saeed is in his final year of medical school at Sher-i-Kashmir Institute of Medical Sciences, Srinagar in Kashmir, India. He has experience writing about public health for the youth-focused social justice platform Youth Ki Awaaz.

Glory Omole

Glory Omole is a Master of Public Health candidate at Southern Illinois University. She previously worked as a public health specialist with the First Alpha Medical Center in Nigeria.

Dear readers,

As the inaugural Editorial Assistants (EAs) with the Global Health Annual Review (GHAR), we are writing this letter to you as global researchers looking to make waves and catalyze change. Research is an important component of global innovation and advancement. More importantly, conducting research with local ownership can help advance populations by informing disease awareness, increasing access to healthcare and improving policies.

A common reality in low and middle-income countries (LMIC) is the insufficient funding given to researchers due to a lack of government interest in Research and Development (R&D). This is true for both Nigeria and India, which both invest less than the world average in R&D (The World Bank, n.d.; Government of India, 2023). Ultimately, this results in limited data and information to inform policy and health decisions and subpar technological advancements. As well, little training and support to conduct research contributes to frustration and a lack of proper ethical conduct by those who are able to undertake research projects. Additionally, even when research is conducted, high application fees to publish in high-impact journals prevent the sharing of findings and ideas. This is why we were excited to take on the roles of Editorial Assistants (EA) with GHAR.

Through our time as EAs with the GHAR, we have used our experiences and perspectives to inform important conversations about health, research and academic culture. We led a workshop on the barriers and challenges of global research collaboration and the publication process, as well as the differences in the social, educational and health priorities of various countries worldwide. Working with the GHAR has been an exciting journey that has allowed for the advancement of international collaboration from researchers across the world to share their ideas. Through this important global health milestone, we call upon governments and academic institutions to take action and challenge the inequities that uphold the current system by:

1. **Reducing financial barriers for authors from countries that persistently face high barriers to publishing:** open access journals, reducing or waving publication fees and incentivizing research through subsidies or grants
2. **Promoting diversity and representation in research:** increasing access to research training and methods globally, and encouraging new or non-traditional research methods
3. **Increasing R&D:** lobbying for the importance of research and sharing of ideas, diversification of funds, and national competitions to create buzz around R&D

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INDIGENOUS HEALTH & COLONIALISM

"If access to health care is considered a human right, who is considered human enough to have that right?"

Dr. Paul Farmer, Physician and Medical Anthropologist, Co-Founder of Partners in Health

Photo Courtesy of **Maddy McCarville**

Location: Larabanga Mosque, Ghana

Indigenous Health: Environmental Injustice & Colonialism in the Grassy Narrows Population

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Introduction

The Asubpeeschoseewagong, or the Grassy Narrows First Nation have experienced one of the most detrimental aftermaths of environmental toxicity in the history of Canada [1]. In 1962, Dryden Chemicals, an industrial paper and pulp plant, was built in Dryden, Ontario, Canada [1, 2]. From 1962 to 1970, Dryden Chemicals, upstream of Grassy Narrows, leaked approximately 10,000 kg of mercury into the English-Wabigoon River [3, 2]. Mercury poisoning, or toxicity from the consumption of mercury, has adverse repercussions on human health [4]. Research indicates that eating mercury-containing seafood such as fish which contaminated 90% of the Grassy Narrows residents, left devastating intergenerational outcomes that are still experienced in this population today [5]. This paper aims to analyze the role of the Canadian government, class structure, and colonialism in the health effects of mercury poisoning in the Grassy Narrows community.

The role of the Canadian government

The prime agenda of the Canadian government in the 1800s to 1900s era was to build a nation through establishing colonies and the assimilation of Indigenous populations [3]. In the late 18th century, the Royal Proclamation Act enabled European settlers to create colonies in Indigenous territories and conduct business [5]. This was a major step towards instilling settler colonial practices and controlling land in Grassy Narrows. As a result of this policy, companies that dealt with hazardous chemicals were constructed near Indigenous communities [5].

In the 1940s, the Ontario government controlled the community's fishing practices through the implementation of policies of conservation and management [6]. Due to the strategy of forced licensing and regulation, the government weakened the subsistence economy of Grassy Narrows such as fishing, trapping, and hunting [3].

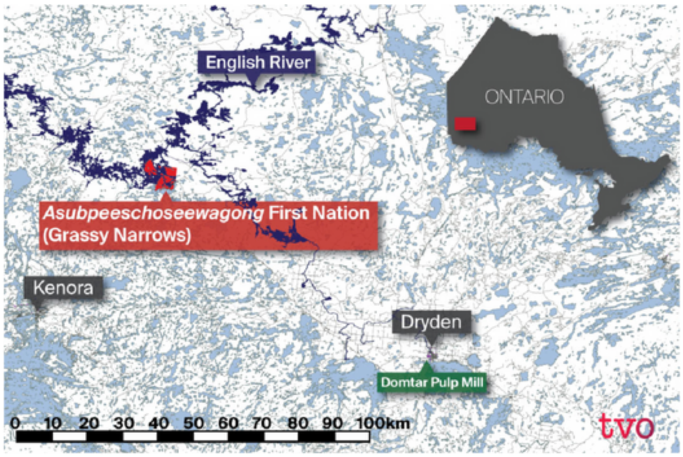

Figure 1. The colour red in the map above showcases the areas of exposure in the Grassy Narrows community. The dark blue colour is illustrative of the route of exposure through the English-Wabigoon River. Finally, the grey colour is representative of the source of the environmental hazard, Dryden Chemicals [6].

Furthermore, in 2017, the provincial government committed $85 million to clean up the alarming levels of contamination that persists in the English-Wabigoon River, but to this date, no initiative as started [6].

The chronic neglect of Grassy Narrows First Nation by Canada has had an impact on their well-being. About 60% of the Canadian non-Indigenous population report their health as “good or excellent”, in comparison to 21% of people living in Grassy Narrows [8]. Studies also disclose that about 10% of all teens in this population have now developed psychological illnesses such as depression and anxiety [8, 9]. To add to this, in Grassy Narrows, 37% of children aged 9 to 11 have emotional and behavioral problems, 23% of youth aged 12 to 17 years have chronic ear infections, and 52% of the youth struggle in school due to decreased attention span and difficulty understanding [10]. Hence, the policies and agenda of the Canadian government has caused the Grassy Narrows population to face troubling health outcomes.

Class structure

While the First Nations of Grassy Narrows faced life-threatening problems, Dryden Chemicals continued to reap the benefits of exploiting Indigenous land [1]. When mercury poisoning was discovered in 1970, Dryden Chemicals changed their name to prevent liabilities [2]. However, they remained under the same management and acquired net profits of $235 million, with an average of $40 million every year [3]. In 1985, Dryden Chemicals paid $50 million in dividends [3]. This shows class oppression because while Dryden Chemicals continued to gain revenue, the low-income Indigenous population of Grassy Narrows experienced disastrous financial turbulences due to mercury poisoning [8]. In particular, for adults aged 18 to 49 years old, mercury poisoning was higher among those that did poorly in school and earned less than $20,000 dollars a year [10].

A study revealed that Indigenous men who worked in the commercial and recreational fishing industries were more vulnerable to the consequences of consuming mercury poisoned fish [1].

Further, small budgets as well as a colonial regime and market economy that undermined Indigenous food sovereignty led to irregular diets that in return, contributed to type 2 diabetes, cancer, and thyroid-related diseases that were previously never observed in Grassy Narrows [9, 10]. The economic losses from the fishing ban imposed by the government caused a 95% unemployment rate in this population [3]. Unemployment resulted in heightened the rates of alcoholism, negative self-evaluations, and daily violence [9]. Thus, class structure-based oppression has ravaged the Indigenous land and people of Grassy Narrows who were and still are facing socioeconomic hardships due to mercury poisoning [3].

Colonialism

Mercury poisoning in Grassy Narrows can not simply be recognized as an incident of environmental injustice without looking at the embedded colonial practices. Colonial strategies often stem from patterns of misrecognition of minority cultures [2]. Misrecognition appears in the form of degradation and devaluation of cultural groups [4]. Damage to the Anishinaabe land by Dryden Chemicals and the government was devastating for the Grassy Narrows population because their territory is embedded within their identity. Removing Indigenous peoples from their traditional land and polluting it compromises their spirituality, culture, and collective survival [2]. Henceforth, misrecognition and domination tactics that are deeply rooted in the public and private spheres have resulted in the industrial destruction of the Grassy Narrow’s ways of life [10].

Moreover, in the historical context, science's role was not objective when issues caused by colonialism arose [5]. Science has long been manipulated and ignored to favor those in power and oppose people suffering from oppression by class structures and colonialism [7]. Science was a colonial tool for oppression in the case Grassy Narrows as scientists downplayed evidence of mercury poisoning [3]. For instance, Dr. Masazumi Harada supressed the ramifications of mercury poisoning [4]. This prolonged the harmful consequences of mercury being dumped in the Indigenous territory of Grassy Narrows [4]. First Nations people in this area who were diagnosed with mercury poisoning were six times more likely to develop a neuropsychological disease, five times more likely to have intestinal deficits, and three times more likely to experience blindness or vision problems [8]. Government officials and scientists hiding the complications of mercury poisoning in Grassy Narrows exemplifies the hidden colonial agenda that was engrained in this crisis. The reality is that the severity of mercury poisoning was downplayed, demonstrating institutiona- lized oppression of Grassy Narrows First Nation [3].

Conclusion

An analysis of the role of the Canadian government in mercury poisoning showcases that a primary objective of the Canadian government in the 1900s was the assimilation and political and economic domination of Indigenous people [2]. The Canadian government adopted strategies such as avoiding the clean-up project and suppressing scientific evidence of mercury poisoning in Grassy Narrows [7].

Even in 2023, there is little action nor initiative from the government geared towards the immediate support for the environmental toxicity caused from mercury poisoning. In addition, scrutinizing the general class structure indicates that capitalist corporations have reaped the benefits of improperly disposing mercury, whereas the low-income First Nations of Grassy Narrows continue to experience negative health outcomes [10]. Finally, examining the concept of colonialism in the Grassy Narrows context stipulates that the effects of mercury poisoning are largely a result of policies that were designed to take control of Indigenous populations and their lands [3]. All-in-all, the Canadian government must urgently work with Grassy Narrows First Nations to remediate the environment and hold the industry accountable for the detrimental harms that it caused. [7]. The story of Grassy Narrows is one that needs to be told to every Canadian, not only for the purposes of raising awareness, but also starting conversations of truth and reconciliation, and decolonization.

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Diet and Dysfunction: The Association Between Thyroid Dysfunction and the Rapid Dietary Transition from a Traditional High-Iodine Diet Amongst Greenlandic Inuit

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Introduction

This editorial and artwork aims to advocate the need for improved access to diagnostic services to mitigate a potential increase in thyroid dysfunction amongst Greenlandic Inuit and across the circumpolar north. This editorial will further suggest that this increase in thyroid dysfunction may be associated with a recent dietary transition away from a traditional, high-iodine diet towards an increasingly westernized, low-iodine diet.

Thyroid Function and Dysfunction

The thyroid produces tetraiodothyronine (T4) and triiodothyronine (T3), hormones that interact with thyrotropin-releasing hormone (TRH) from the hypothalamus and thyroid-stimulating hormone (TSH) from the anterior pituitary gland as part of the hypothalamic-pituitary-thyroid axis [1]. T4, TRH, and TSH function to maintain homeostasis, while T3 is the active form of T4 [1]. T3 plays a major role in regulating body function, inclusive of metabolism, growth, heart function, fertility, the central and autonomic nervous systems, cognition, bone formation, digestive function, and ophthalmic function [1]. Hyperthyroidism refers to high levels of T3 and T4, whereas hypothyroidism refers to low levels, with TSH being inversely related. Overlapping symptoms of these disorders include fatigue, skin conditions, hair loss, weight changes, slowed cognition, visual disorders, altered heart rate, tremors, osteoporosis, depression, insomnia, and more [1].

Dietary Trends Amongst Greenlandic Inuit

Greenlandic Inuit, composing almost 90% of Greenland's population, have historically consumed high amounts of iodine [2, 3]. This diet dominated by marine life resulted in iodine intake proposedly greater than tenfold World Health Organization (WHO) recommended levels [4, 5]. Based on food samples purchased and examined in East and West Greenland from kalaalimineerniarfiks (slaughterhouse and markets) and directly from hunters, the values of iodine in traditional marine foods were found to range up to 1380μg/kg [4]. It is suggested that a traditional Greenlandic Inuit diet results in iodine intake in the order of 200μg/24h up to 1700μg/24h [4]. Contrasting this, a westernized diet consisting of foods imported to Greenland results in iodine intake at about 40-50μg/24h [4]. For reference, the WHO recommends a mean intake of 150μg/24h [6]. Recently, a westernized diet of imported foods with little to no iodine has competed against a traditional diet, with imported foods comprising 75-80% of total energy consumed by Greenlandic adults as of 2013 [2, 5]. It is expected that imported foods will continue to take over Greenlandic Inuit energy consumption due to factors such as marine contamination, climate change, and media influences [5, 7].

Local Incidence of Thyroid Dysfunction

Historically, thyroid dysfunction has been rarely recorded amongst Greenlandic Inuit. Over nearly 200 years, only two cases of hyperthyroidism were reported, in 1903 and 1929 [8]. However, over a 2-month period in 1998, five cases of Grave's disease causing hyperthyroidism were reported [8]. Since then, there appears to be a recent upwards trend in thyroid dysfunction in Greenland, with more cases being documented [2]. While this could be linked to improved diagnostics, it may also reflect an increase in incidence [8].

The Link Between Diet and Dysfunction

As can be inferred by their molecular names, iodine is a vital component of T3 and T4 [1]. Notably, the body does not produce iodine, therefore it must be obtained from diet [9]. Iodine deficiency can cause both hypothyroidism and hyperthyroidism [10, 11]. It has been significantly shown that, as the consumption of traditional foods decreases, so does urinary iodine excretion to the point of suggesting deficiency [12]. Furthermore, it has been found that Greenlandic Inuit may have adapted to excessive iodine intake over centuries, which would suggest the need for higher iodine intake than WHO recommendations to prevent deficiency [2]. This hypothesis is supported by a pattern of hyperthyroidism and hypothyroidism amongst Greenlandic Inuit with adequate iodine intake according to the WHO that was similar to patterns seen in iodine-deficient populations elsewhere [2].

The Need for Access to Diagnostic Services

Greenland's health system and diagnostic practices are under strain due to small, geographically dispersed communities and a lack of permanent and specialized staff, with 17 physicians for every 10,000 inhabitants [3]. Despite the wide array of symptoms associated with hyperthyroidism and hypothyroidism, the prognosis is often good as both are fairly treatable on the basis of appropriate diagnosis and pharmaceutical, radioactive, and/or surgical management [13, 14]. Thyroid dysfunction is often easily identifiable and typically involves blood tests to determine levels of TSH, T3, and free T4 given the non-specificity of symptom presentation. Without such diagnosis and treatment, however, adverse outcomes are more likely [14]. Therefore, local diagnostic practices largely determine the severity of outcomes associated with thyroid dysfunction.

Local and Global Diagnostic Implications

In a global context, dietary transitions away from traditional foods high in iodine can be seen across the circumpolar north, with suggested similar dietary change patterns across all Arctic Indigenous populations [15]. Given the improved prognoses associated with early diagnosis and treatment, this editorial proposes increased access to diagnostic services across Greenland and other regions in the circumpolar north where there are geographic and staffing limitations. This could involve increased local education and training, recruitment of community health nurses and other health care providers to provide diagnostic services such as routine bloodwork, and the implementation of telehealth services to allow for consultations across large distances. These measures should be extended across the circumpolar north to regions where diets are becoming increasingly westernized to mitigate the potential increase in thyroid dysfunction that may otherwise go largely undetected. Relatedly, appropriate levels of iodine intake for Greenlandic Inuit should be investigated in future research to inform dietary guidelines to prevent iodine deficiency and the associated risk of thyroid dysfunction.

Conclusion

This editorial is of the opinion that there is an association between an increasingly westernized diet low in iodine and an increase in thyroid dysfunction prevalence amongst Greenlandic Inuit. This decrease in iodine intake could prove particularly detrimental given that Greenlandic Inuit may have adapted to historically high levels of iodine, therefore requiring greater intake than WHO recommended levels to prevent deficiency. This emphasizes the need for improved access to diagnostic services to mitigate a potential increase in thyroid dysfunction incidence that may accompany projected dietary trends in Greenland and across the circumpolar north.

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ART SUBMISSION

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Diet and Dysfunction: Iodine Intake and Thyroid Dysfunction Amongst Greenlandic Inuit

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This artwork aims to visually depict the potential association between thyroid dysfunction and the rapid dietary transition away from a traditional high-iodine diet amongst Greenlandic Inuit, as described in the associated opinion editorial. To visualize this issue, this artwork depicts an Arctic Char, an iodine-rich fish native to the Arctic and consumed in Greenland, contained in a prescription vial. The label on the vial is not without intention - this is a prescription label for levothyroxine, a synthetic form of thyroxine (T4), which is commonly prescribed to treat hypothyroidism. As foods rich in iodine, like this Arctic Char, continue to be replaced by westernized foods, then the need for medications like levothyroxine is subject to change. This editorial and artwork aim to advocate the need for improved access to diagnostic services to mitigate a potential increase in thyroid dysfunction amongst Greenlandic Inuit and across the circumpolar north.

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Beyond Broken Promises

Inara Rattani,[1] Illustration by **Melinda Meleki**[2]

[1]McMaster University, Faculty of Health Sciences
[2]McMaster University, Faculty of Sciences

Beyond Broken Promises is a poignant commentary on the agonizing legacy of colonialism in Africa. The poem sheds a piercing light on the profound and enduring impacts of colonial exploitation on the African healthcare system whose effects are present to this day. The poem serves as a clarion call to urgently address the ongoing injustices dating back to the colonial era, inspiring readers to take action toward dismantling the deep-seated structural inequalities in the African healthcare system.

The opening stanza of the poem captures the bitter irony of civilized colonial powers who promised to bring progress and development into African nations, only to deceptively exploit the land and its people in a barbaric manner. By exposing the hollowness of such promises, the stanza reveals the insidious impacts of colonialism on the continent, which left the colonized feeling like mere pawns in the colonizers' game, perpetuating generations of suffering and injustice.

The second stanza depicts how colonial powers exploited Africa's resources, while simultaneously introducing harmful pathogens into the continent. The metaphor of a poisoned brook is used to depict how diseases like cholera were brought by colonizers. The damaged healthcare system is the remnant of the race between colonial powers, favouring the privileged while neglecting marginalized communities.

In the third stanza, the metaphor of a snake is employed to illustrate how colonialism left many Africans susceptible to foreign diseases without access to proper treatments. The stanza emphasizes the tragic irony of how the same colonial powers that introduced these diseases into Africa failed to provide adequate healthcare infrastructure to effectively address them, leaving countless individuals at risk of deliberating illnesses. The poem's speaker highlights her internal struggle against the desperate idea of begging the colonizers for an antidote to the colonial impacts on the healthcare system. This request remains unfulfilled, invigorating in the speaker a sense of despair and hopelessness.

The fourth stanza marks a pivotal turning point in the poem, as the speaker's initial sense of hopelessness transforms into a passionate plea for help and a call to recognize the enduring legacy of colonialism. The speaker reckons that healing can only come through a collaborative effort to address the deep wounds inflicted by colonialism.

In the final stanza of the poem, the theme of light is employed as a symbol of hope and transformation. The speaker suggests that there is a way to right the wrongs of the past and make healthcare a universal right through collective efforts. The stanza uses evocative imagery to depict the dawn of a new era, in which the shadows of colonialism are dispelled, and the light of progress and justice shines brightly. Through this inspiring conclusion, the poem invites its readers to join in the effort to create a brighter future for all.

The ancient wounds run deep,
As 'civilized' men came to reap.
With promises of health, wealth and fame,
It seems as though we were just their game.

The treasures of the land they took
Left us to drink from a poisoned brook,
And the remnants of their race
Broke our systems to favour those with power and grace.

Your snake spread its venomous bite,
And left me with nothing, but fear and spite.
I slayed demons before I came begging for the antidote,
But to this day, my request is left afloat.

Don't let me be a mere fool for a girl,
Who patiently dreams for her wishes to unfurl.
You have to help me heal the wounds of the past,
For this is the only way we can build a future better than the last.

As I stare into this light,
I pray that together we can stand this fight.
Let a beacon of hope be ignited
In a world where health is a universal right.

INFECTIOUS DISEASE

“There is no one size that fits all. We must work country by country, region by region, community by community, to ensure the diversity of needs are addressed to support each reality”

Amina J. Mohammed, Deputy Secretary-General of the United Nations

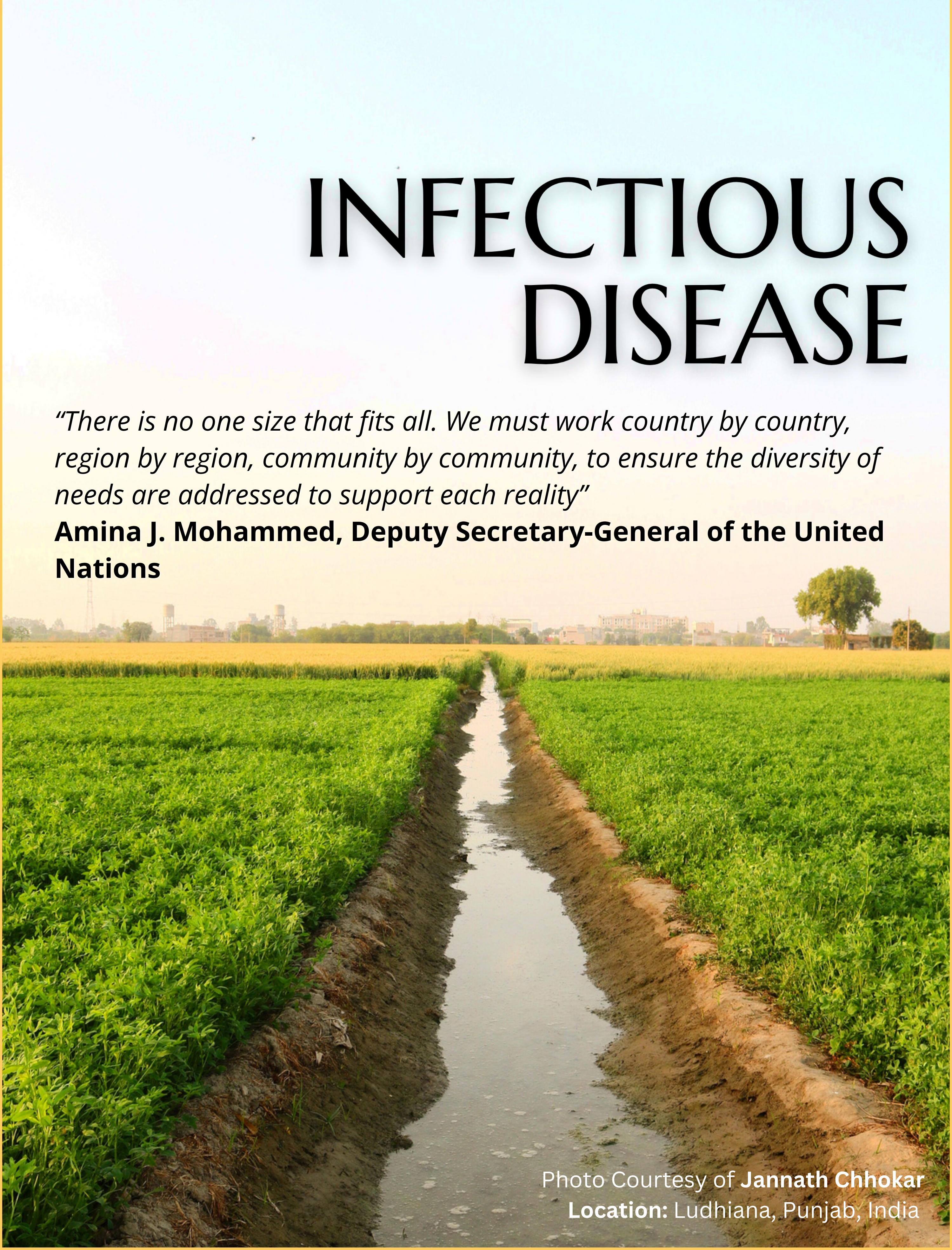

Photo Courtesy of **Jannath Chhokar**
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ORIGINAL RESEARCH ARTICLE

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An Analysis of Neglected Tropical Disease Research after a Decade of World Health Organization Action

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Abstract

For decades, Neglected Tropical Diseases (NTDs) have persisted among the poorest global populations, creating a significant burden on already fragile healthcare systems. The World Health Organization (WHO) recognizes the complex impact that these diseases have on the well-being of individuals in many low-income countries (LICs) and thus renewed its efforts in 2007 to garner global support for eliminating NTDs. However, an important question is how this action has shaped NTD research. This scoping review aims to describe if and how NTD research has evolved between 2010 and 2020 to identify gaps in the field that should be addressed to bring the diseases closer to elimination. It examines articles from the OVID global health database published in 2010, 2015 and 2020 to identify trends in the focus (etiological, intervention, or policy) and geographic location (low-, middle-, or high-income countries) of NTD research. The results identify two key gaps in NTD research that have not been addressed since global health action began in 2007: an underrepresentation of first authors affiliated with low- and middle-income countries, and a relative lack of policy-focused research. Thus, we recommend that global health actors improve NTD elimination efforts by increasing policy-focused research and encouraging low-income country authorship.

