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From the Senior Editor

Dear Reader,

The Global Health: Annual Review (GHAR) is an open-access journal run by students and alumni of MSc. Global Health Program from McMaster University. First published in 2015, this journal is a platform for global health students, academics, and professionals to share their scholarly work with colleagues and the community.

Global health is intrinsically multicultural, and spans across many disciplines. The MSc. Global Health Program brings together a trans-national consortium of academic institutions and enables students to explore many current and emerging issues across social sciences, health sciences, business, and humanities. Through this exposure, the program aims to help young professionals develop the capacity to view health through multiple contexts and the intuition to work effectively in cross-cultural teams.

Following this philosophy, the GHAR journal welcomes submissions of original scholarly work from students and graduates, spanning across several different topic areas including health systems governance, health ethics, social justice, and environmental health. The research published here were done in a wide range of geographic regions, often as part of a student's thesis, major research paper, or global health practicum. In many cases, the resulting publication is the culmination of international collaboration between students, researchers, and authors across a student's graduate career.

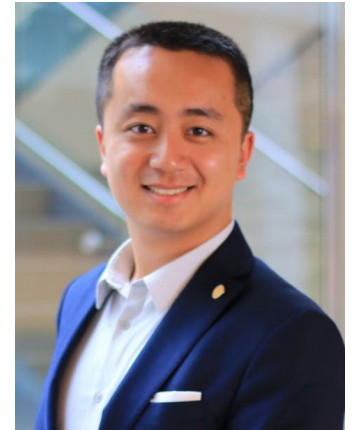
In *Issue 3* of GHAR, the editorial team accepted submissions in the form of research articles and opinion editorials. Based on the article's core thesis, these articles are categorized into two thematic areas: *Global Health Inequalities* and *Innovations*. We hope this issue of our journal gives you a glimpse of the research done by our students and alumni.

On behalf of our authors and the editorial board, I would like to thank you, the reader, for your interest and support in our journal.

Yours in Writing,



Kaiyang Fan on behalf of
The GHAR Editorial Board



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Netflix & Pill

what healthcare systems can learn from Netflix's success

Opinion Editorial

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As the originators of the Silicon Valley Human Resources bible, Netflix Culture: Freedom and Responsibility, Netflix has come to exemplify the user-friendly system¹, to which the North American healthcare system is the antithesis. Inundated with need and outdated in approach, the healthcare system is a labyrinth of bureaucracy that overwhelms even the healthiest and most able-bodied among us. This monolith is ripe for disruption, and the strong values, purposeful culture, and consumer-centred approach outlined in Netflix Culture provide the perfect guidance for the personalized future of medicine.

From Hollywood to the Hippocratic Oath: The Shared Values of Netflix & Medicine

The modern iteration of the Hippocratic Oath² and the nine "Netflix Values" (NV) outlined in Netflix Culture¹ show an ideological alignment that supports the possibility of a Netflix-inspired culture shift in healthcare systems. Physicians are trusted on a daily basis to make "wise decisions despite ambiguity" (NV: Judgment), "learn rapidly and eagerly" (NV: Curiosity), and to "challenge assumptions and suggest better approaches" (NV: Innovation). The Netflix Values also reflect the aspirational yet unachieved aspects of hospital culture. One example is seen as hospitals often fail to represent the Netflix Value of Selflessness as physicians seeking to gain rank have shown narcissistic responses to ego-threats³. In a profession where mistakes can often be matters of life and death, there is also incentive for healthcare professionals to not "be quick to admit mistakes" (NV: Honesty). Using Netflix Values as a guideline, hospitals may improve their culture to become more compassionate institutions for both patient and practitioner.

From Boardroom to Bedside

After the "9 Shared Values", there are six other key Aspects of Netflix Culture; High Performance, Freedom and Responsibility, Context not Control, Highly Aligned/Loosely Coupled, Pay Top of Market, Promotions & Development. Under 'High Performance', Netflix asserts that "stunning colleagues" form the backbone of the company and that "internal cutthroat or sink-or-swim behaviour is not tolerated". This element of Netflix's culture is desperately needed in medicine, where toxic competitive attitudes are fuelled by increasingly unattainable standards for medical school admission⁴ and residency placements⁵. Furthermore, medicine often celebrates what Netflix calls "Brilliant Jerks" (such as Dr. House of House, MD featured on Netflix); Netflix does not. They believe that "cost [of Brilliant Jerks] to teamwork is too high", and a similar mentality in healthcare may serve to foster increased collaboration and healthier work environments.