Introduction

Neglected tropical diseases (NTDs) are a class of diseases that affect the "bottom billion", the poorest one-seventh of the global population [1-4]. There are roughly forty NTDs identified worldwide [5]. The World Health Organization (WHO) focuses on 20 of the most pervasive ones, listed in Figure 1 [5]. NTDs are not linked by their pathology, but instead share a common social and geographic distribution [6,7]. They affect individuals in low socioeconomic conditions with limited access to education, clean water, sanitation, and health care; and they are concentrated in tropical climates [5]. NTDs can also cause chronic disabling conditions [2-5,7-9]. In 2010, the Global Burden of Disease study found that all NTDs accounted for 27 million disability-adjusted life years lost [10,11]. This value is greater than those estimated for malaria or tuberculosis (TB), two diseases that have received far more attention from the global health community [4].

Despite their pervasiveness and devastating burden on fragile healthcare systems, NTDs have been neglected from global health discourse for decades [4]. Experts attribute this neglect to the disproportionate attention to human immunodeficiency virus (HIV), malaria and TB [12], and to the inequitable access to healthcare in NTD endemic regions [3,4,13].

In 2007, the WHO and other global health actors began taking action to reduce the prevalence and burden of NTDs. They have released two global action plans and four comprehensive reports that have elevated efforts to combat NTDs and increased donations from pharmaceutical companies and non-governmental organizations (NGOs) [6]. Notably, in 2016, the UN recognized NTDs for elimination in the third Sustainable Development Goal (SDG), marking one of the first times that global targets were set to combat NTDs [14].

Given these efforts, we conduct a scoping review to examine if and how global health research has evolved to better address the root causes of NTDs' pervasiveness.

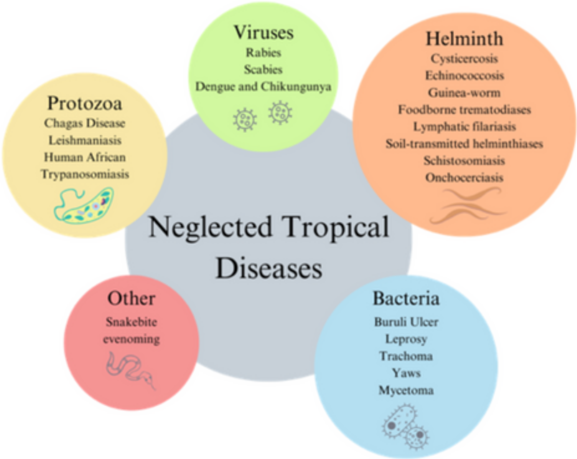


Figure 1: List of Neglected Tropical Diseases Based on Their Causative Agent

Methodology

We searched the literature using the Ovid Global Health database as its focus on communicable, tropical, and parasitic diseases as well as community and public health research [15] aligns with our study aims. We considered articles published between 2010 and 2020 using the search term "Neglected Tropical Diseases", and we focused on abstracts. Changes in NTD research would be expected after earnest global efforts began in 2007. We did not consider articles published after 2020 given the likely impact of COVID-19 drawing attention away from NTDs.

Due to time constraints, we only considered articles published in 2010, 2015, and 2020 to identify trends. Two independent reviewers applied the inclusion and exclusion criteria (Table 1) to the title and abstract.

Table 1: Inclusion and exclusion criteria for title and abstract article review

Include	Research published in all countries
	Primary and review articles
	English publications
	Articles on NTDs generally, on one or more NTDs, or on treatment options/intervention plans
Exclude	WHO reports, letters to the editor, pre-print works
	Non-English publications
	Articles focused on Malaria, HIV/AIDs, Tuberculosis, or other non-NTD communicable diseases

One reviewer extracted data for all articles and the second reviewer extracted data for every tenth article to check accuracy. The extracted data items include: the focus of the research (etiological, policy, or intervention), the type of research article (primary or review), the publication year (2010, 2015, or 2020), the NTD(s) studied, the country of the first author's research institute, and the paper's country of focus (if any). Etiological research explores the causes of disease; policy research examines access to interventions, distribution programs, local understanding of NTDs, and global efforts to combat NTDs; and intervention research focuses on current and potential therapeutics. All data extraction was conducted using Covidence software.

Results

The literature search returned 340 articles for the years 2010 (48 articles), 2015 (118 articles), and 2020 (174 articles) combined. During the title and abstract review, 33 papers were excluded because they did not meet the eligibility criteria.

A key finding was that there continues to be an underrepresentation of LIC first authors in NTD research. Figure 2 shows that LIC first authors consistently made up the smallest proportion of all authors studying NTDs. The proportions of first authors from LICs, middle-income countries (MICs), and high-income countries (HICs) in the three years were not significantly different (X2=4.98, d.f.=4, p=0.30).

However, Table 2 shows that more than half of the first authors are from HICs, even though only a small fraction (10/145 = 7%) of the research has an HIC as the country of focus (when specified). Where the country of focus is not identified, two-thirds (110/162) of first authors are from high- income countries.

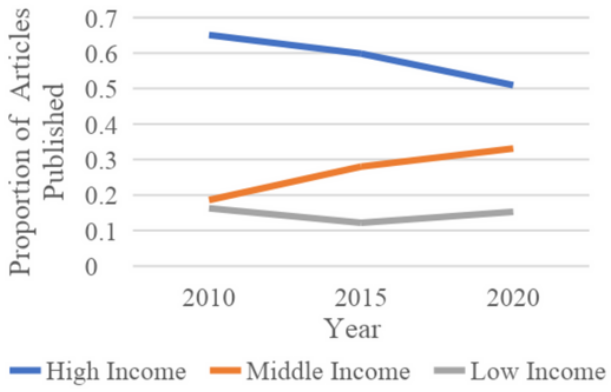
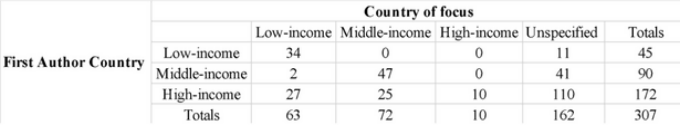


Figure 2: Proportion of NTD research first authors' country affiliation by year.

Table 2: Comparison of study's first author country affiliation to the study's country of focus



		Country of focus				
		Low-income	Middle-income	High-income	Unspecified	Totals
First Author Country	Low-income	34	0	0	11	45
	Middle-income	2	47	0	41	90
	High-income	27	25	10	110	172
	Totals	63	72	10	162	307

Note. If an NTD research paper was focusing on a specific country, the country was recorded and then further classified into low-, middle-, or high-income. If the NTD paper did not specify a country of focus (COF), usually these papers were studying the properties of a medication or the disease, and they were marked as unspecified.

Another notable result is the consistent paucity of policy-focused research from 2010 to 2020. Figure 3 shows that the proportion remains low at roughly 25% of all NTD research and the proportions of etiological, intervention, and policy-focused research across the three years did not change significantly (X2=1.80, d.f.=4, p=0.77).

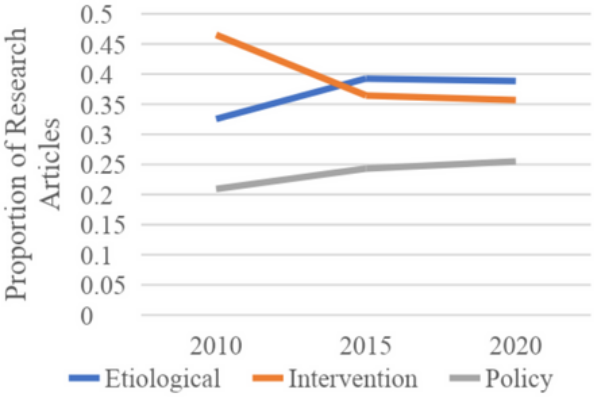


Figure 3: Proportion of NTD research focus by year.

Discussion

The results in Figure 2 and Table 2 reflect the colonial themes that continue to underlie NTD research. HIC actors dominate global health academic authorship, particularly in the field of health equity [16], leading to the underrepresentation of LIC first authors in NTD research. This creates the false narrative that HIC actors are more capable of understanding health inequalities and how to address them and reduces the capacity of those in LICs to act [16]. While donations from HICs, NGOs, and pharmaceutical companies have been instrumental in bringing NTDs towards elimination [17], it is important to consider the input of LICs when combatting these diseases. HIC authors must remain "active research peer[s]" [16] in the field of NTD research, by mandating equitable collaboration between HIC and LIC authors [18]. Furthermore, when different groups of authors do collaborate, HIC researchers disproportionately benefit by receiving greater funding, administrative support, and opportunities to present their findings and continue researching, which is often at the expense of LIC authors [18].

NTDs are complex diseases that are affected by poverty, access to healthcare, sanitation, and education [4,7]. Policy-focused research is essential to understanding how these factors influence NTDs and to structuring treatment plans so that they address these complex needs [4]. For instance, many individuals affected by NTDs live in remote regions outside the reach of any healthcare system or treatment plan [4,19]. Policy-based research can guide the restructuring of treatment distribution programs and access to interventions to reach a broader population [20]. Additionally, current treatment options have been found to cause severe side effects or lose their efficacy over time [21]. Etiological- and intervention-focused research will be important for providing new ways to combat NTDs [4]; however, without any supporting policy-focused research (as is currently seen in Figure 3), treatments will remain inaccessible to many NTD-affected populations.

Conclusion

NTDs have persisted in the most impoverished regions of society for centuries. They are often caused by viruses, bacteria, helminth, and protozoa, but remain pervasive due to a complex network of social and geographic factors that perpetuate a cycle of poverty. Recent global efforts spearheaded by the WHO have begun to renew global solidarity towards addressing NTDs and increase attention to these diseases. This review examines how NTD research has changed since 2010 and identifies gaps that must be addressed by the global health research community. Global health actors must encourage LIC researchers to lead projects given their essential perspective on NTDs and how to address them. Additionally, policy-focused research must continue to supplement etiological and intervention-focused research on NTDs to ensure benefits will accrue to all communities affected by NTDs.

Acknowledgement

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Barriers to Mass Drug Administration Programmes That Sustain the Burden of Neglected Tropical Diseases in the African Continent

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Background

Neglected tropical diseases (NTDs) are a group of twenty communicable diseases of parasitic, bacterial, viral and fungal origins that burden the "bottom billion" of the world, the poorest populations in society living in areas with limited access to water, sanitation, and housing [1,2]. NTDs are mostly found in countries in the Global South which lack the capacity to deal with the disease burden of NTDs due to insufficient resources and weak healthcare systems. The five most prevalent NTDs are: schistosomiasis, trachoma, soil-transmitted helminths, lymphatic filariasis, and onchocerciasis. They can cause severe disability, disfigurement, social stigma, and mortality [2,3]. They also have considerable economic impacts resulting in reduced earnings, low school attendance, and higher dropout rates and health costs [3,4].

The World Health Organization (WHO) recommends the following five strategies for the prevention and control of NTDs: preventive chemotherapy (PCT); intensified case management; vector control; provision of safe water, sanitation, and hygiene (WASH); and veterinary public health measures [3,5]. PCT consists of the administration of antibiotics, anthelmintics, or a combination of these to prevent advanced symptoms and severe complications [6,7]. The drugs are safe, robust, quality-assured, and cost-effective [2,3,8]. Mass drug administration (MDA) programmes are periodically delivered to entire populations regardless of the presence of symptoms or an infection [2,3,8]. Community drug distributors (CDDs) are critical to these programmes in preventing and treating NTDs [8]. They distribute drugs, educate community members, monitor adverse health events, and conduct reporting and census activities [8]. While admirable strides have been made in NTD elimination across the African continent, NTD elimination targets and MDA programmes continue to face several challenges that impact programme delivery and community adherence to drug intake. This article explores some of those programme barriers and will propose reforms required in selected programme inputs.

Barriers

A. Insufficient understanding of local contexts

Complex and intersecting socioeconomic and political factors such as migration, insecurity, urbanization, and gender roles influence access to preventative medicine [2,9]. For instance, migration patterns and seasonal variations result in missed opportunities to administer drugs [10]. A study conducted in Cameroon revealed that migrant farming communities were largely missed during MDA campaigns due to the mobile nature of their work [11]. Likewise, school-based MDA programmes had no defined strategies to reach non-school-going children or those enrolled in private schools [11]. Gender roles can also impact MDA coverage. Male CDDs in Kaduna, Nigeria had limited to no access to female household members without the presence of the head of the household [9]. Individuals that were pregnant, lactating, or belonging to reproductive age were also missed in MDA campaigns due to the lack of inclusive national policies and uncertainty felt by CDDs in administering drugs to these populations [11].

B. Inadequate support affecting CDD morale and retention

The absence of incentives and remuneration leads to demotivated workers who are less willing to perform programme delivery tasks. This is a critical barrier that in turn contributes to high attrition rates [4]. In addition, Polio and HIV/AIDS programmes that provide incentives to volunteers lead to competition, causing drug distributors to disengage from MDA programmes [10]. NTD volunteers dedicate time towards programme activities, resulting in a missed opportunity to generate income [8,9]. However, organizations may not have sufficient funds to pay CDDs and may require additional funding from the government [12]. Furthermore, inadequate support and resources have led to the exclusion of hard-to-reach areas and workers utilizing their own transportation for which they are not compensated [8,9].

C. Limited community agency, involvement, and sensitization

Even with widespread drug delivery, a community's apprehension of PCT can pose barriers to coverage. Mistrust in the programmes and the drugs can impact community engagement and programme acceptability [9]. Awareness of disease and transmission are crucial for the successful implementation of community-directed programmes and incorporating educational components can be beneficial in improving communities' health literacy [4]. However, limited resources to supervise and train staff can lead to staff feeling ill-equipped to sensitize and combat misinformation [5,8,10,13]. Additionally, hypoendemic areas with low disease visibility can lead to a lack of perceived need for MDA programmes, exacerbating challenges in NTD elimination [9].

D. Restrictive programme scope to address underlying challenges

Improving water supply and sanitation can reduce the risk of NTDs [14]. However, reliance on MDA programmes may perpetuate a dependency on chemotherapeutic treatments and disregard for other strategies such as behavioural change, sanitation improvement, case management, and vector control [10]. CDDs in Tanzania described poor levels of water and sanitation infrastructure that prevented behavioural change and disease elimination despite MDA and community education efforts around hygiene and sanitation [12]. Resource constraints and a lack of standardized disease mapping guidelines limit the ability to perform ongoing surveillance and mapping of transmission zones [4,15,16]. This makes it difficult to distinguish between non-endemic and hypoendemic zones and consequently increases the risk of sustained transmission of infection in areas otherwise thought to have eliminated the disease [4]. Lastly, the complexity of local bureaucratic procedures, local organizational limits to ensure accountability, and power struggles between different stakeholders contributed to the failure to aptly identify bottlenecks and learn from operational challenges such as funding and drug supply issues [10].

Looking Ahead

Despite these challenges, there is a growing interest in examining facilitators that could aid in scaling existing interventions in diverse settings and integrating them into local health systems to minimize barriers, build community capacity, and address underlying determinants [15,16]. Some of the focus areas proposed for the equitable delivery of NTD interventions, including MDA, are:

A. Adapting to the local context

The aforementioned barriers demonstrate that there is an optimal window to implement these interventions [10]. Drug distribution plans, as well as any other complementary intervention, such as education or sanitation improvement, should be informed by current epidemiological evidence and should reflect local strengths, needs, socioeconomic circumstances, and cultural traditions [9,10].

B. Improving community ownership and involvement

To eliminate NTDs, implementers must understand community perspectives and needs [10]. This may be achieved through the involvement of key community-level actors as well as passive or active community mobilization approaches wherein members can participate in surveillance, vector control, sanitation, or programme planning efforts [2]. A gender equity lens to promote greater participation of women in the CDD workforce and household decision-making should also be implemented [2,13].

C. Enhancing staff retention, government processes, and collaborative efforts

While external funding has helped to reduce the burden of NTDs in recent times, its restrictions, reductions, or reallocation compromises program sustainability [9, 17, 18]. Moving forward, the sustainability of programmes requires continued support to field staff through incentives, transportation support, and frequent training. Likewise, ongoing logistical and funding challenges warrant a reform of government processes, an increase in political will, and addressing power and priority imbalances between local and international players [2].

Conclusion

The barriers and potential reforms covered in this article are not an exhaustive list and context-specific variations exist between settings. NTD transmission depends on different vectors and animal reservoirs, as well as environmental and socioeconomic factors [19]. This makes NTDs a wicked public health challenge that requires consideration of several intersecting parts rather than a uniform approach to MDA. NTD elimination should be a multilevel and multisectoral collaborative effort that reflects on these implementation challenges and applies data-driven strategies that prioritize community needs and capacity building.

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A Neglected Tropical Disease and Gender Disparity During Wartime

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I can never forget the desperate look of the young lady with a prominent skin lesion on her face who came to see me in 2017 when I was working as a physician in northern Iraq. She was suffering from a disease prominent in the 1940-50s. Although it remained an endemic in certain parts of the country, the trend of the disease had generally been on the decline until 2014, except for a steep rise in cases around the time of the Gulf War in 1991 [1]. However, as the government in Syria began its collapse in the years following 2012, with it came a disruption in the preventative public health measures, causing outbreak of the disease in the region [1]. As Iraq's next-door neighbor, the sandflies that began to appear in Syria soon made their way into Iraq, which also fell into a civil war turmoil soon after, causing an epidemic of an almost forgotten disease, Leishmaniasis –a disease known locally as "Baghdad boil" and in Syria as "Aleppo boil." The case of this patient has since confirmed my belief in the importance of preventive public health measures and caused me to advocate for their return.

Leishmaniasis is a parasitic disease that is classified as a Neglected Tropical Disease (NTD) [2]. It is caused by infection with the Leishmania parasites through the spread by the bite of infected female sand flies, and is endemic in the tropics, subtropics, and southern Europe [2]. There are three forms of the disease, namely cutaneous, visceral, and mucocutaneous. Leishmaniasis largely affects the Global South and Low-Income countries, with profound effects on the populations it impacts [3]. Although relatively controlled with public health measures, including those initially put to control Malaria, there has been a re-emergence of this disease in war-stricken Syria and neighbouring countries [4]. Cutaneous leishmaniasis (CL) is the most prevalent form in Syria and Iraq [4]. Although CL mostly tends to have a benign course compared to the other forms of Leishmaniasis as it often recovers on its own, it leaves prominent skin scars mostly on the exposed parts of the body such as the face. This could lead to significant psychosocial burden, especially among young women in those regions where sexual and gender-based disparities exist.

In stable and high-resource settings where functional public health systems exist, a vector-borne disease like CL could be controlled by implementing strict surveillance of cases, active vector-control measures, social mobilization and strengthening partnership, and constant provision of diagnostic and treatment tools [3]. However, in unstable and low-resource settings, a reversed picture could be seen. For instance, the war in Syria caused a dramatic backward shift in the fight against this disease due to the government collapse in certain parts of the country, which resulted in the collapse of the public health system, destruction of hospitals, and shortage of healthcare professionals who fled armed conflicts [4]. While the incidence rate of CL was estimated to be around 23,000 cases in 2010 in Syria, i.e., one year before the war, a significant rise in cases was noted in early 2013 with around 41,000 cases reported, that is just two years after the start of the war [4].

In 2014, a civil war broke out in the neighboring country to Syria, Iraq, where I was working as a physician. As the war progressed in 2015 through 2017, millions of Iraqis left their homes and the healthcare system almost completely collapsed in certain parts of the country, especially those neighboring Syria in the northwestern region. Along with many other factors such as poverty, malnutrition, poor housing, and sanitation conditions, proper management of the disease in the vulnerable population of the northwestern region was either absent or significantly delayed due to lack of both pharmaceutical and human resources, which caused a further burden on the affected individuals in those settings who already struggled with lacking other basic life necessities.

While the role of the government in the northwestern region, where I joined an international humanitarian organization, was almost completely absent as their focus shifted to the ongoing conflict, most of humanitarian NGOs working in those areas have also fallen short in their response to this outbreak. Due to CL's supposedly "benign" course and "neglected" classification, little to no response was provided and affected individuals were left to face the physical and psychosocial burden of this disease by themselves. I was running a mobile clinic in remote rural areas in the northwestern region where primary health care services were severely disrupted due to the ongoing conflict. Our mobile clinic would mainly provide non-communicable disease care, mental health, and management to some general medical conditions. The team had to travel long distances to reach their target destinations. We started to have patients with classical Leishmaniasis skin lesions coming into our clinics, however, due to lack of appropriate diagnostic and treatment tools, there was nothing we could provide apart from empathy and referral to available governmental healthcare facilities where nothing more could be done.

One day, I was at the clinic when a young woman accompanied by her mother came in. As I asked how I could help them, the mother referred to her daughter's skin lesion on the face. I could instantly recognize the lesion as being most likely Leishmaniasis given history and presentation. I was then ready to re-iterate our standard response when we would see patients with suspected Leishmaniasis. However, the mother had uncovered another reality behind that skin lesion on her daughter's face –the reality of vulnerable young women who could significantly suffer socially and psychologically from the prominent skin lesion. In the context where cultural and tribal habits are still dominant, young women have little say on their personal life choices, such as marriage. They usually get married through family arranged marriages early in their lives. They do not usually complete education or gain proper working opportunities. Therefore, marriage is a fundamental change in their lives. "I'm afraid this lesion is affecting her chances of marriage", the mother stated. The daughter was looking with eyes of weakness and vulnerability. In that moment, I realized that Leishmaniasis is not only a physical disease, but it goes far beyond that in some people's lives.

Ending the neglect to attain the Sustainable Development Goals (SDGs) is a road map announced by WHO in 2021 to end the suffering of around 1 billion people from 20 NTDs, including Leishmaniasis [5]. This is a global strategy that aims to address NTD and accelerate progress towards the achievement of the United Nations' SDGs by 2030. This strategy aims to provide a thorough approach to deal with NTDs by focusing on four key pillars: prevention, treatment, disability, and cross-cutting enablers [5]. Because NTDs disproportionately affect women and girls [6], the Ending neglect to attain the SDGs recognizes the importance of collecting and reporting NTD data disaggregated by gender, age, and other relevant factors, with a gender-sensitive and equitable approaches [5]. That said, the adoption of gender-sensitive approaches in a global effort, such as the Ending the neglect to attain the SDGs represents a growing recognition and understanding of the importance of gender-equity and equality in global health efforts, and the need to tackle the specific health needs and challenges faced by women and girls.

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"During this pandemic, the most vulnerable have been the hardest hit ... We must increase our resilience. We must work together and take an integrated approach to health, hunger, climate, and equity crisis — no one is safe from COVID-19 until everyone is safe."

Volkan Bozkır, Former President of the United Nations General Assembly

COVID-19

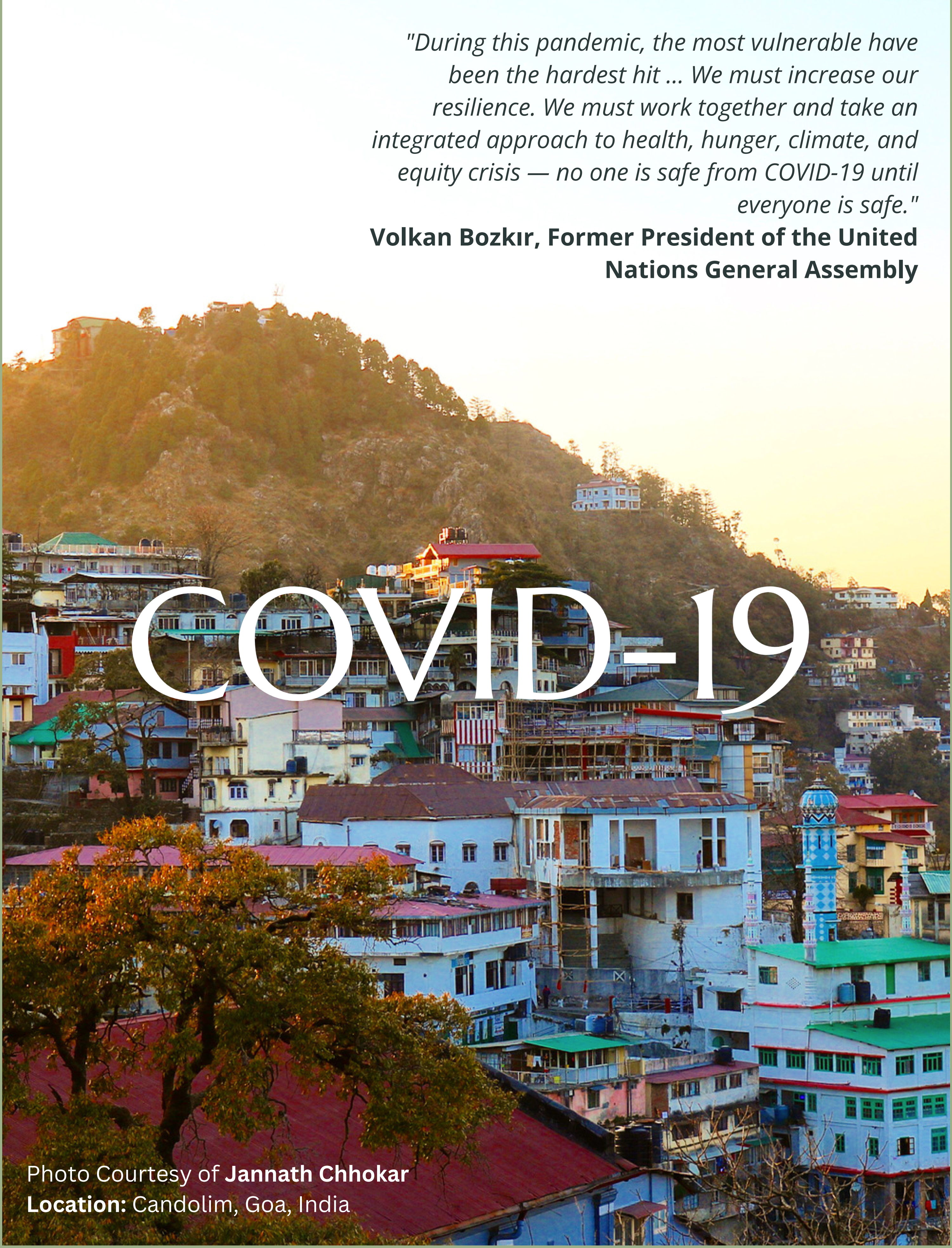

Photo Courtesy of **Jannath Chhokar**
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Covid-19: Investigating the Mental Health Effects on Older Adults

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Abstract

The purpose of this qualitative study was to investigate the mental health effects of the coronavirus disease 2019 (COVID-19) on older adults aged 60 and above living in East York, Toronto, Canada. The inclusion criteria of this research included: individuals aged 60 and above, living in East York, and speaking the English language. Participants were asked questions about their demographics, ethnic background, COVID-19 diagnosis, social support, and coping strategies during the lockdown. Interviews were conducted from November 2021 to February 2022 and recorded with the participant's consent. Transcripts were obtained using the Zoom platform and later edited manually to ensure verbatim transcription. Transcripts were sent to the research supervisor to discuss and identify the themes of the study. The findings revealed that factors such as social distancing and modified daily activities due to the pandemic like gym closures and job loss resulted in increased anxiety, stress, and depression levels of older adults. The results also showcase that social support and coping strategies such as exercising were helpful for the older adults. This study is critical for implementing prevention and intervention strategies geared towards the older population so that there can be more equity-based health policies in place for future global health crises.

Introduction

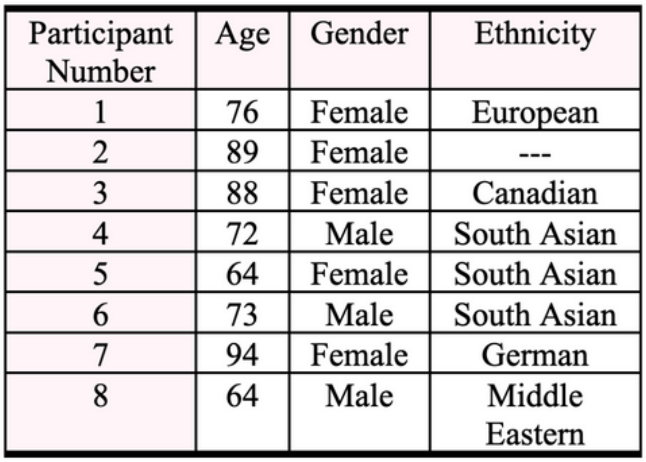
In 2020, the World Health Organization (WHO) called COVID-19 an international health emergency [1]. Researchers soon identified that the risk of mortality from COVID-19 is excessively higher for older adults [1]. Some scholarly papers highlighted that mental health remained roughly stable for older adults and that they were resilient to depressive disorders and stress-related conditions during COVID-19 [2, 3]. Contrarily, other literature revealed that these studies were either conducted during the initial phase of the pandemic or in countries where the lockdown was not yet implemented [4, 5]. The objective of this research was to understand how and to what extent older adults were psychologically impacted by COVID-19 in East York, after more than 16 months into the pandemic. This study also aims to give insight into protective factors against the poor mental health of older adults which can be utilized by decision-makers to implement policies that better mitigate the repercussions of transnational health crises.

Methods

In this study, perspectives of the older population were elicited through qualitative interviews, which were carried out from November 2021 until February 2022. To participate in this study, participants needed to be aged 60 years or older, comfortable speaking English, and living in East York. To recruit older adults, posters that included information about the study and its eligibility criteria were posted on various popular social media platforms. Posters were also hung up in coffee shops and grocery stores in East York. The letter of informed consent was read out to all participants prior to the interview. All participants provided verbal consent for one remote interview by telephone. The interviews consisted of a total of 15 structured questions. Recruitment ended after eight successful interviews were conducted, with no new themes identified. While interviews occurred over the telephone, the student investigator audio-recorded all interviews via the Zoom platform with the consent of the participants. After transcripts were obtained from Zoom, they were all manually checked and edited to ensure that they were transcribed verbatim. A phenomenological methodology was deployed to explore the data and centralize on individual experiences of the participants.

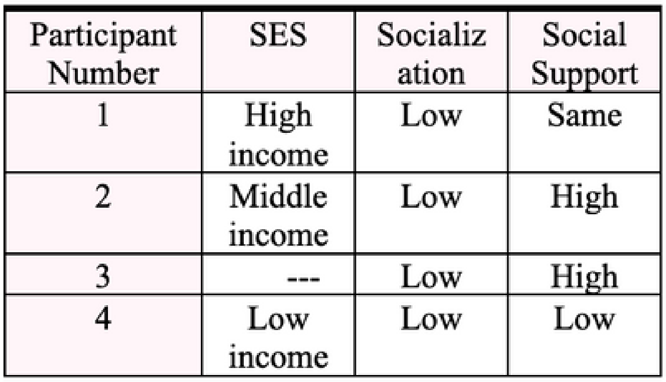
Results

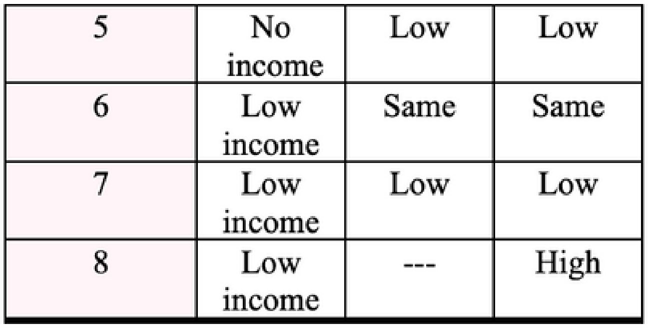
Table 1: Participants' Age, Gender, & Ethnicity.



Participant Number	Age	Gender	Ethnicity
1	76	Female	European
2	89	Female	---
3	88	Female	Canadian
4	72	Male	South Asian
5	64	Female	South Asian
6	73	Male	South Asian
7	94	Female	German
8	64	Male	Middle Eastern

Table 2: Participant's Self-Reported Socioeconomic Status (SES), Socialization, and Social Support Post- Pandemic.





Participant Number	SES	Socialization	Social Support
1	High income	Low	Same
2	Middle income	Low	High
3	---	Low	High
4	Low income	Low	Low
5	No income	Low	Low
6	Low income	Same	Same
7	Low income	Low	Low
8	Low income	---	High

Table 3: The Two Major Themes of the Research Study

Major Themes
Modifications in Daily Activities and its Effect on Mental Health
Protective Factors Against Mental Health Problems

Modifications in Daily Activities and its Effect on Mental Health

The data of this study gives evidence of an association between consistent feelings of sadness or hopelessness with modifications in daily activities. For instance, one participant noted:

"Fully disturbed [daily activities] ...for example, my gym was discontinued, where I was a member of...[redacted]was discontinued, and I work for the real estate as a self-employed independent contractor, so I was meant to see my clients in person, or do, you know those things that require physical appearance" (Male, 64).

Another participant explained:

"You feel sad and hopeless, and you get confused. You don't know what's going on, I'm 72, we were planning to travel to many different countries... when this [COVID-19] erupted..., all our plans went down the drain" (Male, 72).

These quotes are indicative of how modified activities such as gym closures and travel restrictions lead to feelings of hopelessness and sadness among older adults in this study.

Further, when participants were asked about whether there was a change in stressful situations post- pandemic in comparison to before, more than half the respondents expressed an increase in stress. Interviewees explained that psychological distress arose because of COVID-19 restrictions such as social distancing, wearing masks, and not being able to go to mosques. For example, one participant disclosed:

“It [socialization] is very awful, it’s very sad, it's very sad and deteriorating…it’s eating you up… You don’t see any hope, you want to visit your family and you can’t” (Male, 72).

Another participant mentioned:

“I hate to say that the last couple of years of my life, ah, I'm confined to my apartment because of COVID… I feel well enough to go out and do things, but I can’t because of COVID and time is running out for me. I'm at the end of my trip, not the beginning or the middle” (Female, 89).

These quotes illustrate that modified daily activities such as social distancing and not being able to visit family members was a stressor for the respondents of this research.

Protective Factors Against Mental Health Problems

The data exhibited that individuals who stated a high level of social support during COVID-19 mostly did not observe an increase or decrease in appetite, fatigue, or sleep problems because of the lockdown or social distancing requirements. One participant noted:

“Increased [social support] … I mean there's a lot of telephone calls. There's a lot of…people are wanting to make sure I am okay, and I will phone others to make sure they're okay” (Female, 88).

Participants further reported that in terms of coping mechanisms, they started to use coloring books, jigsaw puzzles, watched more television, worked out at home, spent a greater amount of time with their pets, and engaged in activities that they love doing such as cooking. One participant explained:

“Well, the coloring books and the jigsaw puzzles and the knitting [helped]” (Female, 89).

Another respondent stated:

“Certainly, exercising and speaking on the phone with a friend and family more frequently [helped]…we get in the family Zoom once a week… It's been much more active virtually, and there’s been a tremendous help” (Female, 88).

Discussion

Recent studies lacked evidence on the specific psychological consequences that were linked with changes in the daily activities of older adults due to COVID-19 [6, 7, 8]. This study reports that modifications in daily activities such as job loss, travel restrictions, gym closures, decreased social activities, and temporarily closed mosques were associated with poor mental health symptoms such as stress and constant sadness or hopelessness. Comparatively, a study by Webb & Chen [9] supports the findings of this research as they disclose that older adults who practiced social isolation and distancing during the pandemic had negative mental health outcomes such as anxiety and depression.

Moreover, participants in this study reported that some helpful coping strategies are exercising, speaking on the phone and/or over virtual platforms such as Zoom with family members and friends, knitting, spending time with pets, and exercising. Comparatively, the results of a study by Li et al. [1] & Inman et al. [10] support these results as they revealed that that social support and physical activity serves as a buffer against the detrimental effects of reduced resilience on the mental health of older adults.

Limitations

Despite the valuable results, this research has some limitations. This study only interviewed older adults from East York, Toronto. Thus, the study findings areis not generalizable for older adults in other geographical areas. Secondly, due to COVID-19 restrictions, the study design was limited to phone interviews. The lack of face-to-face communication may have hindered the respondents' trust in the principal student investigator, resulting in bias. Finally, the sample size of this research was small and therefore is not representative of all older adults in the East York Community. Future studies should assess the impact of the COVID-19 pandemic on older adults with a larger sample size and a greater diversity in ethnic and income levels.

Conclusions

The findings of this study help identify that factors such as social distancing and modified daily activities due to the pandemic like gym closures and job loss resulted in increased anxiety, stress, and depression levels in older adults. Understanding the nuances associated with mental health issues among older adults is critical as this can help develop context-specific innovative psychological well-being programs to aid at-risk populations. A vital implication of this research is that it highlights the immediate need for having inclusive and equitable access to mental healthcare services and community resources and programs for older adults of different socioeconomic and racial backgrounds to ensure resilience in the face of future pandemics.

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COVID-19 School Closures, A Learning and Health Crisis

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Introduction

The World Health Organization (WHO) defines social determinants of health as non-medical factors that define health outcomes which includes income, social protection, education, food insecurity, and structural conflict among others [1]. Education and health are bi-directionality linked as good quality education is an investment for health and health is a necessity for effective education [2]. Education is a right for all children as defined in Article 28 of The United Nations Convention of the Rights of a Child [3]. This aligns with Sustainable Development Goal (SDG) 4 which aims to “[e]nsure inclusive and equitable quality education and promote lifelong learning opportunities for all” [4].

In all countries, irrespective of their income level, schools provide more than a space for learning to children. Educational facilities also promote SDG 3 which aims to “[e]nsure healthy lives and promote well-being for all at all ages” [4]. School health and nutrition programs provide significant improvements to health and learning outcomes and they also provide developmental gains [5].They promote children’s wellbeing, by providing a safe space, access to immunizations, and providing nutritious meals [2,6]. In particular, feeding programs are associated with improvements in children’s academic performance, physical health and the mental well-being of children [7].

COVID-19 Pandemic and School Closures

COVID-19 was declared a pandemic on March 11, 2020 [8]. One approach to minimizing COVID-19 transmission, involved school closures, impacting 80% of children worldwide [9]. Figure 1 below highlights school closures in various parts of the world. The three regions with some of the longest school closures are North America, South Asia, and Latin America and the Caribbean [10]. An Interactive Mapping tool by UNESCO indicates that 1,291,004,434 learners were affected by the pandemic at its peak on April 20, 2020 and there were 151 country-wide closures [11]. It is estimated that this generation of students’ risk losing $17 trillion in lifetime earnings in present value due to school closures and economic shocks [12].

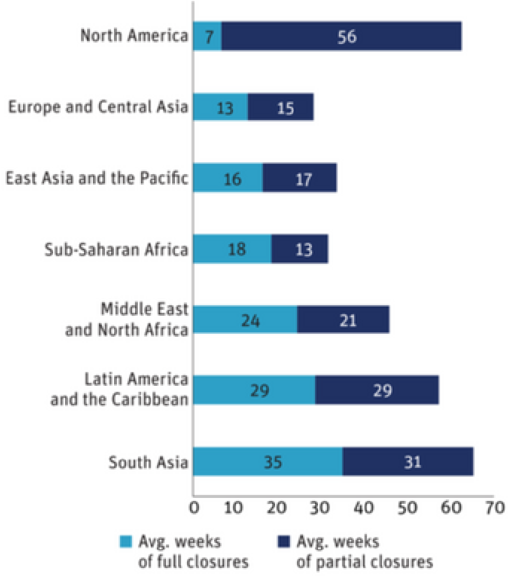

Figure 1. School Closures in Various Parts of the World [10].

School disruptions during public health emergencies exacerbate pre-existing educational inequalities due to uneven access to educational materials [9,13,14]. There were challenges for those in remote areas, those of ethnic minority backgrounds, and those in high poverty schools [14]. For low-income families, some of the challenges were inadequate, unstable, unaffordable access to internet, and lots of instability especially if both siblings were schooling online [14]. The closures have also been very harmful for children already facing discrimination and exclusion such as children with disabilities, girls in countries with gender inequalities, gay, bisexual, and transgender children, children in rural areas, and children already impacted by conflict, amongst others [13].

In many high-income countries, there were widening gaps of existing inequalities. In the United States (US), the pandemic has widened gaps between majority Black and majority White schools [15]. While in Japan, disadvantaged children and younger children suffered the most from school closures [16]. In Sweden, the pandemic had limited impacts on those from disadvantaged socio-economic backgrounds in primary schooling, indicating the varied impacts the pandemic had in countries [17]. In, India, a lower middle income country, there was a cumulative loss for children in their ability to speak languages and their mathematical abilities [18].

Countries in Latin America and the Caribbean had some of the longest school closures. In this region, approximately 170 million children were deprived of in-person education [10, 16]. While in Ethiopia a low-income country, there were concerns for children in rural areas who had limited access to technology as the pandemic widened existing educational inequalities between rural and urban areas in pre-primary and primary education [19]. The impacts of COVID-19 school closures varied by different parts of the world and the impacts were also very different depending on the communities that the closures impacted.

Impact on Health

School closures had many impacts on the wellbeing of children. It is documented that school closures limited physically safe spaces contributing to increased cases of child abuse [2]. The pandemic also led to the deprivation of social and emotional experiences needed for development and wellbeing of children [2]. The loss of a space for learning also impacted access to food, protection, water and sanitation, and mental health and psychosocial support as these are provided through schools [20]. In many lower income countries, the economic crisis caused by COVID-19, has put poor households into greater poverty and some families turn to early marriage as an alternate source of income [2]. Early marriage is known to have determinantal impacts to young girls as they have children at an early age, putting them at a higher risk of pregnancy related complications and death [21].

The pandemic has had negative impacts on children's physical and mental health. A report by Save the Children states that 83% of children globally indicated increased negative feelings since the beginning of the pandemic [22]. In the US, parents reported concerns of their children's mental health due to unfinished learning, with these reports being higher in parents of Black and Hispanic children [23]. The pandemic also impacted physical health as schools are a place for children to exercise and receive a nutritious meal. In the US and the United Kingdom, there have been rising rates of childhood obesity during the pandemic [24, 25]. In the US, the highest increases were seen in younger children with disrupted routines and increased stress contributing to this [24].

Additionally, many children have lost the only nutritious meal they receive during the day losing their vital vitamins and micronutrients which impacts their development and growth. The Word Food Programme (WFP) estimates that over 320 million children have missed out on school meals due to school closures [26]. The pandemic school closures have led to many negative health outcomes for children, and these will need to be targeted as COVID-19 recovery has commenced.

Conclusion

COVID-19 school closures have led to a learning and health crisis in countries around the world. COVID-19 recovery should focus on providing children with safe educational spaces. As the COVID-19 pandemic becomes less of an imminent threat, it is important to work towards reversing the damages to education and health. UNICEF's Learning Passport is one initiative working to minimize educational gaps. During the COVID-19 pandemic, this program underwent a rapid transformation to expand its reach. Currently the Learning Passport operates in 28 countries worldwide and is being deployed in 25 more [27].

To minimize the health impacts of school closures, UNICEF and WFP launched a take-home rations, vouchers, and cash transfers in 68 countries to ensure children's access to nutritious meals [28]. As schools have re-opened, it is essential ensure children are able to catch-up on learning missed during school closures and ensure they have the needed psychosocial support and access to nutritious meals to improve their health.

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Pandemic pragmatics: War metaphors, social cohesion, and the need for a new "menu"

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In the discourse of health crises, language and framing are conceptually inseparable: how a health-related notion is communicated shapes the frame through which it is understood [1-3]. This means that with the emergence of a viral pandemic, how it is reported to the general populace plays a critical role in processes of responsive decision-making and public opinion. Especially when it comes to the attribution of blame, framing has a central role, since it can dictate who or what is problematized [4]. Language is therefore embedded with the potential to either fuel or quell the associated risk of the crisis. Extant literature strongly reinforces this notion of an inextricable link between the content of language and the contours of perception. For example, in her explication of the ideological dimensions of media messages, Heck [5] asserts that "when a message is emitted it is not only what is said that has a significance but also the way it is said, and what is not said but could be said". The discipline of pragmatics also evidences the importance of this link, as it seeks to look beyond the literal meaning of an utterance or sentence by including context in the evaluation of the expression-meaning relationship [6]. Its context-focused conceptual structure renders metaphors as more than just literary devices used to enrich language – they are a key mechanism in the toolbox of meaning-making that directly feed into processes of societal intersubjectivity [7]. A multi-layered exchange of parallelism emerges as the figuration of pragmatic meaning through metaphorical language also reflects meanings of perceived reality and moral understanding [8].

Despite this incontrovertible consensus on the importance of language and framing, gaps remain in the literature regarding best practices for health crises messaging. A standard set of competencies for communicating public health crises has yet to be established [9], allowing for trendy language to dominate how pandemics are framed and discussed. One such trend, common throughout various mainstream channels of public information, is the war metaphor. Linguistic analogies to military terms and images have been widely and unquestioningly used to characterize health crises in mass media, social media, and government press. The COVID-19 pandemic presents a prime example of this hegemony – war metaphors were adopted as the go-to linguistic medium for illustrating danger and urgency, with the intent of expressing a compelling call to action in mainstream news. This is evidenced by Ogbodo and colleagues' [2] content analysis of eight leading global media outlets which found 375 articles that directly espoused a "conflict" frame, including notions of the "frontline" and how "battling" coronavirus as a healthcare worker felt like "war". The war metaphor also dominated social media spaces – topic modeling of tweets with #Covid-19 found that most of the Twitter discourse employed figurative way frames [10].

A Metaphor Identification Procedure of public broadcasts from the Prime Ministers of Malaysia and Singapore found that war metaphors conceptualized COVID-19 in political spheres as well [11]. The euphemism of a “long battle ahead” was used to frame the pandemic as urgent and dangerous, and this frame was not exclusive to specific cultures – on several occasions, President Donald Trump of the United States and President Emmanuel Macron of France referred to the virus as an “invisible enemy” and that “we are at war” [2].

Alternatively, social cohesion theory explores the degree of, as well as the factors involved in, both the absence of latent social conflict and the presence of strong social bonds [12]. Its beneficent essence substantiates social cohesion as a fundamental ingredient of any healthy society and its capacity to overcome health crisis, including pandemics. Yet pragmatic analyses suggest that the blaming implications of war metaphors seem to lie in opposition to social cohesion. For example, Wald [13] describes how “outbreak narratives” can affect the “identities” of the people concerned. From this conceptual lens, an inherent binarization of ‘friend’ and ‘foe’ can be identified in the war metaphor. With this notion is the innate need to attribute blame to a specific entity as the ‘villain’ of the situation, often being people groups due to the essentialist perception of warfare as occurring between humans. As the disease is vilified through military language, the villainizing narrative is extended to carriers of the disease, therefore discreetly painting patient populations, in addition to those of similar visible profiles, as ‘foes’. From an intersectional perspective, at the end of such a sequence is the exacerbation of social stigma, racism, and other unjust and divisive social forces.