There are however, some important Aspects of the Netflix Culture that would be maladapted to the healthcare system. Under 'Freedom and Responsibility', Netflix preaches rapid recovery over error prevention (the "fail fast" startup mantra) and under 'Highly Aligned/Loosely Coupled' the emphasis on "minimal cross functional meetings" and "occasional post-mortems on tactics to increase [strategic] alignment. These are obviously not appropriate for the hospital setting; taken literally, post-mortems tend to be quite important in healthcare as a mechanism for learning and future error prevention.

Personalized Movies, Personalized Medicine

Once the shared foundational values of Netflix and Healthcare are recognized and the culture

has been adjusted and adopted, there remains one fundamental tool that has been critical to Netflix's success: the algorithm. A 2014 article in *The Atlantic*⁶ revealed that in order to capture what people look for in movies, Netflix had created 76,897 unique "alt-genres" and trained taggers to describe films (think symptoms). Based on the symptoms you select, as well as stockpiles of data on where, when, how, and how much you watch, the algorithm provides you with a personalized diagnosis of your movie preferences^{6,7}.

It is easy to see the parallel to personalized medicine, but harder to swallow the implications. The National Human Genome Research Institute defines Personalized Medicine as an approach that includes "individual's genetic profile to guide decisions made in regard to the prevention, diagnosis, and treatment of disease"⁸. In the healthcare system, physicians have thus far played the role of the movie-tagger, weaving a clear plot-line around symptoms to suggest a diagnosis. However, algorithms including those in IBM's Watson and other machine learning projects have been making significant progress⁹, threatening doctors into unknown spaces where technical expertise may verge on obsolescence.

This encroachment is especially pertinent as the technologies for integrated, personalized medical system more rapidly develop¹⁰. Wearable technologies are among the fastest growing tech-trends in Silicon Valley, attracting millions of dollars in venture capital investments. Consumer devices such as the iWatch should partner with nano-drop blood test innovators such as Theranos¹¹ to sample blood at regular intervals without you noticing, or Empatica¹² to monitor electrodermal activity. Pulse-oximetry, blood pressure, temperature and other basic information could be collected with unprecedented consistency, providing algorithms with a more holistic picture of the patient's health than a five-minute appointment could ever achieve.

In the Patient's Best Interest

So if algorithms start doing the diagnosing, and robots are already performing delicate surgeries with more consistency than top surgeons, what will our hospitals look like? What will the physician do? The answer lies in what we seek when we go to a healthcare professional: care¹³. The medical profession need not fear irrelevance, as the physician's capacity for compassion and human intuition are unlikely to be replaced by cold robotic touch any time soon. As such, hospitals should embrace and adapt to a systemic change that is long-overdue. The 'Seven Aspects of Netflix Culture' will help healthcare institutions shift into the future, and the 'Nine Netflix Values' give reason to believe that this shift will be a technical rather than ideological one. The values embody compassion, honesty, and innovation, which will help physicians and hospitals shift into their more "care" based-roles. It is time for healthcare to restructure, simplify, and integrate as a system, and to justify the costs that are sure to come, we need only change the subject of Netflix's five word Expensing Policy; "Act in Netflix's the Patient's Best Interest".

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Social Disadvantage and Food Security in a Forcibly Displaced Population in Bogotá, Colombia

Research Article

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Abstract

Forcibly displaced status constitutes a significant and unfair social disadvantage in reaching a state of food security. Qualitative data among a forcibly displaced community in Bogotá, Colombia, revealed that participants experienced social marginalization, political barriers and economic hardships that hindered their access to food and were directly related to their displacement. The results of this study underscore the need to strengthen social integration efforts and expand mental health and counselling services.

Introduction

The city of Bogotá, Colombia, is facing a crisis of food security among its rising population of forcibly displaced persons¹. Internally displaced persons and international refugees are forced to endure indirect violence at their destination through social, political and economic structures imposed by their displacement². Studies have shown that internally displaced migrants have a lower quality of life than the urban poor³, indicating a social disadvantage associated with displacement that deserves further investigation.

The objectives of this study were to evaluate the perceived state of food security among displaced persons in Ciudad Bolívar, Bogotá, by exploring the specific structures imposed by their displacement that prevent them from accessing food, how participants adapt to their behavior when confronted by food scarcity, and the effects of food insecurity on health.

Methodology

Information was collected via semi-structured interviews, which explored perceived state of food security, perceived state of vulnerability, individual experience of displacement and a description

of eating patterns. A domiciliary visit was also carried out to gather information about nutritional contexts within the home and neighborhood.

Results

A total of 10 semi-structured interviews and 1 domiciliary visit were carried on a total of 12 forcibly displaced persons in Ciudad Bolívar, the poorest locality of the city of Bogotá⁴.