Dhanani and Franz [14] present a strong example of this through their experimental study of the effects of COVID-19 framing in the United States. The war metaphor frame created a conceptual space wherein the notion of a threatening outgroup was essentialized and themes like ‘invaders’ and ‘militants’ correspondingly became intertwined with foreign populations closely linked to disease “threats”. In conjunction with this greater warfare narrative, the use of stigmatizing language and Asian framing led to sharp increases in American xenophobia and prejudice. The attributions of blame and risk escalated political tension and violence on both the local (within the United States) and global (against China) levels, thereby reinforcing the contrariety of the war metaphor frame and social cohesion. Furthermore, such spikes of racialized social discord presented a continuation of Murdocca’s [15] idea that pandemic media spectacles were often contingent upon spatial delineations of race and degeneracy, in line with the war narrative of a distinct ‘enemy’. The resulting representation of immigrants as vectors of disease reinforced the coercive power of the state and society over racial bodies and ultimately promoted the dehumanization of racialized identities within and across state borders. Similar consequences followed the employment of war metaphors by Prime Minister Modi of India in his public addresses about COVID-19, which engendered an inflammatory and aggressive blaming narrative that increased harm to already disadvantaged populations [16,17]. Together, these cases illustrated a ‘blame game’ that is antithetical to social cohesion and catalytic for violent inequity.

Metaphors are useful because they provide a way to express complex or abstract information in comparatively simple and concrete terms [18]. However, their powerful ability to frame perception necessitates scrutinizing their inconspicuous features and enigmatic real-life outcomes, especially in situations where an acute disease phenomenon is accompanied by immense public information flow. In the context of pandemics, pragmatic analyses suggest an intangible relationship between the blaming implications of war metaphor norms and social rift. Thus, a different mode of expression is required – one that exchanges themes of conflict and violence for language connotated by peace and cooperation. One method can be drawn from the scholarship of Frank [19] who advocates for a need to think with stories in medicine, as opposed to the conventional metaphors of war. Similarly, the metaphor of a journey, common in the cultures of Sub-Saharan Africa, to illustrate the HIV experience presents another avenue by which militaristic notions can be surrendered for themes that better support the goal of healing and recovery [20].

Overall, ‘pandemic pragmatics’ reveals a grave need for plurality in the “metaphor menu” [21] of pandemic discourse in order to address the counterproductive impacts of war metaphors on how societies associate with pandemics. Moreover, a pursuit of social cohesion must be inherent in how pandemics are framed throughout local and global communication to actively extinguish the potential for the disadvantaging of certain populations.

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> *"Access to quality healthcare is a fundamental right that every woman should have."*
>
> **Malala Yousafzai, Nobel Peace Prize Laureate & Education Activist**

WOMEN'S HEALTH

Photo Courtesy of **Vinh Dao**
Location: Lao Cai, Vietnam

Menstrual Health Management in Bidibidi, Uganda

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Introduction

The impact of menstrual health on the reproductive, physical, and psychosocial well-being of young girls bears notable significance. Regrettably, this crucial aspect is frequently disregarded, particularly within refugee and rural settlements throughout sub-Saharan Africa [1]

Simbi Foundation (SF), a non-profit organization that aims to enhance access to education in Bidibidi refugee settlement of Northern Uganda, researched the specific impacts of Menstrual Health Management (MHM) on adolescent girls in this particular setting.2 Having worked alongside interns and researchers at SF, we acknowledged the importance of implementing sustainable community-driven solutions that can improve secondary school enrolment rates and overall health and wellbeing of female adolescents. This is further supported by the role of education on MHM, access to Water, Sanitation and Hygiene (WaSH) facilities and aims to achieve gender equality being core tenets of the 17 United Nations Sustainable Development Goals (SDGs) [2,3]. However, achieving these goals requires adequate governance structures that promote comprehensive policy and regulatory frameworks addressing MHM; enforce plans to reduce poverty; and understand cultural perspectives surrounding menstruation among vulnerable communities [4] This editorial will delve into recommendations we believe will help improve MHM among female adolescents specifically in Bidibidi, Uganda using the Hierarchy of MHM Needs.

Background

Uganda has an open-door policy towards immigration allowing people escaping violence, instability, and famine from countries such as South Sudan, DRC, Burundi and Somalia to settle in camps [5]. These individuals are afforded the chance to establish residences in settlements like Bidibidi, which has emerged as one of the most expansive refugee settlements globally. Currently, the population of this camp exceeds 240,000 individuals, encompassing a demographic that is 10% adolescent girls aged 12 to 17 years old [5]. As most girls begin menarche at the age of 12, this opens the potential for many vulnerable experiences related to MHM [6].

In the refugee community, menstrual hygiene care is often not considered a priority and receives little support when compared to other pressing needs such as food, shelter, and safety [7]. However, the consequences of inadequate managed menstrual hygiene can have detrimental impacts on adolescent girls in this environment [7]. These girls already encounter considerable obstacles when it comes to accessing and continuing their education. However, the lack of adequate menstrual hygiene facilities and resources further compounds these challenges [8]. Moreover, the lack of menstrual products encourages girls to use inappropriate items such as cloth, mattress linings and other items, which can result in uro-genital infections [9]. In addition to this, inaccessible and unaffordable reusable menstrual hygiene products force girls to seek alternative means of obtaining them, such as engaging in transactional sex as a means of securing funds to pay for these items [10,11].

Challenges and Barriers to MHM

Effective menstrual health hygiene faces several barriers and challenges that vary from financial constraints, cultural factors, lack of access to appropriate products, inadequate WaSH facilities, and the need for a comprehensive national-level MHM policy [12]. In Bidibidi, the low socioeconomic status of the families residing in the settlement make it challenging for them to afford 'luxury' items such as menstrual products [13].

Moreover, the isolated nature of refugee settlements limits the accessibility of these products, making both single-use and reusable products almost unattainable. The stigma and taboo of menstrual health is shrouded by silence and neglect, with little conversation or education for girls and boys regarding the topic. The prevailing silence surrounding menstrual hygiene management exacerbates the adverse implications it carries, perpetuating discomfort among both children and adults in openly acknowledging the challenges women encounter in this realm. The absence of WaSH facilities within educational environments stands as the primary and most consequential impediment influencing all the aforementioned challenges. These encompass insufficient water supply, the presence of unsafe and inadequate washrooms that fail to provide privacy, and the absence of sanitary mechanisms for appropriate disposal of menstrual hygiene products [6]. The national MHM policy must address the multifaceted adversities that girls experience in the refugee settlement environment.

Recommendations

According to Sommer, Schmitt, and Clatworthy, there is a hierarchy of MHM needs outlining the various considerations for MHM, starting from basic materials and supplies, information, facilities, safety, privacy and, at the very top, dignity [15]. To deliver an effective response, we provide recommendations for the three immediate components of MHM; materials and supplies, WaSH facilities, and education, to deliver an effective response.

Materials and Supplies

Affordability and physical inaccessibility are the primary barriers to accessing adequate menstrual products. To address these barriers, it is essential to establish partnerships with community-based businesses and organizations that locally produce sanitary pads. These partnerships can facilitate the donation or sale of menstrual kits at low cost as well as initiate delivery of subsidies or vouchers to low socioeconomic families. Often, one organization will produce and sell the product and its primary partnering organization will purchase and donate them; this is seen with AFRIpads Foundation and AFRIpads Ltd in southwestern Uganda [16]. Although reusable sanitary pads and menstrual cups are more environmentally friendly and cost-effective than disposable pads, they are not always accessible due to the lack of supportive materials such as water, soap, and a safe space for changing and washing [17]. Additionally, cultural taboos and stigmas associated with menstruation and the lack of education on its use can make it more challenging to promote alternative products [17].

WaSH Facilities

A lack of supportive WaSH facilities especially in schools is a significant barrier for low attendance rate of female adolescents in Uganda. Investing in infrastructure development and engaging communities in the design can help to improve access and use of WaSH facilities. This includes the establishment of safe clean spaces equipped with supportive materials, latrines, and hand-washing stations. Funding for these infrastructures needs to be implemented in secondary schools and that can be achieved through the Uganda government, international development organizations, and private sector actors. For example, PLAN International has worked with schools in Torono, Uganda by adding doors to toilets for privacy and creating "menstrual hygiene management clubs" [18].

Education

To eliminate gender barriers, bullying, and harassment, it is crucial to provide both female and male adolescents with education on menstrual and reproductive health. Short-term solutions can involve providing resources to teachers for training and lesson plan development, which can be incorporated into the school curriculum. Sustainable solutions can entail allocating resources towards students, encompassing comprehensive modules that disseminate knowledge on various aspects of hygiene practice in managing menstruation. These modules should cover topics such as the proper use of menstrual products, understanding the menstrual cycle and reproductive health, addressing the existing stigma surrounding menstruation and promoting overarching positive attitudes towards this natural bodily phenomenon [19].

Conclusion

The suggestions put forward in this editorial focus on the most pressing aspects of the Hierarchy of MHM Needs, but further research and needs assessments are required to develop a more comprehensive understanding of effective solutions to enhance MHM in Bidibidi, Uganda. Implementation of these recommendations will require collaboration between stakeholders from various disciplines such as WaSH, education, health, and government to ensure that they are accountable for the specific policies and implementations within their purview. As stated by the UNFPA "human rights are rights that every being has by virtue of her or her human dignity" [14]. Therefore, when girls are denied access to safe menstrual hygiene management, they are being deprived of their dignity.

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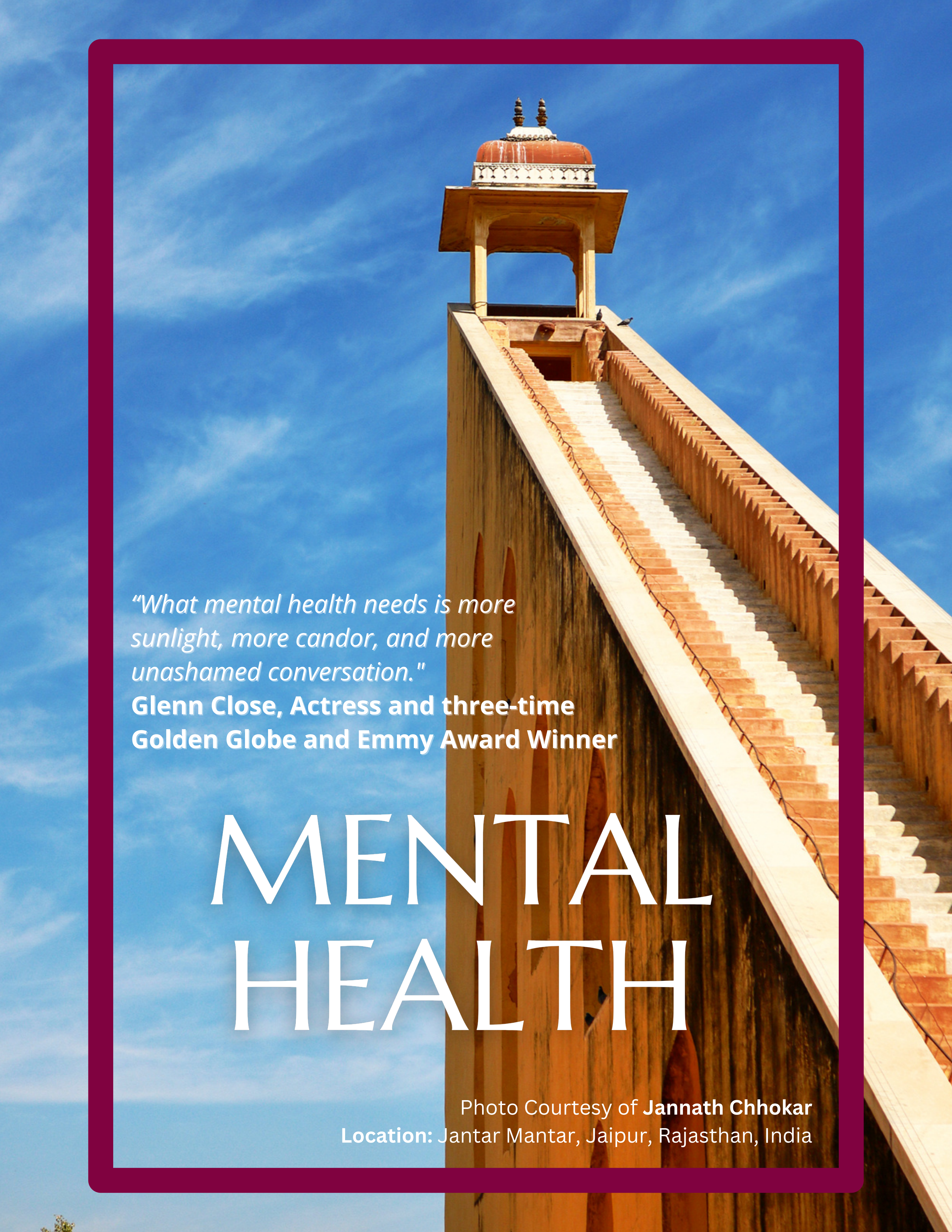

“What mental health needs is more sunlight, more candor, and more unashamed conversation."
Glenn Close, Actress and three-time Golden Globe and Emmy Award Winner

MENTAL HEALTH

Photo Courtesy of **Jannath Chhokar**
Location: Jantar Mantar, Jaipur, Rajasthan, India

Digital Mental Health Initiatives in Nigeria - A Quantitative Interview Study

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Abstract

The direct and indirect impact of the pandemic and its mitigation measures have exacerbated the global mental health crisis. Digital mental health interventions (DMHIs) may have the potential to address health system gaps and global health inequalities in low-and middle-income countries (LMICs). This article aims to map the current state of DMHIs available in Nigeria and illustrate their progress, limitations, and challenges. Twenty semi-structured interviews were conducted with mental health researchers, healthcare providers, and digital health experts. Data was analyzed using Dedoose via thematic analysis. Advantages of DMHIs include increasing efficiency, accessibility, addressing stigma, and filling the mental health service gap. Disadvantages include skepticism in DMHIs, limitations of applicability, lack of accessibility to internet and technology, lack of sustainability, and lack of infrastructure, funding, and policies. The lessons learned in the Nigerian context can inform the delivery of DMHIs in other low-resource settings. Future research should examine feedback from users and providers of DMHIs to allow for comparative analysis, more conclusive and replicable results which will in turn be helpful in making positive changes in DMHI design and implementation.

Introduction

The pandemic has increased the strain on mental healthcare systems and disproportionately impacted populations already marginalized due to poverty and socioeconomic distress [1-2]. LMICs face the largest consequences of this mental health crisis due to unequal access of mental health services being a prevalent issue before the COVID-19 pandemic [3-4]. As internet accessibility and mobile device usage continue to rise in LMICs, digital mental health interventions (DMHIs) have the potential to help with reducing healthcare inequities and filling the gap between the demand for healthcare services and access to care [5]. However, the research evidence to support DMHIs has not kept pace with the rapid growth of the digital mental health field [6]. This article aims to map the current state of DMHIs available in Nigeria and illustrate its progress, limitations, and challenges. The lessons learned in the Nigerian context can inform the implementation of safe, effective, and evidence-based DMHIs in low-resource settings.

Methods

A qualitative research design using a single case study-based approach was employed [7]. The study population of interest were individuals who play a prominent role in the fields of DMHIs and global mental health. A purposive sampling method was used to recruit study respondents [8]. The study sample consisted of mental health researchers, healthcare providers, digital health experts, and people familiar with DMHIs in Nigeria. Twenty semi-structured interviews were conducted virtually between June and

August 2022. Inductive thematic analysis was conducted using the qualitative data analysis software Dedoose [9].

Results

Advantages of DMHIs

DMHIs Addresses Mental Health Service Gap

One of the most reported strengths of DMHIs among all respondents was how DMHIs increase the efficiency for receiving mental healthcare. DMHIs have been credited to shorten the time spent requesting for a referral and waiting for an appointment as immediate contact occurs through the DMHI. One of the counsellors highlighted that certain DMHIs are also asynchronous, meaning, “it doesn’t matter when you log on to the DMHI, with AI you can access services without requiring a therapist on at the same time. This means there is less delay and patients can reach out any time if there is an emergency.” As a result, DMHIs have been noted for their ability to compensate for the staffing shortage and mental health service gap in Nigeria.

Task Shifting

Apart from increasing efficiency and reducing the burden on the tertiary levels of care, DMHIs also provide the opportunity for increased mental health knowledge sharing and task shifting. Trained volunteers and counsellors have been effective in providing services through that medium and overall found to be a “helpful option that connects people to other mental health resources that don’t have long wait and demand.”

Flexibility and Convenience

Another common benefit mentioned across social workers and digital health specialists is that DMHIs make therapy accessible to people who may not otherwise be able to receive it. Several social workers commented on how convenient and flexible DMHIs were while being beneficial to both DMHI service providers and service users. “One can comfortably sit in the bedroom, be anywhere, in the comfort of home and access your doctor.” This works both ways since none of the parties have to “commute to a location, volunteers can be anywhere and still provide support.”

Provision of services to rural and underserved communities

A subtheme that falls under Flexibility and Convenience of DMHIs is how DMHIs have the additional ability to provide MH services to rural and underserved communities. As mentioned by one of the social workers, “DMHIs are helpful for people who live in rural areas, have a tight work schedule, or are housebound to still receive quality mental healthcare.”

Reduces barriers from stigma and shame.

All interviewees also unanimously agreed that DMHIs have been ideal for addressing issues of mental health stigma in Nigeria. As mentioned by one of the counselors, DMHIs have the potential to tackle stigma since “you don’t need to walk into a physical space or mental health institution…a phone provides privacy, and you can do what you want.” For certain young people, they are “much more comfortable talking about stuff like that virtually, rather than with people they know/know their family, choosing to have a therapist very far away geographically.”

Disadvantages of DMHIs

Skepticism and Lack of confidence/trust in DMHI

As explained by one of the public health researchers, DMHIs are a “novel and unconventional intervention…which could lead to a lack of confidence in service delivery (counselling) and skepticism.” Another global mental health researcher agreed with this viewpoint by commenting on how a “lack of awareness and knowledge about the interventions may constitute a barrier to adoption and use".

Lack of accessibility to Internet and Technology

Numerous costs are involved with the implementation of DMHIs. According to the literature, these costs can act as challenges for the DMHI providers as well as DMHI users [10]. From the perspective of the DMHI providers, these cost concerns involve the initial investment, the maintenance of employees and the platform, and the lack of infrastructure. As observed through the participants, DMHIs that specialize in rural areas and provide access to the internet to access the intervention, lack of original infrastructure to rely on tends to result in a very expensive deployment. As described by one of the executives from LaFiya Telehealth, "we had to build the solar kiosk, internet broadband, and satellite all ourselves…it is a hard place to penetrate and is labour intensive."

Lack of Sustainability and Follow-up

DMHIs have also been viewed as a potential short-term fix to the mental health crisis, but respondents emphasize how proper counselling and mental health care also require time and sustainability. As stated by one of the occupational therapists "Once the current funding is used up, we have to think about reaching out to the community and government to get them to agree to support the DMHI since income is not constant."

Lack of Infrastructure

The lack of mental health laws and policies as well as budgeting for mental health services has been commented on by almost every interviewee. As emphasized by one of the public health pharmacists, "If we don't improve the policy surrounding digital health…such as data inscription, safety and security…we cannot continue to advance and move forward." These concerns are shared by other social workers, as DMHIs also require continuous IT support for when things inevitably require fixing and troubleshooting.

Conclusion

This study examined the current state of DMHIs among a variety of respondents from professional disciplines and health care organizations in Nigeria. The lessons learned in the Nigerian context can inform the design of new safe, effective, evidence based DMHIs and improve existing interventions. This review of the evidence along with semi-structured interviews with expert researchers and practitioners, provides stakeholders with the information necessary to make decisions about which types of places and spaces to focus on and what approaches to use for the best possible results. There is a need to leverage DMHIs within the Nigerian population for mental health promotion. Future research should examine feedback from users and providers of DMHIs to allow for comparative analysis, more conclusive and replicable results to inform DMHI design and implementation.

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ART SUBMISSION

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No Health Without Mental Health

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This digital artwork is inspired by the importance of mental health. Mental health is often stigmatized and overlooked in some cultures as it is an internal experience which is not visibly apparent to those around us [1]. Our mental and physical health significantly impacts the quality of our lives, which is why we must care for our body, mind, and soul [2]. By having an integrated structure, I portray the presence of support systems and individuals to help improve mental well-being. The medical chart represents the value of healthcare systems, as they strive not only to ensure physical well-being but mental well-being as well. The ladder indicates that achieving good mental health is a step-by-step process, which the healthcare team collaborates to help provide. By providing compassionate care, represented by the heart, the healthcare team and others can help form a support system for promoting good health. This artwork, as a whole, emphasizes the importance of reaching out to others for support when dealing with mental health challenges. Mental health awareness is critical for the mental and physical well-being of society. Therefore, educating people on mental health will promote a happier and healthier population.

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Role of Animal Companionship in People Experiencing Structural Vulnerabilities Globally

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Mental health has become ever more critical than it has been before in history. One in two Canadians will have mental health concerns by the time they reach the age of 40 years [1]. In addition, mental health issues are becoming a leading disability worldwide [2]. With respect to the epidemiological burden of mental disorders, a global burden of disease study [3] attributes nearly 15% of years of life lost to mental disorders, making mental illnesses one of the most significant causes of disability worldwide. Research has shown that pets' potential benefit to good mental health comes from evidence of pet ownership in relation to stress reduction, improved quality of life, and pets as promoters of social and community interaction [4]. This article focuses on the impact of having a pet on mental health and further how it impacts the daily life experiences of individuals facing homelessness.

Pets are linked to emotional upliftment because they offer a reliable and nearby source of solace and company [5]. The idea that animals could sense when assistance is required and respond appropriately fosters a depth of connection that was thought to be especially helpful in times of distress [6]. Companion animals help with practical work by helping divert attention from unpleasant symptoms and experiences, providing a schedule, and helping to activate conduct [7]. Because of the reciprocity in human-pet relationships, the idea that pets accept their owners without passing judgment, the sense of pride that comes from effectively caring for an animal, and other factors, pets are crucial to maintaining a good identity and sense of self [8]. A lack of a sense of self identity is especially present in the homeless youth population.

A study conducted in Malaysia analyzed the self-efficacy of 448 individuals, which included 122 individuals with dogs and 80 individuals with cats [9]. It was found that self-efficacy was much higher in the participants that had animal companions, which results in these individuals having the ability to have confidence in their ability to have persistence despite barriers that may arise [9]. It should be noted that this study was conducted amidst the COVID-19 pandemic, where social isolation was a common factor among all participants [9].

"The Pet Effect"

The "pet effect" refers to the hypothesis that having a pet can increase longevity, psychological well-being, and physical health in people [10]. However, many studies have reported that these are personal evictions rather than scientific research [11]. Approximately 25% of homeless individuals have pets [12], but there is a lack of quantitative research on pet ownership among homeless youth [13]. A study aimed to address this gap by examining pet ownership among 398 homeless youth utilizing two drop-in centres in Los Angeles [14]. The majority of pet owners reported that their pets provided companionship and made them feel loved. Additionally, nearly half of the pet owners stated that having a pet made it more challenging to stay in a shelter [14]. Compared to non-pet-owning peers, pet owners reported fewer symptoms of depression and loneliness [14]. Furthermore, pet ownership was associated with reduced utilization of housing and job-finding services and a decreased likelihood of staying in a shelter [14]. These findings highlight the positive benefits of pet ownership for youth facing homelessness while emphasizing the potential negative impact on housing options. Therefore, it is crucial for housing and other services to consider and accommodate the needs of youth facing homelessness with pets.

This integrative review confirms existing research demonstrating the positive impact of companion animals on the well-being of homeless individuals [15]. However, it is essential to conduct further investigation to establish a direct causal relationship between pet ownership and well-being among people experiencing homelessness. Companion animals serve as a crucial source of emotional support for homeless individuals. However, owning a pet may also make them more vulnerable by limiting their access to services such as shelter, healthcare, and mobility assistance. Since many homeless shelters do not permit pets, finding housing remains a significant challenge for homeless individuals.

Systematic Barriers

Despite the mental health benefits that pets have for their owners, systematic barriers cause companion animals to burden individuals facing structural vulnerabilities [16]. For example, in Los Angeles, California, half of the precariously housed individuals with animal companions report that due to no-pet policies, they could not receive emergency shelter and had to spend nights on the street [16]. In addition to being forced to choose between housing and staying with their pet, homeless individuals face barriers when accessing mental health services [16]. Since the services available to shelter residents frequently do not suit the needs of a companion animal (e.g., boarding, transportation, daycare), individuals often do not receive the healthcare assistance they require in order to stay with their animal [16].

These systematic barriers result in the demographic of individuals facing structural vulnerabilities needing additional support. As a case study analysis example, a Canadian-based non-profit organization, ‘The Canadian Courage Project’, supports transitional housing residents. Since youth lack access to mental health services because of their animal companions, The Canadian Courage Project provides mental health workshops to potentially fill this gap in the current system [17]. Additionally, to further support this demographic, The Canadian Courage Project provides essential items needed to care for an animal companion [17]. These items are included in an ‘Animal Service Booth’, which operates on a ‘take what you need’ basis to remove the stigma associated with wellness care kits [17]. The Canadian Courage Project is an example of an organization working to enhance pet and human companionship for those facing additional structural vulnerabilities in the community.

Also, previous research has shown that mental health burden is linked to a stronger emotional bond with one's dog [18]. This link is completely mediated by attachment to humans [18]. A higher mental health burden was linked to poorer comfort with depending on or trusting in others [18]. From a developmental standpoint, the relationship between a weaker emotional attachment to humans and a stronger one to pets may result from people being unable to form secure attachments to others when they are young [18]. These folks may develop closer bonds with their animals that could be viewed as more trustworthy and non-threatening [18].

Call to Action

Studying our interactions with animals is fascinating, important, and challenging. It is unclear whether and under what circumstances pets make people happier and healthier. Animals, overall, play an important role in nearly every aspect of human psychology and culture. In addition, our attitudes, behaviours toward, and relationships with other species provide insight into many aspects of human nature.

However, the research needs to be more conclusive due to the limited studies published in this area. More research is needed to examine whether developing a stronger emotional relationship with pets results from unpleasant previous bonding experiences and whether this coping mechanism enhances or degrades psychological health [4]. From the research found, we can suggest that access to animal support programs must be more readily available to the youth facing homelessness [19]. Additionally, more specialized programming is needed for specific demographics, such as youth identifying as a part of the LGBTQ+ community [19].

Overall, pets can provide emotional support and a sense of purpose for individuals experiencing feelings of loneliness, isolation, and hopelessness [4]. Many individuals' pets are their family and close companions, providing a sense of love and connection that may be lacking in other areas of their lives [5].

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Rewriting social justice and equity into global mental health

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Global mental health (GMH) has emerged in the last two decades as a distinct branch of the field of global health. Whilst global health itself lacks a clear definition, there are some key qualities and aspirations that are discernible, and logically should extend to apply to GMH. Across the literature, as individuals try to reckon with what global health means, the principles of social justice and equity form a point of convergence that many seem to agree on [1-3]. Indeed, this general consensus has developed to a fault, at times turning these supposed guiding principles into mere buzzwords. Yet, these considerations seem to be largely absent in GMH discourses [4]. GMH has developed a vocabulary that is sterile, focusing its endeavours around solving treatment gaps through scaling up, indulged by a fixation on (standardized) biomedical solutions [5,6] that lack adequate contextualization [7]. Other approaches to the psy-disciplines are increasingly embracing biomedical alternatives and seeking to incorporate practices informed by principles of social justice to develop more holistic approaches to mental health. Yet, the field of GMH seems to have stubbornly chosen to ignore these directions and continues to promulgate the reductive and simplistic idea of a resource problem that ought to be solved by scaling up access to services and medications.

In an attempt to challenge the current dominant directions, I start by exploring why social justice and equity matter to GMH. To illustrate what this means for practice, I point to some emerging research directions that have advanced these principles by interrogating the social dimensions of mental health. I end by providing a suggestion – making space for voice and choice – as a starting point for future research that seeks to incorporate principles of equity and social justice in GMH.

The necessity of social justice for honest science

I argue that we do ourselves a great detriment if we exclude social justice from defining the way we do research and that doing so does not lead to better science. In part a legacy of a dominant biomedical bias, there is the tendency to omit discussions that interrogate the role of power within global (mental) health [8-10]. This leads to a preference for research that is 'value-neutral' and rooted in positivist traditions, hence social justice rarely drives research. However, being driven by social justice and equity allows us to be honest with ourselves – because acknowledging injustice and inequity begs us to ask the question of 'why' in a sincere way. Asking why things fail from a technocratic and biomedical perspective biases the answer from the outset, because it only allows us to draw from a limited pool of pre-established and scripted answers, causing us to simply regurgitate the same old answers such as a lack of feasibility or acceptability. Asking why things fail from a social justice perspective allows us to pierce through the surface and understand how structures and power come to shape inequity and injustice and cement them so deeply into the status quo that they become seamless, even invisible, to those who choose not to look twice. It allows us to understand that it is not merely the manner in which biomedical solutions are implemented that fail people. Rather, it is the wider systems within which these solutions operate that fail people [11] because they allow and encourage ongoing systemic violence and structural inequalities.

Interrogating social dimensions of mental health: New horizons in GMH

Against this backdrop, some scholars are seeking to reinvigorate the way we think and work in GMH. They point our attention to the political economy of mental health, and underline the need to incorporate social realities in our understandings of mental health [12]. Mental health needs to be situated within its wider social, economic, political and historical contexts, which renders a biomedical perspective alone insufficient to understand the complex and multi-layered processes that shape it [13-15]. Theoretical directions, such as the social determinants of mental health, have emerged to facilitate such conceptualizations [16, 17]. To operationalize these understandings, there have been calls for a paradigm shift that puts greater emphasis on social interventions in GMH [18-20]. Social interventions suggest a way forward that broaden the parameters of the range of possibilities we allow ourselves to envision when thinking about change. They necessarily encourage us to take on a more encompassing and multisectoral perspective on mental health. The emergence of this literature, coupled with a pandemic that has laid bare the deep injustices and inequities in global health in a way that we can no longer ignore [21, 22], allow for a moment that offers the possibility to shed our old ways, and embed social justice in our modus operandum.

Making space for voice and choice

Incorporating considerations of choice and voice, I argue, form easily implementable starting points when thinking about designing and implementing GMH research and practice rooted in efforts towards social justice. Voice and choice are both foundational aspects of what social justice means and entails, as well as being mechanisms in the quest towards achieving social justice and equity. Although seemingly simple considerations at first glance, they allow to poke questions that peel back the individual layers when asked with intent. Voice not only refers to whose voices we choose to listen to, but also the extent to which we choose to value various voices. It pushes us to reconsider whose voices we are making space for; what it means to truly listen; how we disrupt institutionalized hierarchies that perpetually keep the voices of everyday people, who matter the most GMH, at the bottom; and acknowledge when we need to step back and let go of some of our own power to allow voices to be fairly distributed. On the other hand, choice allows people to exert their agency, and acknowledges that all of our individualities and contextual realities necessarily make it impossible to be encompassed under one single standardized solution [23]. It allows a basic sense of dignity, which is too often denied, by recognizing that people know what is best for themselves and their communities [13].

GMH needs to wake up and radically reconsider its ways of being. While the current body of research certainly has its use and value, continuing down a single-track focus will at best hinder GMH from fulfilling its aspirations of creating meaningful impact, and at worst come to replicate and perpetuate the very wrongs it seeks to undo. The compounding crises experienced in the last years have shed light on the importance of mental health and brought it forward as an area of concern - this momentum provides GMH with an opportunity to regroup and reorient itself more closely with the goals of social justice and equity in order to live up to the promise of its potential.

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Effects of Food Insecurity During the COVID-19 Pandemic on the Mental Health of International Students Living in Canada

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WHAT IS FOOD INSECURITY? WHAT DOES IT LOOK LIKE IN CANADA?

Food insecurity is predominantly thought to be an issue of the Global South; however, it also remains a challenge in developed countries such as Canada. Food insecurity is defined by the Food and Agriculture Organization (FAO) as, "[lacking] regular access to enough safe and nutritious food for normal growth and development and an active and healthy life" [1]. The circumstances can range from mild, moderate, or severe: this can be from not being certain of when your next meal will be versus going days without food [1]. What may be surprising to many is that by this definition, university students often fall into these circumstances, particularly non-White ethnic minorities, low-income individuals, those receiving financial aid and often forgotten, international students [2]. A study done in an American University found that food insecurity was prevalent among 10-75% of students compared to the national average of 10% [2]. Although no statistics on the prevalence in international students were given in this paper, they were highlighted as being at a higher risk [2].

BARRIERS TO FOOD ACCESS

Both Canadian international and resident Canadian students face similar barriers to procuring food. A key barrier for both groups is financial constraints as university students face many expenses such as tuition, textbooks, and housing [3]. This was exacerbated during COVID-19 as there was a drop in employment rates across the country due to lockdowns and the closure of non-essential businesses [2]. In fact, it is estimated that employment rates decreased 15% from February to April 2020 [4], impacting the financial circumstances of many students. Even before COVID-19, financial constraints have negatively impacted the quality of foods students' access, with many often turning to cheaper and unhealthy options over nutrient packed foods that are outside of a student's budget [2, 3].

For students who were able to move back to their families during the pandemic, it was reported that with the closure of universities, many students went home over concerns of the rising spread of COVID-19, an inability to afford their student housing or due to loss of employment [2, 3]. Those who left their student homes to return to a more stable housing situation with their families or loved ones, experienced increased food security. This was due to many having decreased responsibility for procuring food, as well as consuming more home cooked meals [3]. One study from the Iowa State University, found there was a 44% increase in the number of students living with their families in 2020, and that these students were less likely to experience food insecurity than students living on their own [3]. Of those who moved home, the rate of food insecurity was 17% during the pandemic, a drop from 24-28% before the pandemic [3]. This experience differs from international students, many of whom were unable to return to their home countries due to border closures [3]. Often, these international students needed to stay in their student residences and provide meals for themselves. Students often do not have the time or cooking skills to prepare home cooked meals, thus resulting in the higher consumption of less nutritious, fast-food meals [3]. As well, even though employment rates began increasing in July 2020, as international students, they can only work 20 hours per week due to their study permit in all universities [4, 5].

One aspect to food security that gets overlooked is that the food being consumed must not only be nutritious and affordable but also culturally appropriate [5]. Depending on the area a student is living in and what their ethnicity is, it may be difficult to find their traditional foods in Canadian grocery stores that also managed to stay open during lockdown.

EFFECTS OF POOR FOOD SECURITY ON MENTAL HEALTH PRIOR TO COVID-19

It is well researched how insufficient intake of nutrients can lead to poor health in a multitude of avenues, however there are also psychosocial repercussions of food insecurity [2, 6]. Being food insecure can be a risk factor for depression, anxiety, and stress [5, 6]. An article from Cambridge University found that this can be due to the inability to consume cultural foods or negative feelings such as helplessness or alienation stemming from not being able to provide for themselves [5, 6].

Prior to the COVID-19 pandemic there has been little research into the mental health impacts of poor food security on students who live with their parents. On top of mental health issues that can be caused by poor food security, food insecurity may also reduce academic performance, creating a cycle that further exacerbates mental health issues. [2, 5].

EFFECTS OF POOR FOOD SECURITY ON MENTAL HEALTH AFTER THE ONSET OF COVID-19

For students who are food insecure while living on campus, having the ability to move back in with family in a food secure environment can have a positive impact on overall health and wellbeing. As mentioned before, these students may be alleviated of the responsibility and stress of procuring food [3]. While there has been no recent research specifically addressing the connection between mental health and food insecurity during the pandemic, it has been speculated that improved food security associated with moving home with family may have contributed to a reduction in risk for mental health issues [3]. Other ways in which the pandemic may have exacerbated the cycle of mental health and food insecurity includes increased food prices, inconvenient store hours that do not align with class schedules, and barriers to returning to their home countries and families [3].

PROPOSED SOLUTIONS

Within the current scope of the issue, there is a knowledge gap with respect to international students and food insecurity during the COVID-19 pandemic and its effects on mental health. Thus, further research and discussion into its effects are necessary to create policies to address the issue.

One study has pointed out how even though some universities have food programs such as food banks and pantries, international students do not use them due to stigma [5]. Thus, Canadians universities need to encourage discussion on campus about the struggle of food insecurity alongside being required to have food programs in place. This can increase the effectiveness of food banks on campus and potentially decrease food insecurity.

An issue with leaving universities to create and manage these programs on their own is that there is no organization to hold them accountable to ensure that students needs are being effectively addressed and prioritized. Thus, the government should also play a role, in creating policies that enforce accountability and provide support to students.

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ENVIRONMENTAL HEALTH

"The Earth is what we all have in common."
Wendell Berry, American Novelist and Environmental Activist

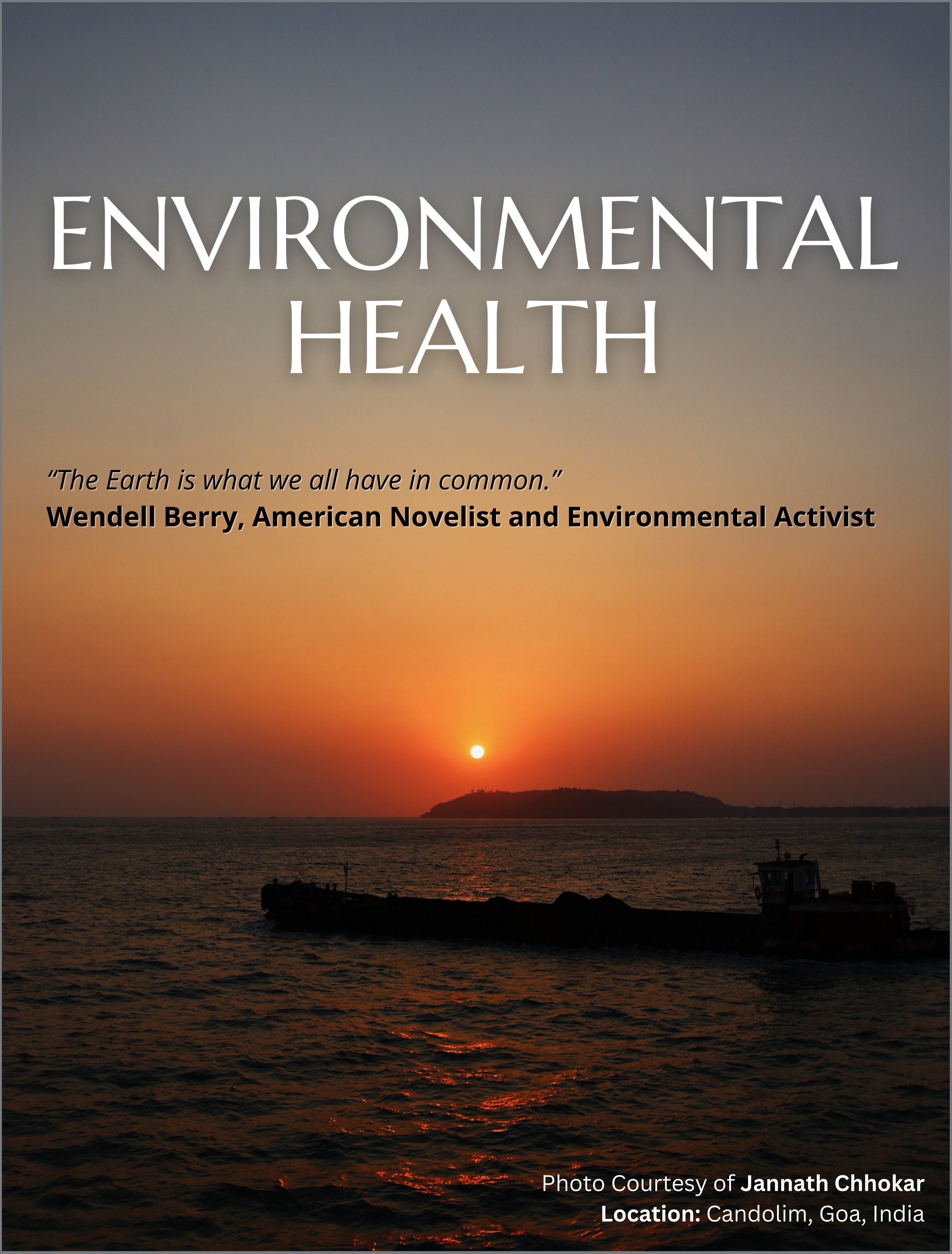

Photo Courtesy of **Jannath Chhokar**
Location: Candolim, Goa, India

ART SUBMISSION

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Research shows that air pollution has several adverse health effects [1]. For instance, a type of pollution called particulate matter (PM) affects the respiratory system and can exacerbate illnesses such as Chronic Obstructive Pulmonary Disease (COPD), bronchitis, asthma, and also contribute to the development of lung cancer [1]. The cardiovascular system is also affected with the exacerbation of ischemic heart disease, stroke, congestive heart failure, etc. [2]. There is also research to support that heavy air pollution exposure is linked with the development of perinatal disorders such as depression, and increased infant mortality [1, 3]. It is thus very important to increase awareness of these health impacts, and inspire system change to reduce pollution levels. This painting titled “Clean Air” shows the beautiful natural landscape of Alaska, which is host to low air pollution levels. Its beauty symbolizes the benefits of reducing air pollution levels, which can improve the quality of life for many.

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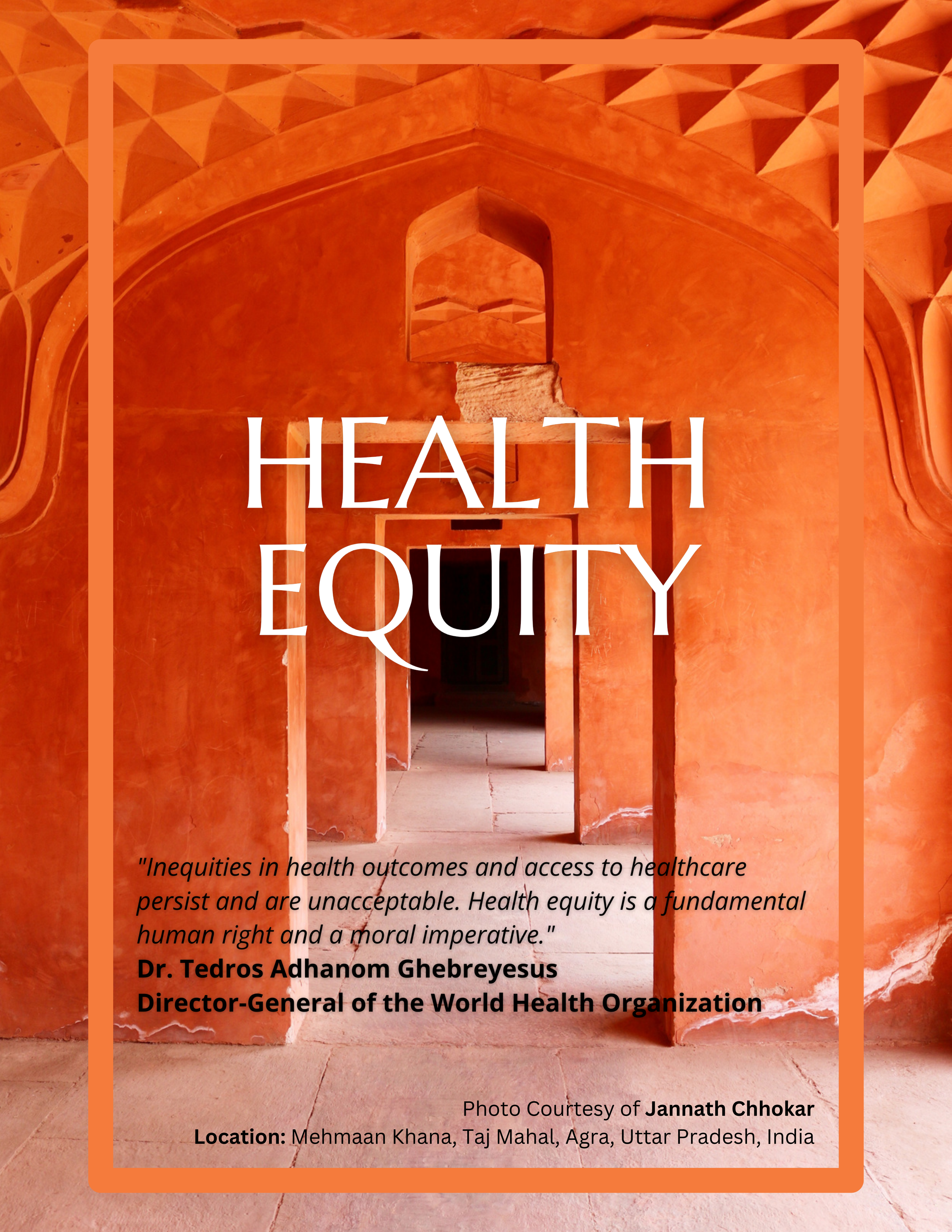

HEALTH EQUITY

"Inequities in health outcomes and access to healthcare persist and are unacceptable. Health equity is a fundamental human right and a moral imperative."

Dr. Tedros Adhanom Ghebreyesus
Director-General of the World Health Organization

Photo Courtesy of **Jannath Chhokar**
Location: Mehmaan Khana, Taj Mahal, Agra, Uttar Pradesh, India

ORIGINAL RESEARCH ARTICLE

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Investigating the Effectiveness of School-based Interventions (SBNIs) on Children's Nutrition Statuses and Healthy Habit Maintenance: A Literature Review

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Abstract

Childhood obesity and diet inadequacies are one of the most serious global health concerns to date, affecting over 340 million children (ages 5-19 years) worldwide. Effective health promotion and preventive measures are needed to address the serious health concerns affecting this population. School-based nutrition interventions (SBNIs) act as a potential avenue to support children's nutrition and life-long healthy habit maintenance by demonstrating nutrition knowledge and techniques to support healthy decision-making. This paper aims to investigate the effectiveness of SBNIs on nutrition and healthy habit maintenance for children between the ages of 5-19 years old. Literature was screened using the PubMed electronic database, yielding a total of 23 peer-reviewed articles to be included in this review. These studies highlighted that SBNIs that utilized multi-component approaches, elicited long-term and continuous implementation efforts, communal engagement, and provided educator support and effective resources indicated the highest amount of positive health outcomes and behaviours in children. Future research is needed to further investigate the long-term implementation of SBNIs, and future policies should work towards adopting similar strategies to help promote healthy livelihoods for all children worldwide.

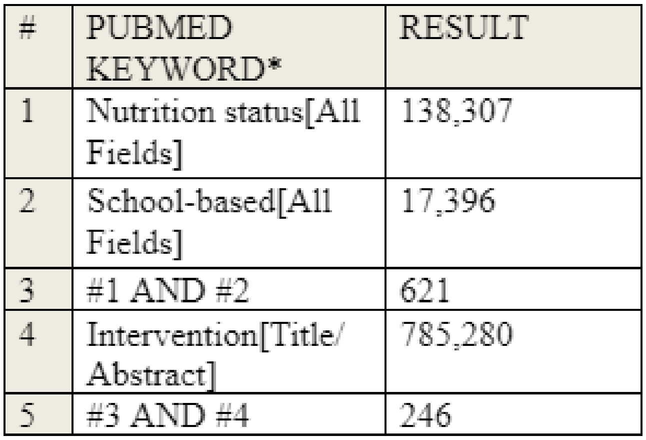
Introduction

Childhood obesity and diet inadequacies are one of the most serious global health concerns to date, affecting over 340 million children (ages 5-19 years) worldwide [1]. Childhood is a critical age of development [2]. However, there is a notable increase in poor diets and reduced nutritional intake among this population, which can lead to serious health effects, including increased risks for heart disease, diabetes, and cancer, and impacts on brain development and growth [2,3]. Effective health promotion and preventive measures are needed to address health concerns associated with inadequate nutrition and healthy habit maintenance in children [2,3,12]. School settings are known to be influential in addressing children's eating patterns [2-4,12].

School-based nutrition interventions (SBNIs) act as a potential avenue to support children's nutrition and life-long healthy habit maintenance by providing nutrition knowledge and techniques to support healthy decision-making [2-4]. This paper aims to synthesize information related to the effectiveness of SBNIs on nutrition and healthy habit maintenance for children between the ages of 5-19 years old.

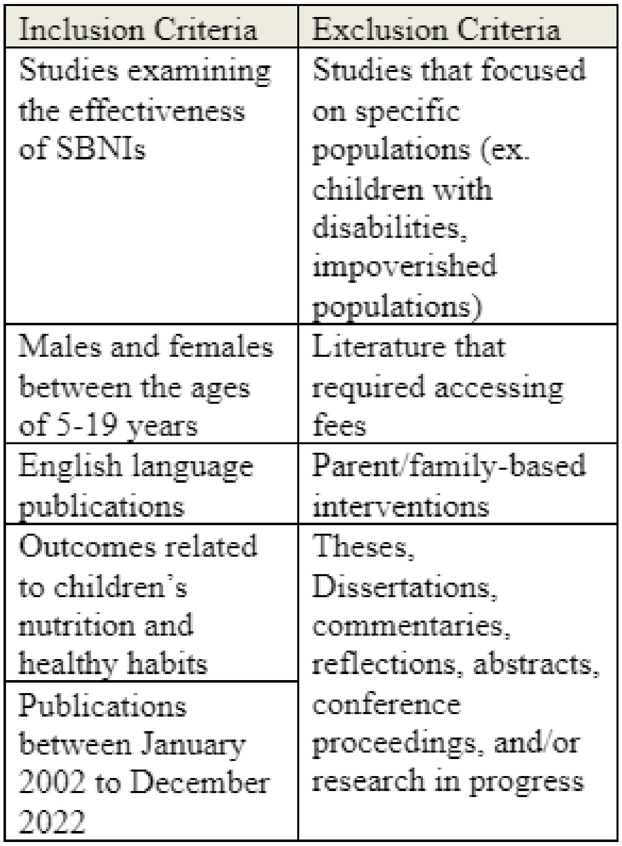
Methodology

The formal literature review was conducted using the PubMed electronic database. Keywords (Table 1) were utilized to increase search strategy relevance and rigor. Search criteria were limited to publications within a 20-year time period to capture a wide array of applicable sources.



#	PUBMED KEYWORD*	RESULT
1	Nutrition status[All Fields]	138,307
2	School-based[All Fields]	17,396
3	#1 AND #2	621
4	Intervention[Title/ Abstract]	785,280
5	#3 AND #4	246

Table 1: Harvest Table



Inclusion Criteria	Exclusion Criteria
Studies examining the effectiveness of SBNIs	Studies that focused on specific populations (ex. children with disabilities, impoverished populations)
Males and females between the ages of 5-19 years	Literature that required accessing fees
English language publications	Parent/family-based interventions
Outcomes related to children's nutrition and healthy habits	Theses, Dissertations, commentaries, reflections, abstracts, conference proceedings, and/or research in progress
Publications between January 2002 to December 2022	

Table 2: Inclusion and Exclusion Criteria for the Eligibility Assessment

Results

A total of 246 articles were generated. The eligibility assessment (Table 2) resulted in 23 peer-reviewed articles (Figure 1). The studies selected for this review included eight randomized control trials [4,8,9,16-20], five systematic reviews [2,5,6,12,22], four mixed-method designs [3,11,13,21], two Quasi-experimental designs [7,10], two clinical trials [14,23], one scoping review [24] and one prospective study [15]. Studies were selected to investigate the effectiveness of SBNIs for children ages 5-19 years [2-24]. Studies from across the world were included, and overall outcomes aimed at assessing children's nutritional statuses and healthy habit maintenance [2-24].

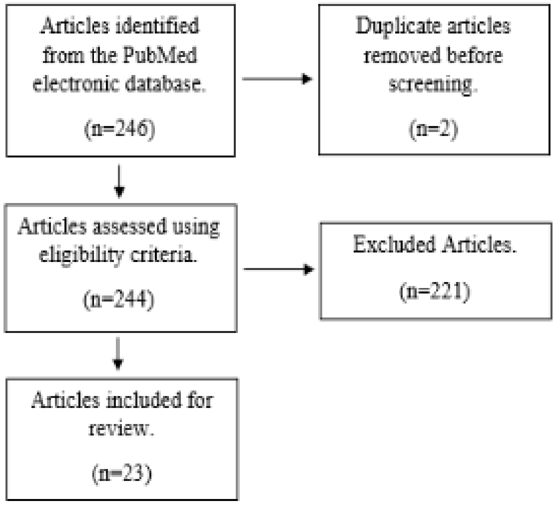


Figure 1: Process for Source Selection

Discussion

Multiple studies indicated that there were notable benefits associated with the implementation of SBNIs on children's nutrition statuses and healthy habit maintenance [2-24]. This review will examine the various intervention components of SBNIs that are associated with changes in children's overall nutrition knowledge, dietary intake, and food consumption behaviours.

Intervention components

Several studies indicated benefits associated with the utilization of multi-component SBNIs, integrating increased nutritional literacy, food provision, health promotion, physical activity, and communal engagement toward supporting children's nutritional statuses and overall healthy habit maintenance [2,5-8,17,21-24]. SBNIs solely addressing food provision (increased levels of fruits and vegetables (F/V), dairy products (DP), and Meat and alternatives (M/A)) were not as effective in addressing children's dietary behaviours as multi-component approaches [2-4,16-18,21]. Additionally, multiple studies stated that increased community and family involvement improved SBNI delivery as these relationships can help model optimal behaviours and foster an environment that supports healthy diets [2,4,5].

Additionally, effective intervention implementation requires resource availability, educator supports, and continuous program delivery [2,5,16-21]. Studies that implemented SBNIs with clear guidelines and optimal resources indicated better effects on children's nutritional statuses and healthy habits [2]. Reduced support for education providers resulted in poor intervention outcomes, as educators are strained for time and resources and often limited to their curriculum, making it difficult to uphold additional responsibilities [2,5,9,14]. Furthermore, continual implementation showed increased program compliance and improved information acquisition in children [2,4,11,18,21].

SBNIs also varied in structure. Some used challenges and activities, gardening, and cooking initiatives, while others focused more on curriculum or incorporated community and familial to improve children's dietary behaviours [2-4,13-24]. Successful SBNIs had school environments that (i) promoted wellness through nutritional literacy and preventative measures, (ii) provided engagement opportunities, (iii) addressed children's needs, (iv) increased food accessibility, and (iv) provided strategies for sustainable healthy habit maintenance [5, 6-18]. Furthermore, practices outlined within SBNIs should be continued in schools and at home after program completion to support healthy habit maintenance [5,14,15].

Children’s nutrition knowledge

With SBNI implementation, several studies have indicated positive results associated with children’s dietary behaviours and nutrition knowledge [2,5-24]. Providing school-based nutrition education has shown increased nutrition knowledge in children, especially related to food preparation techniques, dietary knowledge, and exercise [2,5,10,13-21]. Additionally, sustainable nutrition knowledge acquisition was heightened with increased autonomy [3].

Dietary behaviour outcomes

Most studies indicated significant impacts associated with children's dietary behaviours with the implementation of SBNIs [2,3,5,6,8-11]. Many studies identified an enhanced willingness in children to explore alternative food options [2,5,8,11,13,19]. Additionally, many children indicated improved eating behaviours and an increased preference for highly nutritious foods [2,3,5-24]. Improved healthy food promotion and food accessibility influenced food likability and food preferences in children [2,5,6,9,18]. Environmental effects are also a key component in children's knowledge acquisition of nutrition and healthy habits [2,8-20]. Several studies emphasized the importance of cultural relevance, using food options that are accessible, tasting sessions, and incorporating diverse preferences toward sustained dietary behaviours [9-22]. Intervention duration is another crucial component of dietary behaviour sustainability [2-4,5,8-24]. SBNIs with longer durations indicated greater and more sustainable changes in healthy habit maintenance for children as opposed to shorter interventions [2,8,9,11,16-24].

Food consumption outcomes

One of the main benefits associated with SBNI implementation was the overall increased consumption of nutritious foods among children, with variations between F/V, DP, and M/A [2,3,5,6,8-24]. An increase in daily F/V food availability was associated with improved dietary behaviours and decreases in nutrition deficiencies [2,3,5,6,8-11,16-24]. Some studies indicated that increased F/V consumption was more about increased consumption of fruits, not vegetables, as fruits are seen as a more practical snack; however, the baseline for fruits was also higher [2,3,6,17]. Additionally, several studies indicated decreased consumption of non-nutritional foods (ex., chips, sodas), smaller portions, and reduced dietary fat levels in children as a result of program implementation [5,13-17,20-24].

Limitations

There are several limitations to this literature review. Firstly, while the review examined children between the ages of 5-19, it is noted that intervention adherence may differ between younger and older children, as younger children may misinterpret instructions [3-22]. Secondly, variations in study designs and settings may affect generalizability due to a lack of standardization [4,8,22]. Thirdly, training teachers for SBNI implementation, instead of incorporating skilled experts, may affect study validity as teachers are limited in time, resources, and curricula responsibilities [6,9]. Finally, most studies did not look at long-term effects, making it difficult to assume behavioural maintenance [2,8,9,11,16-24].

Conclusion

Overall, SBNIs are quite effective in improving nutrition statuses and healthy habit maintenance in children between the ages of 5-19 years. SBNIs that utilized multi-component approaches elicited long-term and continuous implementation efforts, communal engagement, and provided educator support and effective resources indicated the highest amount of positive health outcomes and behaviours in children. [2,5-8,10-24]. Moving forward, global investment is needed to ensure i) that future research interventions investigate the long-term effects of SBNI implementation and ii) that future policies adopt similar strategies that aim to reduce obesity rates and promote healthy livelihoods for all children worldwide.

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Barriers to Accessing HIV Treatment and Testing Services in Tanzania: A Scoping Review

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Abstract

High rates of HIV susceptibility and consequent infection transmission in Tanzania are associated with barriers to accessing HIV services. The focal goal of this scoping review is to unveil social, economic, and individual barriers to accessing HIV testing and treatment services in Tanzania. Peer-reviewed literature was screened using e-databases, yielding 18 studies that fit the inclusion criteria. The studies found many barriers that influenced Tanzanians' decision to seek testing and treatment services. Scientific literature indicates that diagnosis through testing and following treatment can reduce the risk of HIV transmission and overall prevalence. The barriers in Tanzania were a lack of knowledge about HIV and its treatment benefits, social stigma, and institutional factors. Stigmatization of HIV-positive Tanzanians was the most prominent barrier, leading to fear among other individuals and refusal of testing. Moving forward, a more inclusive approach is needed to gather a holistic perspective. Also, empowering the country of Tanzania and raising awareness regarding HIV is vital to promote the uptake of testing and treatment.

Introduction

Approximately 1.5 million people in Tanzania live with Human immunodeficiency virus (HIV), a prevalence of 5.1%, making it one of the most pressing public health issues in the country [1]. Specific populations in Tanzania, such as injection drug users, have disproportionately higher risks of contracting HIV [3]. Reports in the literature highlight that education regarding HIV infections, testing, and treatment is low in the country, specifically among the youth population of Tanzania [2]. Lack of HIV testing exposes individuals undiagnosed to a high risk of acquiring or transmitting the infection [4]. Given that there is an intersection of multiple factors bolstering the prevalence of HIV, a multi-factorial approach is necessary to understand existing barriers in Tanzania. This scoping review identifies the barriers to accessing HIV testing and treatment services in Tanzania.

Methodology

Studies were identified through a systematic search of two electronic databases: PubMed and OVID/Medline that allow a more focused search to be performed. During the search, peer-reviewed articles were screened using key search terms (Table 1). The eligibility criteria were applied to a 10-year time frame (2013-2023) to collect recent and relevant articles according to an inclusion and exclusion criteria (Table 2). Broad terms were selected as key search terms to include all articles pertaining to HIV/AIDS in Tanzania across all Tanzanian districts. Duplicate search results and studies that met the exclusion criteria were excluded from the review. Then, the titles and abstracts of the search results were reviewed to determine if the articles addressed the factors influencing access to HIV testing and treatment services. A full-text review was conducted on published studies that were in accordance with the inclusion criteria.

Table 1: Key Search Terms

Concept	Search Terms
Factors	Factors Barriers Influencing
HIV	HIV AIDS human immunodeficiency virus acquired immunodeficiency syndrome
Treatment	Treatment Therapy Testing
Tanzania	Tanzania Tanzanian

Table 2: Inclusion and Exclusion Criteria

Inclusion Criteria
Study focused on individuals in Tanzania
Published from January 2013-January 2023
Studies accessible in the English language
Articles discussing the factors influencing access to HIV testing or treatment measures
Studies available in full text
Exclusion Criteria
Unpublished dissertations, pilot studies, and studies conducted outside of Tanzania

Results

As per the key search terms for this review, the search results yielded 365 peer-reviewed research articles. After importing the articles into Covidence, a primary screening and data extraction tool, 42 were identified as duplicate records and were removed. Screening was subsequently conducted, and 18 articles fit the inclusion criteria for this scoping review (Figure 1). A total of 299 articles did not meet the inclusion criteria and were thus excluded. Various factors influencing access to HIV testing and treatment services in Tanzania were examined. Four studies focused on Dar-es-Salaam city and one on Tanzania's Moshi and Rombo districts [5,7,8,12,13]. One study examined the data from national programmes to increase HIV testing and treatment to understand barriers [17]. Another study discussed HIV patients' perspectives on the perceived barriers and utilized their experiences to inform future steps [13].

Discussion

Multiple studies uncovered several factors influencing whether an individual in Tanzania can seek testing and treatment services [4-17]. These factors included lack of education, stigmatization, and institutional shortcomings regarding HIV/AIDS. This review aimed to understand the nature of these factors and how they contribute to the low rates of HIV testing and treatment. Furthermore, this review recommends the next steps to enhance healthcare services in Tanzania and ways to reduce the HIV prevalence.

Barriers to care

Lack of knowledge

This review indicated that education and knowledge regarding HIV/ Acquired immunodeficiency syndrome (AIDS), the perceived risk of contracting the disease, and the perceived benefits of treatments functioned as barriers to accessing treatment and testing services. The uptake of voluntary HIV testing and counselling in Tanzania is known to be positively correlated with the level of education [4]. As education increases, individuals are exposed to further education regarding voluntary counselling and testing (VCT) services and HIV, which results in increased testing and treatment uptake [4]. A positive attitude towards these services is developed, positively impacting the intention to use these services [5,6]. Similarly, a lack of education about HIV testing among parents/guardians led to a lower uptake of testing services in Tanzania [7]. Many people believed that HIV is the end of life, and the lack of understanding about the benefits of treatment was also a significant barrier [7]. Men and women were more likely to accept HIV testing services in Tanzania if they had adequate knowledge about the disease and prevention measures such as VCT services [8].

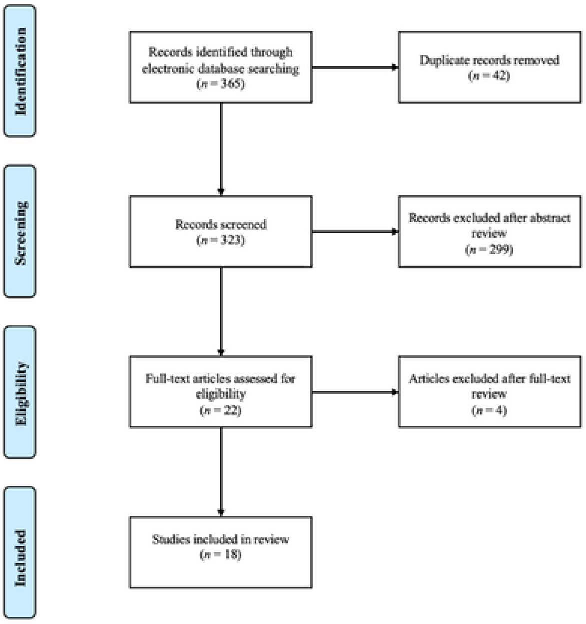

Figure 1: Selection process for the scoping review

HIV Stigma

Stigma is another crucial determinant of whether an individual in Tanzia will seek HIV testing and treatment. Religious organizations hold an important place in Tanzanian culture [2]. Religious misconceptions about HIV fueled stigma, whereby women and men believed that HIV/AIDS was a form of punishment for engaging in behaviours seen as sinful [2,4,10,12,18]. Furthermore, disclosing HIV/AIDS status in Tanzania was found to be correlated with discrimination, rejection, and mistreatment by healthcare workers [2,10]. The community's dread and stigma are perpetuated by environments that do not encourage status-sharing [2]. Tanzanians feared that a positive result for HIV would lead to stigma and discrimination; therefore, they avoided these services [7,9-11,13,14].

Institutional factors

Multiple studies found that system-level barriers hindered access to HIV testing and treatment services. In Tanzania, individuals seeking HIV services value confidentiality [16]. It was reported that some healthcare workers shared patients' HIV-positive statistics with friends and disclosed their confidential information [15]. This disclosure led to the use of derogatory terms to describe HIV-positive patients [15]. Furthermore, medical facilities in Tanzania had a layout that minimized privacy, increasing reluctance to seek these services [15]. Individuals commonly reported that HIV care clinics were only open for 8 hours, which reduced accessibility for most of the Tanzanian population [15]. Studies also showed that there were several healthcare staff issues. For example, the shortage of facilities and staff hindered access to HIV testing and treatment services [13].

Limitations of included studies

This scoping review has several limitations. First, some studies only gathered data from a select number of districts in Tanzania [17]. Therefore, the results regarding accessing HIV testing and treatment services cannot be generalized nationwide [17]. Secondly, some articles relied on self-reported data through surveys [5,17]. These individuals may exhibit health behaviours that are different from the rest of the population living in Tanzania [5,17]. Finally, one study had an opportunistic sample for participant recruitment [18]. This method does not fully represent naturalistic circumstances, and so results may differ from real-world settings [18].

Conclusion

This review has highlighted the range of barriers that impede access to HIV testing and treatment services in Tanzania. As stigma is the most significant barrier, there is a need to focus on reducing the discriminatory impacts of testing positive for HIV. Moving forward, Tanzania should empower individuals, combat common stigmas and raise awareness regarding prevention measures and the importance of HIV testing via education.

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A mixed-methods systematized review on the efficacy of OAT in mitigating adverse outcomes amongst adults in Canada experiencing opioid dependence from 1964-2022

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Abstract

This systematized review was guided by the PICOT question: For persons experiencing opioid dependence in Canada from 1964-2022, is the administration of OAT associated with a reduced risk of adverse outcomes? Results demonstrated improved self-reported well-being and reduced opioid use, overdose, mortality, hospitalizations, incarceration, and economic costs. Retention was identified as a limiting factor for OAT efficacy and numerous variables impacting retention were also identified. This is an abridged version of the full systematized review, which is available upon request.

Introduction

Over 70% of drug-related deaths worldwide can be attributed to opioid use, with 30% being directly attributed to overdose [1]. This is a growing global problem, with an estimated 62 million people using opioids in 2019 across socioeconomic backgrounds [1,2]. Canada is the second leading consumer of opioids worldwide, with 3.7 million people reporting opioid use in 2018, 9.6% of which reported problematic use, and approximately 20,000 apparent opioid toxicity deaths reported from 2018-2021 [2,3,4]. Given the rise of opioid dependency and associated costs, it is relevant to implement evidence-based treatment. The Canadian government aims to mitigate the opioid crisis by funding treatments such as Opioid Agonist Therapy (OAT) [2,5]. This includes methadone maintenance treatment (MMT), introduced in 1964, and buprenorphine-naloxone (BN), introduced in 2007 [6,7]. People enrolled in OAT receive daily doses supervised in a clinic, physician's office, or pharmacy and, upon stabilization, may receive take-home doses [6]. This review acknowledges the role of the client in OAT and explores how client experiences impact outcomes. OAT success was assessed based on qualitative indicators, namely client satisfaction and self-reported well-being, as well as quantitative indicators, namely retention, overdose, mortality, hospitalizations, criminal behavior resulting in incarceration, and economic costs. This review was informed by the goal of harm reduction, to decrease adverse health, social, and economic consequences of drug use without necessitating a decrease in such drug use at the practical, conceptual, policy, and program level [8].

Figure 1: Harm reduction model [8].

Methodology

This review was informed by the PRISMA 2020 statement [9]. One reviewer identified primary qualitative, quantitative, and mixed-methods studies via a systematized search of MEDLINE and Embase from 1964-2022, including ahead of print, in-process, and non-indexed citations, with the predetermined keywords: (Canada or Canadian) AND (opioid agonist therapy, or OAT, or methadone, or buprenorphine, or Suboxone, or Methadose) AND (adult) AND (outcome, or perception, or satisfaction, or follow up, or social, or economic, or health, or criminal, or retention, or incarceration, or quality of life, or mortality, or efficacy, or hospitalization, or overdose). Eligible studies included primary literature conducted across Canada involving adults (≥18) of all socioeconomic backgrounds with a history of MMT or BN excluding concurrent treatment, comparisons to other treatments, and injectable OAT. All articles underwent S1 and S2 screening from MMAT version 2018 [10]. Studies were grouped by outcome measures according to Pope et al's [11] guidance on the conduct of narrative synthesis in mixed-methods systematic reviews. In this abridged version, these groupings are presented together for succinctness.

Results

14 studies were included in this review. 1 study [12] was conducted in rural Western Canada, 3 studies [13-15] were conducted in Ontario, 9 studies [16-24] were conducted in British Columbia, and 1 study [25] was conducted in Canada without regional specifications. 12 studies [12-14,17-25] involved methadone and 2 studies [15,16] investigated methadone and BN. OAT was associated with improved self-reported well-being [14] and reductions in overdose risk [15,16], all-cause mortality [19,22], prescription opioid use [16], hospitalizations up to 10 years [15,23], violent and non-violent crime up to 10 years [21], recidivism [25], and costs of criminality [18].

Without retention, all-cause mortality and overdose rates increased [15,22] and there was no significant decrease in fatal-overdose or prescription opioid use [16]. There was also no significant recidivism risk difference between those who terminated OAT and those who never initiated OAT [25]. Factors limiting retention itself included dispensing site attributes, such as site accessibility and the layout of over-the-counter needles which may serve as triggers, poor relationships with healthcare staff, coercion, negative perceptions, perceived dose insufficiency, missed doses, insufficient finances, decreased practitioner compliance to dosing guidelines, stigma, and daily OAT dosing requirements as well as the related risk of discontinuation following missed doses [12,13,17,20,24]. Conversely, factors promoting retention included informed consent, education, healthcare service efficiency, ongoing client-provider relationships, and discretion [12,17]. Furthermore, initiating OAT within institutions promoted retention following release [25]. Pharmacological aspects of OAT associated with retention included dose titration in initial weeks, higher doses, take-home doses, variable dosing strategies, and attempted tapers [20]. Comparisons were also identified between BN and MMT, such as differing incidences of discontinuation, overdose, hospitalizations, and healthcare interactions, however such results were not consistent [15].

While the harm reduction model calls for non-judgmental and non-coercive intervention provision, the findings of this review demonstrate high rates of coercion, particularly during crisis events such as hospitalizations and incarceration, and stigma [12,13,17,26]. From an economic standpoint, persons on MMT who used opioids illicitly in the preceding six months did not show significantly reduced criminal costs compared to persons in relapse [18]. Only periods of MMT without illicit drug use demonstrated significant avoided costs of criminality [18], which does not align with the goal of harm reduction, to reduce adverse economic outcomes without requiring a decrease in drug use [8].

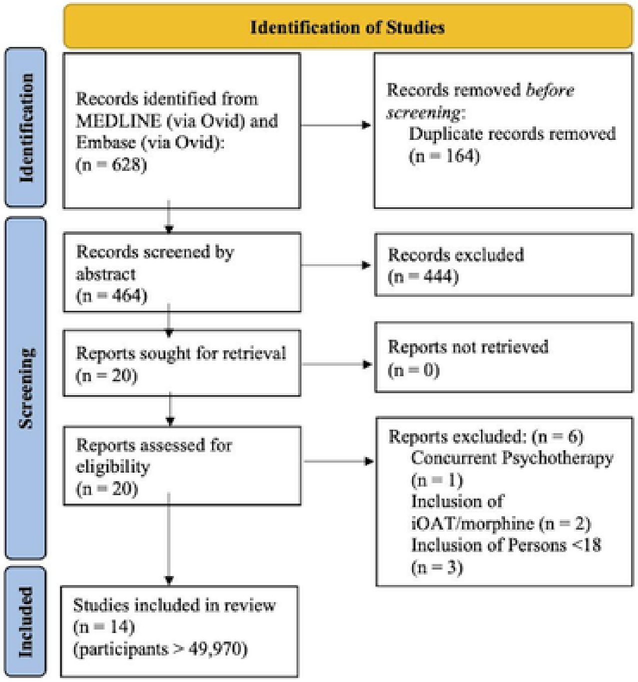

Figure 2: Flowchart of study identification informed by Prisma 2020 statement guidelines on flow diagrams [9].

Conclusion

Aligning with harm reduction goals, this review suggests consultation with persons experiencing opioid dependence in the development of dispensing spaces, education initiatives, and aspects of OAT delivery to ensure a client-centered approach [8,26].

Firstly, this review proposes the curation of standardized dispensing sites to promote retention. Pharmacy modifications may involve the rearrangement of over-the-counter merchandise, such as needles which may act as triggers, and the usage of multi-purpose counseling rooms to promote discretion and client-provider dialogue. Sanitary needle access aligns with harm reduction goals; however, such needles should not be directly visible as one receives OAT and OAT-related services.

To foster relationships with healthcare staff, this review suggests the creation and provision of mandatory training to reduce stigma and guide OAT initiation events. Relatedly, educational resources should be available for clients to ensure they have a thorough understanding of OAT and can thereby provide informed consent. Notably, retention was also limited by accessibility, with automatic OAT discontinuation after 3 missed doses [12,13]. To increase accessibility, the expansion of OAT dispensing sites is recommended, particularly in rural regions with limited healthcare practitioners and pharmacies [27]. It is also recommended that OAT dispensing spaces offer multiple OAT-related services to avoid costs associated with travel to multiple locations for different, mandatory OAT services. It could also prove beneficial to implement government-funded OAT coverage. In addition to benefiting client health, this may reduce costs of criminality to costs comparable with opioid abstinence [18]. Since decreased compliance to dosing guidelines was mirrored by a decline in retention, there is a need for stricter prescription regulations [20]. Further research is suggested due to the disproportionate distribution of identified studies across Canadian regions as well as the low number of studies identified that involved BN. Further research is also suggested to determine dosing strategies that promote retention. Overall, this review suggests OAT to be effective in mitigating adverse outcomes amongst persons experiencing opioid dependence in Canada, however that such efficacy is limited by retention. Relatedly, this review identifies factors that impact retention and extends related suggestions.

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Taking a Bite Out of Healthy Living: The Impacts of Food Insecurity on Post-Secondary Students

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Abstract

Food security is an important social determinant of health that impacts physical and mental wellbeing. Unfortunately, students are prone to food insecurity due to unique financial constraints. This paper will review factors contributing to food insecurity in students, the impact of food insecurity, and identify potential solutions.

Introduction

Food security is defined as when "people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life" [1]. Food is a physiological need for basic human functioning and is not only considered a human right but is also an important social determinant of health [2]. There is a strong body of evidence supporting the relationship between food and well-being. According to Maslow's hierarchy of needs, without physiologic fulfilment from sufficient food, individuals cannot be well enough to attain higher functions such as maintaining relationships and attaining self-actualization [3]. Unfortunately, in our society, food insecurity is all too common, affecting approximately 5 million Canadians in 2020 alone. Food insecurity is most prevalent in low-income households, elderly populations, and single parent families. It also has been linked to adverse health outcomes such as hypertension, diabetes, and obesity [2].

One population that is often overlooked and particularly vulnerable to food insecurity is post-secondary students [4]. In a study conducted by Feige and Yen, 2021, it was found that financial strain and worry over student debt is a common concern for many Canadian students [4]. In addition to making tuition payments, there are also potential costs of books, transportation, and rent which can be difficult for students to afford with limited financial income and government loans. While food insecurity experienced by post-secondary students is a large and complex concern, there is a lack of research available on the prevalence of food insecurity in Canadian students [5]. The Canadian government annually administers the Canadian Community Health Survey which measures household food insecurity [6]. While the data collected provides insight on fluctuations in food insecurity by geographical regions, age groups, and sex, there are no further filters to better understand how students specifically are affected by this issue [6]. Thus, there is an urgent need for further research to elucidate the national prevalence of food insecurity in post-secondary students and better support those in need.

Factors Contributing to Food Insecurity in Post-secondary Students

Post-secondary students are a population that is under unique financial constraints. Beyond the rising cost of living in Canada [7], many students face an additional barrier – choosing not to maintain a job while in full-time studies. Only about half of Canadian undergraduate university students work [8], and those that do not are limited by strict budgets informed by student loans or summer income. With rising costs of food [9], many students must choose between either going deeper into debt or limiting their food purchases to cheaper, less healthy alternatives, or less food in general. Furthermore, the busy schedule of university classes and extracurricular activities can create additional obstacles, including insufficient time to access, prepare, and consume food, as well as limited access to fresh food. Many student housing districts have limited walkable access to groceries stores [10], leaving students with inadequate options to purchase groceries.

Impact of Food Insecurity on Post-secondary Students

Having restricted access to food has extensive effects on post-secondary students. It has been established that inadequate access to nutritious food has adverse effects on academic performance [11]. Cheaper options are usually less nutritious, and an inadequate diet also puts students at risk of malnourishment and obesity [12]. Furthermore, food insecurity predisposes individuals to development of depression and anxiety [13]. Beyond this, post-secondary education is often the first period in many young adults' lives when they live independently. Being able to access affordable, healthy food is needed to inform lifelong cooking and eating habits [14].

Proposed Solutions

The multifactorial impact of food insecurity on students highlights the need for effective and long-term solutions. One of the most common approaches to addressing food insecurity on campuses is the implementation of food pantries [15]. Food pantries aim to increase accessibility and reduce the financial barrier to accessing food. However, there are flaws in the food pantry model for post-secondary students. Many initiatives are run by student organizations which incur high degrees of leadership turnover and changes in availability based on the motivation of the student organization [15]. There may also be stigma associated with visiting food pantries run by peers or colleagues. Some institutions also distribute a list of resources for food assistance programs on their website. While it is helpful to have available resources, there needs to be more of an onus on post-secondary institutions and government to have a more coordinated response.

The 2021 National Student Food Insecurity Report outlines recommendations for addressing food insecurity at Canadian post-secondary institutions [16]. It was found that 40.3% of survey respondents felt that grocery gift cards would assist with increasing affordability of groceries, promoting autonomy in purchasing food of their choosing, and removing the stigma associated with accessing food banks [16]. Additionally, food literacy can also be encouraged through educational workshops on creating budgets, learning about nutrition, and cooking easy meals. On a policy level, 21.6% of respondents stated the desire for the provincial or federal government to provide tuition support to ease the financial burden on students and help with allocating more money towards meals [16].

Conclusion

Food insecurity is a pervasive and often overlooked concern in post-secondary students, a particularly vulnerable population. Changes should be implemented at a local level at post-secondary institutions as well as on a policy level to create meaningful change.

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Global disease burden and advocacy: A comparative analysis of the global response to tuberculosis versus COVID-19

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Introduction

In a world that is more interconnected than ever, it is vital to understand that “global health is more than just ‘public health somewhere else’” [1]. Global health challenges that appear in one part of the world now have the potential to have a global impact due to the rise in globalization, where “nations, businesses, and people worldwide are becoming more connected and interdependent” through increased travel and trade [2]. As such, all nations have the responsibility to collaborate, share scientific evidence and treatment strategies to manage and implement solutions to global health challenges and ensure the health of all people worldwide. However, the widening divide between the Global North and the Global South has increased disparities in the way global health challenges are experienced and addressed.

This paper examines the differences between the burden of tuberculosis (TB) disease and the coronavirus disease 2019 (COVID-19) in the Global North and the Global South. Specifically, this paper assesses the influence of the global funding landscape and the role of health systems on the global response in disseminating scientific evidence and the nature of advocacy to address these issues.

Tuberculosis and COVID-19 are respiratory infectious diseases, both of which affect the lungs, and are the top two leading infectious killers in the world, however, the similarities end there [3,4]. While both diseases are prevalent in countries worldwide, the burden of each disease varies in the concentration of cases by global region. While TB infections and deaths are more concentrated in low- and middle-income countries (LMICs) in the Global South, data suggests that COVID-19 deaths are more concentrated in the Global North [3,5]. Unfortunately, this regional difference in the burden of disease exposes more significant differences in the approach to the use of scientific evidence and the nature of advocacy to tackle each disease.

Burden of disease and the global funding landscape

In 2020, funding in LMICs for TB drastically decreased to under half of the global target [6]. While there was an increase in the lack of funding, the burden of TB remained high in the Global South. In 2020, approximately 10 million people were diagnosed, and 1.3 million people died of the disease globally [6]. Meanwhile, in the same year, the COVID-19 pandemic raged across the world. It was estimated, based on global excess mortality rates, that almost three million people died, with the greatest burden experienced by the World Health Organization (WHO) regions of the Americas and Europe [7].

It was estimated that 5.3 billion USD was provided in funding for TB management and elimination in 2020, and that the funding that was received was primarily from domestic sources [6]. Meanwhile, also in 2020, global commitment for COVID-19 funding exceeded 20 trillion USD [8]. The disparity in funding to tackle each of the two diseases and the regions with the greatest burden of disease makes it evident that the Global South often suffers disproportionate consequences of global health challenges. This is also evident through global vaccine production and equity, where TB has only one licenced vaccine available for treatment since its development over 100 years ago in 1921, as compared to COVID-19, which has 11 vaccines developed since the start of the pandemic in 2019, all granted for emergency use by the WHO [6,9].

Tuberculosis has held a significant burden of disease in global health; however, it has neither had the same level of scientific evidence to support its management and elimination strategies, nor the same level of advocacy to tackle the disease. Current strategies for its prevention, diagnosis and treatment are highly outdated and more funding is required for basic research in the Global South [10]. Advocacy for TB is also significantly underfunded, especially compared to COVID-19.

Comparatively, in the Global North, governments, non-governmental organizations, and philanthropic organizations are a few donors that have contributed funding to vaccine development and health impact and outcomes research for COVID-19 [8]. Funding has also been contributed to advocacy efforts to raise awareness through scientific evidence with the support of medical experts, both through research publications and social media outlets. This level of research and advocacy for TB is lacking in the Global South.

Burden of disease and health systems

In addition to the disparity in commitment to funding in the Global North versus the Global South, the strength of health systems in the regions with the greater burden of disease impacts the scientific evidence and nature of advocacy. Within the health systems, financing, access to treatment tools, and service delivery impact the responsiveness and the population's health outcomes [11]. In the COVID-19 pandemic, there is clear evidence of the positive impact of collaboration between governmental and non-governmental sectors to bolster the health systems in the Global North to improve care for the population. The same cannot be said for TB, as the lack of external funding outside of domestic sources has raised the potential of increasing "the fragility of national health systems" in the Global South [12].

Dr. Tedros Adhanom Ghebreyesus, WHO Director-General recognized the "lack of political will" as one of the main challenges to fighting TB [13]. This lack of political commitment, specifically to transform health systems, has weakened local collaboration and dissemination of scientific evidence, thus weakening the response to tackling TB. Although the Global North and the Global South both experience challenges related to the burden of disease, the disparity in the response lies in the strength of the health systems within each region, which impacts scientific evidence and advocacy to tackle each health challenge.

Conclusion

As the world is becoming increasingly interconnected, a health challenge in one region, if not managed and eliminated, has the potential to become a challenge in all regions of the world. While disparities currently exist in the way diseases are tackled in the Global North and the Global South, it is essential to recognize and acknowledge these differences. By doing so, nations can work towards re-evaluating strategies to manage global health challenges, and towards successful priority setting that ensures collaboration and just resource allocation. Political will and commitment to health equity can bridge the widening gap, encourage the dissemination of scientific evidence, and strengthen advocacy efforts on a global level to improve the health of all people worldwide.

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OPINION EDITORIAL
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Call to Action: The Practice of Critical Allyship in Improving Global Health Governance

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Introduction

The United Nations put forth 17 Sustainable Development Goals (SDGs) to be achieved by 2030, which aligns with the global health agenda [1]. Although there has been significant progress in improving overall health outcomes through the SDGs, the gains can be inequitable as interventions may be less accessible for marginalized populations [1]. At the current pace, many SDGs will not be achieved by 2030 and a change to current practices is required [2].

Specifically, as global health remains rooted in its European colonial and academic origins, power asymmetries and barriers to self-determination are perpetuated [3]. This limits progress towards achieving the SDGs. In order to dismantle power structures for sustainable development, an effort to decolonize global health and create representative leadership is needed. Decolonizing global health is a continuous and coordinated process that requires all sectors to prioritize equitable health outcomes [3]. The adoption of critical allyship encourages acknowledgment of privileges and power imbalances, which supports decolonization and creates a more inclusive global health system, as suggested by Madhukar Pai [4]. Allyship, as defined by the *Anti-Oppression Network*, is “an active, consistent, and arduous practice of unlearning and re-evaluating, in which a person in a position of privilege and power seeks to operate in solidarity with a marginalized group” [5]. Therefore, allyship involves actively acknowledging and challenging structures that perpetuate power differences. However, allyship can be misconstrued as an identity, rather than an active process. Instead, the term “critical allyship” is used to emphasize its role in challenging systems [6]. The purpose of this paper is to expand the role of critical allyship in strengthening global health governance to improve SDG performance.

Allyship in Global Health

To apply the practice of allyship in global health, it is important to acknowledge the barriers to health posed by systems of oppression. This paper uses Nixon’s Coin Model of Privilege and Critical Allyship, which describes privilege and oppression as the two sides of a coin [6]. The coin represents a system of oppression that is in place. Those who fall on top have unearned privilege, while those at the bottom are oppressed [6].

Systems of oppression persist across sectors, and the field of global health is no exception. Global North actors have historically taken the role of the sole knowledge keepers as they hold most leadership positions in global health organizations [4]. Global South researchers are often restricted to peripheral roles, such as a data collector despite having the expertise to take on more responsibility [7]. This lack of self-determination in the Global South has caused power asymmetries to become prominent in global health research. This has resulted in interventions being imposed on the Global South without their sufficient input.

Global health governance has historically been driven by power dynamics that favour the interests of the Global North, thus positioning the Global South on the bottom of the coin [6,8]. Furthermore, this approach limits solutions to the challenges faced by the Global South. As such, a shift in current global health epistemologies is long overdue. Critical allyship is emerging as a promising tool that can guide equitable partnerships in global health work.

Elements of Critical Allyship

Critical allyship in global health encompasses several key elements that draw on the following sources: Nixon's principles for practicing critical allyship, the elements of allyship in academic and activist literature, and principles of critical and ethical global engagement [6,9,10]. Critical allyship involves recognizing the role of privilege and oppression in the local context, dismantling asymmetrical power relations, and amplifying marginalized voices [6,9]. This mindset promotes mutual learning and benefit, as well as self-determination [10]. In addition, practicing critical allyship requires accountability for inclusion. Inclusion ensures supportive environments where community members are valued for their contributions and meaningfully support decision-making [11,12]. Accountability for inclusion can be achieved by practicing ongoing self-reflexivity to consider the differences in positionality, values, and assumptions of all the involved stakeholders [10]. Together, these interdependent elements of critical allyship prioritize the engagement of those on the bottom of the coin to address challenges in achieving the global health agenda.

Critical Allyship in Improving Global Health Governance

Given the importance of collective effort among Global North and Global South actors in achieving the SDGs, a shift towards equitable global health governance is warranted. This shift is possible through the integration of critical allyship into the functions of global health governance, which in turn will accelerate progress toward the SDGs.

The global health system has four key functions to achieve common goals, such as the SDGs. These functions are to produce global public goods, manage the externalities across countries, mobilize global solidarity, and stewardship [13]. Stewardship is the foundation of these functions as it determines the voices that guide the development of policies and programs.

Critical Allyship in Stewardship

Stewardship involves engaging relevant stakeholders when building a consensus on global health priorities and developing policies [14]. However, within the global health space, there is a lack of inclusion in governance [15]. This can lead to solutions with unintended consequences, which can limit progress towards the SDGs. The practice of critical allyship can encourage Global North actors to recognize their privilege, reorient their position, and work in solidarity with and amplify suppressed voices. This ensures that relevant perspectives are subsequently incorporated in the development of policies. The meaningful involvement of actors in the Global South enhances democracy for decision-making and consensus on priorities. As such, critical allyship strengthens the stewardship function for achieving the SDGs.

Shift from Individualistic to Collective Action on the Social Determinants of Health

Improving stewardship through critical allyship can change how the social determinants of health (SDOH) are addressed to reduce health inequities. The SDOH continue to be a driving force in differential health outcomes globally and must be considered when attempting to achieve the SDGs. Currently, much of the literature on the SDOH focuses on individual-level risk factors [1]. However, the risk-factor approach can create a dangerous narrative where an individual's behaviours are isolated from the structural, economic, and social contexts in which they live [1]. This individualistic mindset blames marginalized groups for a perceived inability to control associated behaviours, rather than recognizing the systems that perpetuate them. This is also known as the depoliticization of the discourse, a key challenge in achieving the SDGs [1]. Since this discourse is often led by Global North actors, it can be difficult to recognize the systems that oppress the Global South [1]. Critical allyship challenges this narrative by recognizing identities of privilege and oppression, the structures within which individuals exist, and the intersection of these factors. Through improvements in stewardship, the Global South will be better positioned for decision-making that aims to address the root causes of inequity. As a result, practicing critical allyship can encourage a shift towards collective understanding and action on the SDOH to effectively address the SDG agenda.

Conclusion

Critical allyship can help achieve the SDG agenda by shifting from individualistic approaches to collective action within global health governance. The colonial origins, as well as the perspectives and practices that perpetuate them, can be acknowledged and dismantled with critical allyship. This practice challenges systems of oppression and strengthens the stewardship function of global health governance. It is imperative for individuals and organizations in global health to adopt the practice of critical allyship to promote self-determination and create a more equitable global health system.

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Access to Sexual and Reproductive Health Services for Refugees and Internally Displaced Persons in the Democratic Republic of the Congo

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Executive Summary

During a post-conflict era, the Democratic Republic of the Congo (DRC) has continued to experience alarmingly high rates of sexual and gender-based violence (SGBV) among refugees and internally displaced persons. Unfortunately, due to political instability and corruption among the armed forces, women and children are subject to various atrocities with few options for escape. Recent studies looked at the efficacy of short-term reactive strategies in response to SGBV and addressing the associated ostracism, social stigma, physical and psychological trauma.

Introduction

The Democratic Republic of the Congo (DRC) has continuously been ravaged by conflict since the first civil war in the early 1990s [1,2]. Despite the wars having come to an end, a major humanitarian problem triggered by gender inequalities and systemic violence is sexual and gender-based violence (SGBV), encompassing brutalities including rape, intimate partner violence and sexual exploitation [1-8]. Due to political and social unrest in DRC, one of the most vulnerable groups subject to these atrocities are refugees and internally displaced persons [2,3].

Although studies described difficulties in recording exact numbers of instances due to systematic instability and stigma surrounding SGBV, the United Nations Population Fund (UNFPA) reported an average of about 8000 cases of sexual violence occurring yearly in Eastern DRC [1-3,6]. As refugees separated from their families, women and children have faced greater incidences of SGBV, through coercion, in exchange for food, sanitary products and basic means of survival [2,3,6].

> *"I took refuge in a camp for displaced people where I was raped by three armed men…The physical and psychological pain was immense."*
> *– refugee victim in DRC [4]*

Following instances of SGBV, individuals are subject to numerous aftermaths including sexually transmitted infections, unintended/ unwanted pregnancies, psychological trauma, and ostracism from spouses and family. As such, access to sexual and reproductive health (SRH) services such as menstrual health and hygiene, safe abortion care and care for sexually transmitted infections is crucial for the physical and psychological health of forcibly displaced women, children and even men [1-3,6-8].

Approach and Results

A study by Lugova et al. (2020) examined the efficacy of current strategies adopted by the government to tackle issues of SGBV in DRC. Past efforts and laws functioned to officially criminalise acts of sexual violence, ensure protection of victims through protection programmes and increase accessibility to the justice system through mobile courts in rural areas [1]. However, these attempts were unsuccessful and there were no reported significant improvements in holding individuals accountable through the justice system [1]. One of the latest attempts to address the SGBV in an efficacious manner was through the implementation of the 2009 comprehensive strategy for UN Action on Sexual Violence in Conflict [1,2]. Through multilateral funds, this strategy employed national authorities to help combat impunity, prevent and protect against SGBV, bolster security sectors, and provide multi-sectoral assistance for survivors of sexual violence [1,2]. On the international level, the United Nations Security Council Resolution aimed to prioritize the protection of civilians and fight against impunity through raising international awareness and holding the Congolese army and officials accountable for their actions [1].

Regarding results, the recent international efforts were successful in bringing high ranking army officials to justice for their crimes involving SGBV [1,2]. Moreover, the United Nations High Commissioner for Refugees (UNHCR) has collaborated with other humanitarian organizations to address SGBV through the development of community centres providing cases identification and support services [1,2]. On the contrary, similar to previous unsuccessful efforts, the UN Action on Sexual Violence in Conflict strategy encountered obstacles on the national level due to lack of policy implementation by the government and consistently high levels of political instability [1,2].

“Our staff have heard horrific testimonies of extreme violence. Forcibly displaced persons have accused armed groups of carrying out mass rape as women attempt to flee their homes. Some women and girls have been abducted and used as sex slaves by armed group members.”
– UNHCR worker [5]

Conclusion

Overall, it was found that although policies were put in place to provide SRH services to address the SGBV experienced by refugees and internally displaced persons, they were not significantly effective in mitigating the various associated adversities. A point of interest is the failure and lack of effort from the Congolese government in implementing policies to protect its citizens. Evidently, the Congolese government has been the largest stakeholder hindering the progress of any strategies presented in both a national and international context. Governmental support was critical in several ways, as survivors looked to obtain justice through community mediation without proper legal enforcement [1,2,4,6]. Moreover, based on current policies it seems many strategies are focused on responding to outcomes of SGBV, as opposed to developing prevention strategies.

Implications and Recommendations

Due to the major role played by the Congolese government and international organizations, many of the implications and recommendations involve participation and commitment from these stakeholders. It seems the government continues to supress SRH services and maintain political unrest, allowing army and political officials to continue corrupt actions including SGBV and illegal mining activities for personal gain [1,2]. Regarding implications, if the Congolese government continues to permit these detrimental activities the constant political instability will prevent international support from reaching DRC [2,4]. Moreover, the short-term reactive nature of the present SRH strategies will only aid in alleviating consequences of SGBV rather than prevention [1,2]. As such, it is critical to implement future SRH recommendations that tackle SGBV in a preventative manner on local, national and international levels.

To increase sustainability and efficacy of access towards SRH services and ensure the mitigation of SGBV towards refugees and internally displaced persons, the following measures are recommended.

1. Combat stigmatization whilst empowering women [2,4,7,8]

At the local level, community members must provide safe spaces for those affected by SGBV and increase education of women, children and men. At the national and international levels, the government must increase outreach activities to confront SGBV in communities, proper utilization of World Bank investments to the education sector and address increased external pressure in stabilizing political unrest. These efforts are expected to limit the ostracism experienced by SGBV survivors and empower women to take control of their lives [2,4,7,8].

2. Strict adherence to judicial processes and legal guidelines [2,4,7,8]

At the local level, communities must limit unofficial community mediation of incidents and improve upon evaluation and referral procedures. At the national and international levels, governments must increase reforming police/judicial systems. These efforts are expected to increase the appeal of legal procedures and improve international relations to increase funding [2,4,7,8].

3. Equitable access to SRH services/resources [2,3,7,8]

At the local level, communities must create safe and inclusive environments and implement co-design practices in developing effective SRH services. At the national and international levels, government funded SRH services must be offered in more areas through cost-effective methods and help alleviate gender health inequities. These efforts are expected to develop cheaper and effective methods that improve relations in response to delivering improved resources/services [2,3,7,8].

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Ongoing Assaults on Schools and Healthcare in Northern Nigeria: A Grim Future for the Region

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Background

Armed conflicts continue to pose significant challenges to global health, education, and socioeconomic stability [1,2]. Boko Haram insurgency in north-eastern Nigeria and the surge in armed banditry in the country's northwest and north central regions remain significant concerns in Nigeria [3]. Targeted attacks on educational and medical facilities have increased because of the rising instability in northern Nigeria, which is being fuelled by covert alliances between terrorist organizations, such as Boko Haram and local gangs [4,5]. Due to the significant disruption caused by these assaults, rates of maternal and neonatal mortality, malnutrition, and infectious diseases have all increased [5,6].

On the other hand, the education sector has also suffered greatly. Thousands of pupils and teachers have been killed, abducted, raped, and forced to flee as a result of terrorist organizations and bandits working together [7,8]. More than 1,000 pupils were abducted in 2021 alone, while dozens of educational facilities were demolished or left unattended [8]. As a result, the number of children not in school has increased from 10.5 million prior to the conflict to approximately 20 million in 2022, underscoring the crisis' impact on enrolment [9]. In the month of April alone, two female students were abducted from their hostel in Zamfara [10], and ten other students were held hostage in a separate attack in the nearby Kaduna State [11]. In a related event, a separate attack in Zamfara resulted in the kidnapping of approximately 80 school-age children [12]. These attacks have devastating consequences for the healthcare and education systems in the affected areas, ultimately jeopardizing the future of millions of Nigerians [4,5].

This piece seeks to emphasize the urgent need for a comprehensive approach that addresses the root causes of these conflicts, fosters peace and stability, and provides humanitarian assistance to achieve sustainable development in northern Nigeria. Failure to act will result in dire consequences for the region's future, as a lack of access to healthcare and education could perpetuate a cycle of poverty, violence, and instability for generations to come.

Generational Consequences of the Conflicts

The conflicts in northern Nigeria have generational implications that extend beyond the immediate impact on healthcare and education [8,13]. A prolonged lack of access to quality healthcare and education will lead to a population that is less healthy and less educated, limiting their ability to contribute to the region's development and break the cycle of poverty and violence. The psychological trauma experienced by children who have been kidnapped, witnessed violence, or been forced to flee their homes will also have long-lasting effects on their mental health and overall well-being [14]. Furthermore, the ongoing conflicts exacerbate existing social, economic, and political challenges in the region, such as poverty, inequality, and weak governance. The instability created by these conflicts makes it difficult for government and non-government organizations to provide essential services and implement development projects, further hindering the region's progress [15]. As the situation continues to deteriorate, there is a risk of a "lost generation" of children who have been deprived of their right to education and healthcare, which will have profound consequences for the future of northern Nigeria and the broader African continent.

The Need for a Comprehensive Approach

An all-encompassing strategy that addresses the origins of the conflicts, fosters peace and stability, and offers humanitarian aid is required to solve the grave situation in northern Nigeria [15]. To improve security and restore vital services in the area, this policy should involve cooperation between the Nigerian government, regional allies, and the international community.

1. Addressing the Root Causes

Tackling the root causes of the conflicts in northern Nigeria requires a multifaceted approach that addresses poverty, corruption, weak governance, and other underlying factors that fuel the violence [15]. The Nigerian government and its regional and international partners must work together to develop and implement policies that promote economic growth, reduce income disparities, and create opportunities for the population, especially young people, to engage in productive activities [3]. Additionally, efforts to combat corruption and strengthen governance should be prioritized as this will contribute to improving public trust in government institutions and fostering a sense of social cohesion.

2. Promoting Peace and Stability

Efforts to promote peace and stability in northern Nigeria should focus on enhancing the capacity of local authorities and security forces to protect communities, as well as engaging in dialogue with armed groups to negotiate ceasefires and disarmament [3]. This process should involve regional and international actors, including the African Union and United Nations, to ensure a coordinated and effective response. Furthermore, peacebuilding initiatives should include support for local community leaders, religious figures, and civil society organizations that can help mediate conflicts and promote dialogue between different ethnic and religious groups. Such initiatives are crucial in fostering understanding, trust, and reconciliation among communities affected by violence.

3. Providing Humanitarian Assistance

The dire situation in northern Nigeria calls for urgent humanitarian assistance to alleviate the suffering of the affected population [3]. The international community, including donor countries and aid organizations, should work closely with the Nigerian government and local partners to provide essential services, such as healthcare, education, food, water, and shelter to those in need. This support should also include psychosocial services for children and adults who have experienced trauma due to conflicts.

Moreover, humanitarian assistance should be complemented by longer-term development efforts aimed at re-building the region's infrastructure, restoring essential services, and creating an enabling environment for economic growth and social progress [3].

4. Achieving Sustainable Development

To address the concerns raised by the ongoing conflicts in northern Nigeria, it is essential to strive for sustainable development that encompasses economic growth, social progress, and environmental protection [3,16]. This approach should involve the active participation of all stakeholders, including the government, private sector, civil society, and local communities, to ensure that the region's development is inclusive, equitable, and environmentally sustainable. Investment in education and healthcare infrastructure, teacher training, and the provision of safe spaces for learning and healthcare services should be at the forefront of international aid and development initiatives. Additionally, programs that promote skills development and vocational training for young people can help create employment opportunities and reduce their vulnerability to recruitment by armed groups. Another crucial element of sustainable development involves harnessing the inherent expertise of local communities and promoting their leadership in driving change [17,18]. This approach necessitates capacity building within these communities, empowering them not just to collaborate, but to spearhead initiatives, thereby ensuring the longevity and self-sustenance of the implemented programs.

Conclusion

The ongoing attacks on healthcare and education infrastructure in northern Nigeria threaten the region's future, trapping generations in poverty, conflict, and instability. A comprehensive strategy addressing the root causes, promoting peace, and providing humanitarian aid is crucial. The Nigerian government, regional allies, and the international community must work together to encourage economic growth, reduce socioeconomic disparities, and create opportunities for the youth. Prioritizing efforts to combat corruption and improve governance will foster public trust and social cohesion. Investment in education and healthcare infrastructure, teacher training, and safe spaces for learning and healthcare services should be emphasized in international aid and development programs. By tackling these challenges, sustainable development and a better future for northern Nigeria can be achieved.

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ART SUBMISSION

Level X: Access to Healthcare

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In this artwork, we wanted to highlight various social determinants of health and how they influence access to healthcare services. We used a game setting to symbolize how there are obstacles to overcome, as well as tools that will make it easier to reach the end goal. We showed how social determinants can be different obstacles by having the character jump either to avoid a barrier or to reach a pathway toward the end goal. The red shoes and jet pack symbolize that everyone starts at different points – some may have various supports, and that will be useful to get access faster or more easily compared to others. The fallen character shows that some will have a difficult time reaching adequate resources to even access healthcare. Finally, by having “access to healthcare" as a flag pole, we wanted to show that despite everyone accessing healthcare, people may be able to reach different levels of care depending on their circumstances.

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Critical Analysis of Linguistic and Cultural Barriers Between Patients and Physicians: Recommendations from a Multilingual Tuberculosis Awareness Campaign in Pakistan

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Introduction

As a result of growing globalization and migration waves, healthcare practitioners are increasingly caring for patients from varied cultural and/or ethnic minority backgrounds [1]. However, due to a mix of linguistic and cultural barriers, adequate health communication with migrants and ethnic minorities is often more difficult to establish than with individuals belonging to a particular society's dominant groups [1]. Scientific literature indicates that linguistic barriers across health services in a multilingual culture might place significant risks to patients' lives, since they may be unable to explain their symptoms and concerns to healthcare practitioners [2]. Previous research has also cited the benefits of overcoming communication barriers [2]. For example, it can help foster trust between patients and medical personnel, which can increase participation in the treatment procedure for their disease remedy [2].

The need for diversity, equity, and inclusion

Due to increased globalization, the rates of immigration have increased significantly, leading to healthcare personnel encountering more patients from diverse ethnicities and cultural backgrounds. However, barriers to communication in health settings are not limited to migrant patients. There is a need to cater to the issue of medical jargon and local patients that speak multiple languages. Some of these patients may prefer conversing in the native languages that they are more comfortable with and understand more clearly. A multifaceted approach to patient care built on the foundation of diversity, equity, and inclusion is necessary to provide a holistic treatment experience. Aberjhani, an esteemed philosopher, once said: “Diversity is an aspect of human existence that cannot be eradicated by terrorism or war or self-consuming hatred. It can only be conquered by recognizing and claiming the wealth of values it represents for all” [3].

Tuberculosis Awareness Campaign

Through my experience as a tuberculosis (TB) awareness campaign leader, I had the opportunity of examining these barriers from a healthcare service perspective. During this experience, I made trips to Pakistan’s suburban and rural areas, as these regions had a significantly higher incidence of TB. Despite limited access to screening and testing, the prevalence of TB is still higher than in urban areas.

There were several reasons explaining this disproportionate prevalence of TB. Firstly, I noticed the financial constraints of rural inhabitants and their inability to afford testing services along with treatment. Therefore, I collaborated with the Fauji Foundation Hospital to initiate charities aimed at supporting the low socio-economic families. The finances gathered through these charities were distributed among rural and suburban areas to help them afford the treatment process. Secondly, another major reason that led to the marginalization of these communities was a gap between TB patients and healthcare providers. As part of the campaign, our team was required to survey the population to learn about their characteristics so that tailored solutions could be formulated. As the rural districts had limited access to technology, our team conducted door-to-door visits and delivered questionnaires. After surveying the population, I learned that approximately 54% of the population was completely unaware of the disease, its pathophysiology, and preventative measures. During the course of my campaign, the majority of the individuals had no knowledge of English, therefore speaking the local Punjabi and Urdu languages was necessary. While doing so, I realized that I was able to connect with them on a deeper level, which allowed me to not only actively listen to their concerns, but also explain our campaign rationale effectively.

Benefits of a Patient-Centered Approach

A patient-centred approach emphasizes displaying modifiable staff behaviours that culturally diverse patients identify as indicators of respect for their culture, allowing these patients to feel at ease [4]. This treatment is unique in that it is based on the perspectives of individuals with diverse backgrounds rather than healthcare experts [4].

While leading the TB campaign, I read a research article by Stubbe that allowed me to understand the benefits of such an approach to patient care by applying them practically [7]. As we worked to establish trust with the TB patient population, the process of raising awareness regarding preventative measures was made easier. To achieve this, we prioritized a mutual partnership with patients by understanding the patients' feelings through open-ended questions. Using a journal to jot down important notes regarding what the patients excepts from the medical personnel aided in fulfilling their needs [7]. Moreover, our healthcare team created a family genogram that helped in clarifying the family dynamics of patients and their background [7]. These observations were noted and helped personalize the treatment approach according to each patient. The patients felt comfortable sharing their feelings, which made it easier to address their concerns.

Benefits of a Culturally Sensitive Approach

Recounting another healthcare experience in Canada at Halton Medix, I observed similar linguistic barriers in my role as a physician assistant. Fortunately, I was able to use my multilingualism to minimize patients' nervousness by lending an ear, which instilled within me the value of a patient-centred approach that works to alleviate barriers. My most recent interaction last week with a francophone child receiving his measles vaccination is one that I will not forget. While writing Subjective, Objective, Assessment, and Plan (SOAP) notes with my mentor. I conversed with the child and his mother and found out they were from Canada's Quebec region. I used my familiarity with French to converse in their native language and connect with them. Noticing the child's nervousness, I had a conversation with him regarding his favourite cartoon. After learning that we enjoyed the same shows as children, I put his favourite show on the screen as he received his vaccination to reduce his anxiety, develop trust, and alleviate his fear.

This experience resonates with me profoundly as it showcases the need to reduce linguistic barriers and adopt a more patient-centred, culturally sensitive approach that yields a positive experience for the patients.

Recommendations

There are several ways to work towards reducing these barriers. The first method entails using staff members who speak the same language as the patient to help interpret the conversation [5]. Training programs implemented in healthcare settings across the globe help train medical interpreters [5]. These interpreters undergo a minimum of 40 hours of language training and board certification to become a licensed medical interpreter [5]. In the case of global healthcare workforce shortages, these interpreters assist in patient-care virtually by interpreting medical encounters [5]. As mentioned earlier, my experiences in healthcare and multilingualism have aided me immensely in improving the quality of patient care. Secondly, when possible, medical instructions should be provided to patients in their preferred language, as they might not always be able to read English [5]. While raising awareness regarding TB, I noticed that providing preventative measure instructions in their native language was more effective in ensuring that the message resonated with the population. Lastly, in my experience, it is not sufficient to be multilingual, but it is equally essential to be multicultural. Creating a multicultural atmosphere is vital to help relate to the patient as it allows patients to open up and trust the service provider throughout the process [7].

Conclusion

In light of the discussion above, language barriers are common challenges for healthcare accessibility around the globe [6]. Although challenging to overcome, adopting a holistic approach and displaying collegiately with the healthcare team can help ensure that a positive atmosphere is promoted during patient care. Through first-hand experiences, I contend that a patient-centred approach should also encompass understanding the barriers from the lens of a patient. Ultimately, perspective-taking can help view problems in a different light and instill cultural competency within patient care to help improve patient outcomes.

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Investigating the Causes of the Refugee Crisis

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There is arguably not a more famous emblem of freedom than the Statue of Liberty. Engraved on the landmark is a poem that reads “Give me your tired, your poor, your huddled masses yearning to breathe free” [1]. This poem has since become a siren song for refugees worldwide. The refugee crisis has dominated geopolitical conversations for decades and the issue only seems to be escalating. In 2019, the United Nations reported that 26 million people were categorized as refugees [2]. Moreover, some of the main contributing factors to the on-going refugee crisis across countries include war, climate change, persecution, political unrest, and lack of basic goods.

One of the leading causes of the refugee crisis is war. A prime example is the Syrian refugee crisis. The tentative starting point is deemed March of 2011 when the government took violent action against anti-government riots [3]. Since then, the conflict has risen leading to civil wars. Furthermore, the constant conflict in the region produced systemic unemployment and widespread poverty [3,4]. Therefore, many Syrians were forced to leave the country because they could not afford necessities, such as food and water [3,5]. It is important to highlight how the actors involved in war create a perpetual cycle of displacement. Yemen, for instance, has been riddled with conflict since 2015 [6]. The United Arab Emirates has been the opposing force instigating conflict in the region. The Saudi-led coalition has been supported by the United States (U.S.) and many European nations through the sale of weapons [6]. This continued support has exacerbated the uninhabitable condition within the country and has led to an increase in refugees. Yet, many of these countries also provide humanitarian aid. Thus, an underlying issue in the refugee crisis is self-interest expressed by countries. Nations can profit from weapons sales, but also provide support to the very population they negatively impact [6]. The cycle will have to be broken if a change is to be made.

Recently, climate change has been identified as a reason for the refugee crisis [7,8]. This is understandable as many refugees descend from developing nations that rely on agriculture as a foundation for their economy [9,10]. Reports have indicated that climate change can negatively impact agriculture as it can lead to heat stress on livestock, increase pest volumes, and cause changes in weather patterns [9]. Additionally, developing countries lack resources to provide government assistance to rectify these systemic issues. Therefore, because of the lack of economic stability and financial opportunities, individuals are once again forced to search for security elsewhere. This can be seen in Somalia as droughts have left around 2.2 million people displaced [11].

Another major issue that pertains to the refugee crisis is persecution [12]. This can include religious, social, racial, and political oppression that forces individuals to leave a country in search of another. An example is the current religious persecution of Rohingya Muslims in Myanmar. More than 900,000 Rohingya Muslims had to flee Myanmar because of purposeful violence carried out by nationalistic militias who disapprove of their religious views [11]. A commonality between refugee issues that spark because of persecution is overall instability within the nation itself. Once again, many of these countries face economic turmoil, and government leaders use various groups as scapegoats rather than addressing the underlying factors that are at play [12]. This creates tensions and ultimately forces many to move to neighboring countries. The cycle often repeats itself, as neighboring countries start to face additional burdens. This can lead to local citizens resenting refugees and re-establishing the process of persecution once again.

In particular, the two major refugee disasters that have captured worldwide attention are the crises in Venezuela and Afghanistan. Furthermore, the refugee disaster in Venezuela is unique as it was mainly caused by internal economic downfall [13,14]. Moreover, Venezuela housed the world's largest oil reserves; yet, because of the mismanagement of resources, the country fell into severe economic pitfalls. Additionally, because of the various economic decisions made by the government, the currency in the country devalued, and this led to hyperinflation, a lack of food and basic goods, and limited access to medicines [13,14]. To this day, many Venezuelans are unemployed and only have access to one meal a day [13]. Although large numbers of Venezuelans left to seek refuge in neighboring countries, many still faced economic instability because of existing situations in surrounding countries and were often met with xenophobia. Although Afghanistan did not face the specific economic challenges that Venezuela did, the majority of the refugees also left the country due to food insecurity and lack of access to necessities [15,16]. The reason for economic instability was tied to environmental disasters disrupting the agri-business sector which is core to the economy [15]. Due to the limited resources, environmental investments were unable to occur leading the country to become more susceptible to natural disasters, such as droughts [15,16].

Furthermore, one of the major underlying reasons for the extenuating circumstances was the refusal of government leaders to adapt their principles and forfeit pursuing their political agenda for the greater good of the country. For example, both Hugo Chavez and Nicolas Maduro, leaders of Venezuela during the economic crisis, desired to hold positions of power rather than focus on strategies to mediate the economic downturn [13,14]. They were able to focus the country's conversation solely on political issues rather than the systemic poverty crisis. This can also be seen in Afghanistan as government leaders focused on territorial disputes and religious agendas rather than on the more serious issues facing citizens (i.e., poverty, hunger, and access to medical services). Also, the political leaders in both countries often promised citizens a future that was bright and near economic surges. Yet, these talking points were never met with productive policy. Moreover, political leaders in both countries were hyper-fixated on personal agendas, which resulted in poor infrastructure and major instability [13,14,15].

Specifically, the Afghan refugee crisis is also rooted in decades-long invasion and war. Thus, twenty years ago the U.S. invaded Afghanistan, which led to political instability and the rise of radical groups [17]. More recently, the U.S. withdrawal of troops from the country made way for the Taliban to gain full control of the government and resulted in another large influx of refugees [17]. Many individuals were motivated to leave because they feared the repercussions and possible societal changes. It's also important to mention that because of the ongoing conflict, many nations' citizens have curated prejudices against Afghan refugees and support policies that limit the number of refugees that can be admitted, therefore prolonging the problem. In contrast, international war and decades-long conflict are not a cause of the refugee crisis in Venezuela.

Overall, there are numerous reasons and issues that surround the refugee crisis in the 21st century. Some of these include climate change, political instability, persecution, the trickle-down effect of war, and lack of access to necessities. Often these causes are interrelated. Two current situations that were highlighted were the disasters in Venezuela and Afghanistan, which shared both similarities and differences. This topic contains many intricacies and going forward the global community should focus on supporting systemic changes to prevent further escalation of the crisis. For example, countries should be held more accountable regarding their climate goals to prevent the propagation of the consequences that fuel the crisis. Neighboring countries should strengthen their collaboration efforts on reducing climate-altering actions, such as creating coalitions to tackle cross-border landfill waste, air pollution concerns, and fossil fuel waste to name a few. Additionally, countries should incorporate the recommendations made by the United Nations' Sustainable Development Goals (Goal 13: Climate action), which emphasizes the need for green-forward energy companies and integration of climate-focused policies [18]. Individuals within communities can also contribute to these goals by volunteering their time to climate change efforts and utilizing environmentally friendly practices in their everyday lives.

Unfortunately, war and political unrest are phenomena that are not easily controlled. Therefore, it is more difficult to address such concerns because of the deep-seated context. On a global level, there should be a focus on helping re-establish structures in countries that face the consequence of previous instability and a commitment to a reduction in terror going forward.

Overall, to prevent further escalation in the refugee crisis, the global community should commit to a serious effort in combating climate change and collaborate to prevent excess instability and lack of basic human necessities. In the short term, developed countries should provide refugees with re-settlement options and individuals within communities should take action to assist with systemic change through volunteering or personal efforts of activism.

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ORGANIZATION SPOTLIGHT

The Global Health Annual Review is dedicated to recognizing and showcasing both local and global initiatives aimed at enhancing global health. In this edition, we have carefully selected organizations that we believe deserve commendation for their outstanding contributions to the field. Our intent is not only to acknowledge their impactful work but also to inspire and engage our audience in supporting these efforts.

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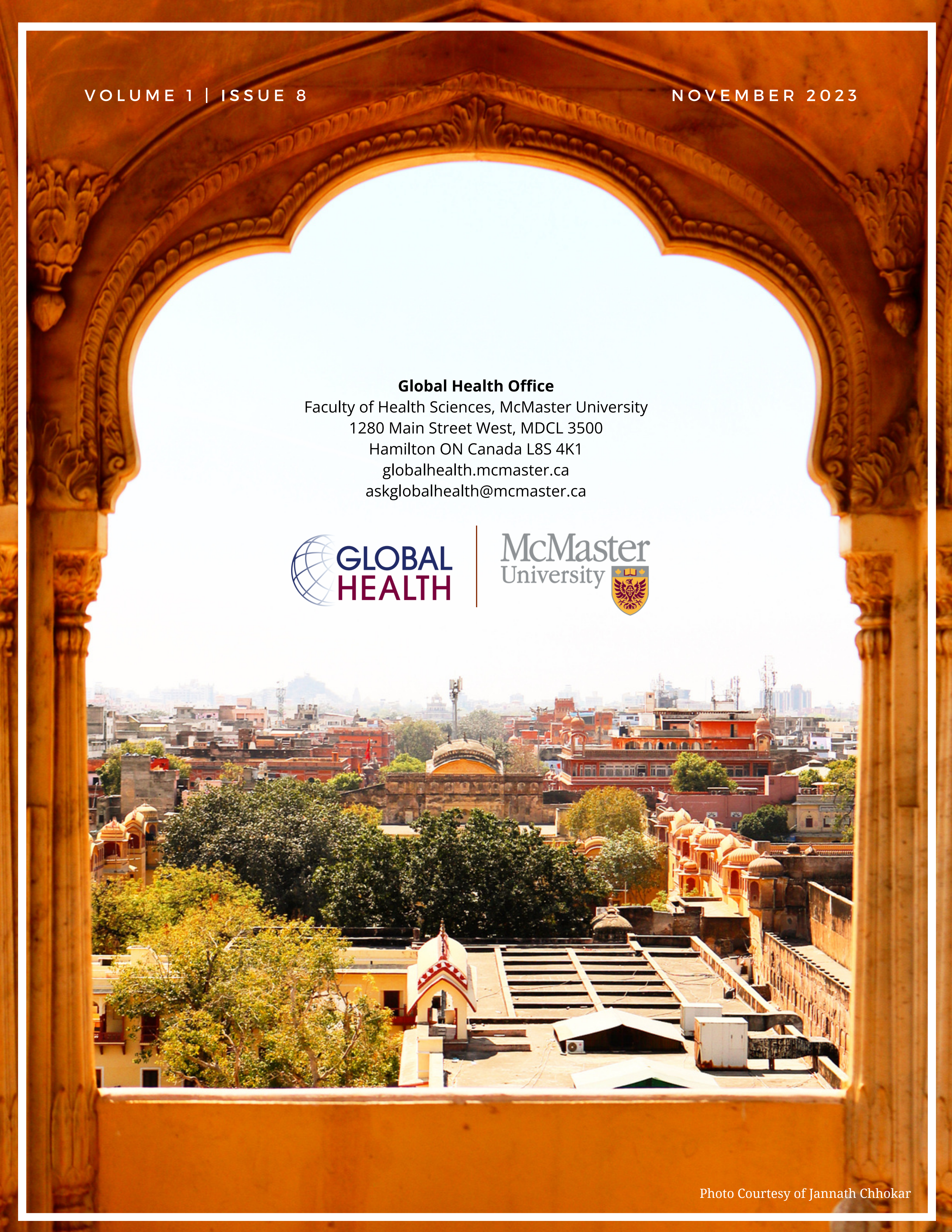

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