Socially, participants faced marginalization through loss of support from family members that previously protected them against food shortages. Politically, participants were restricted from accessing the aid they were entitled to through complicated bureaucracy. Economically, moving to the city represents a significant increase in cost of life, and a negative impact on ability to earn. Few forcibly displaced persons arrive in Bogotá with formal qualifications, literacy or the education necessary to find stable employment in the city, making it difficult to earn a sufficient income. From a behavioral perspective, participants coped with food shortages by changing their diet, withstanding hunger, buying less food and accepting charitable donations. Psychologically, participants described a sense of apathy and hopelessness. Physical health

effects of the displacement manifested themselves through changes in weight, gastrointestinal issues and states of malnutrition such as anemia.

Discussion

The results of the domiciliary visit showed that living conditions are below an acceptable standard. Food preparation facilities were unhygienic in that there was no place to safely store and refrigerate food, and there was evidence of food rot that presented a hazard to occupants of the household. Based on the description of their diet and the foods kept in the kitchen, there was an absolute lack of fresh produce and sufficient protein to warrant a nutritious diet for neither adult nor child. The structures imposed by poverty and displacement weaken the ability to exert freedom of choice in favor of the necessity to survive. Such violence is indirect in that it does not explicitly cause bodily harm, but affects mental and physical wellbeing through deprivation of essential resources, including nutrition. Violence is seen in the difference between what can be potentially achieved, and what is actually achieved, increasing the distance between the two or impeding an individual from accessing the former⁵. Such deprivation violates one's needs for survival and well-being, lowering quality of life to an unacceptable level⁶.

Conclusion

Perceived food security appears to be directly and negatively affected by structural factors imposed by forced displacement in Ciudad Bolívar. Participants experienced indirect violence that restricted their ability to reach a state of general wellbeing and development, and access sufficient and nutritious food through socially acceptable means. The main mechanisms of structural violence were segmentation and marginalization. Through segmentation, participants were given second

class citizenship and exclusion from protective social networks. Participants experienced marginalization as they were placed in a situation that limited their ability to protest their living conditions, mobilize political resources to improve their quality of life, and receive sufficient education to remove themselves from food insecurity.

Strong social support networks were important in helping participants feel secure. Therefore, it is important to keep family unified as much possible during the displacement process, and provide opportunities for expansion of social networks. Judging from the level of psychological distress expressed by the trauma of violence but also the stress of hunger and food security, mental health is a concern that should be addressed by expansion of mental health and counseling services targeted toward forcibly displaced populations.

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Rethinking Health Systems informal healthcare provision among Syrian refugees in Lebanon

Opinion Editorial

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While the ongoing conflict in Syria has had an enormous impact on the health needs of Syrian refugees, relatively little attention has been given to the effects the conflict has had on the health systems of refugee-hosting countries bordering Syria. Due to the scale of the refugee crisis, how these health systems function has dramatically altered in ways that are difficult to describe using current models. Indeed, this difficulty is often exacerbated by the interaction of outside organizations, as well as legal and socio-political factors that are generally not present in higher-income countries.

The present op-ed will attempt to highlight this disconnect by examining the effects of the current refugee crisis on Lebanon's health system. By evaluating the informal network of health provision among refugees, the present paper argues that this newly emerging sector does not easily subscribe to Western models of health systems. Traditional "pillars" (as outlined by the WHO's "Six Building Blocks" framework) such as governance and financing are not readily apparent, and furthermore, additional needs and services have developed.¹ There is therefore a requirement to contextually describe these systems in order to properly understand them.

As a country hosting an estimated 1.5 million refugees, representing just over 25% of the population, Lebanon has been severely affected by the refugee crisis.² Demand for healthcare within this refugee population is incredibly high; a report from John Hopkins³ found 67% of adult refugees needed healthcare in the last year, and a further 70% of households reported their child needing

healthcare over the same period. This has placed an enormous burden on the Lebanese healthcare system, with an overall increased demand of 40% on the hospital system.⁴

This increased pressure has created a health system that can best be characterized as fragmented and difficult to navigate for refugees.⁵ Stewardship of health services for refugees falls under either the UNHCR or the private sector, and are delivered across a range of actors, including NGOs, public services, or the private sector.⁵ Syrian refugees receive access to healthcare centers for a fee of US \$2 to US \$3 per consultation, and must pay a further 25% of hospital care costs, including medication.⁵

Given these financial and logistical barriers, many Syrian refugees are resorting to alternative methods for accessing healthcare. Research from the more established Palestinian refugee camps, as well as refugee populations in similar countries, points to a large informal healthcare sector among the Syrian refugee population.⁶ However, due to Lebanese labour laws prohibiting the rights of Syrian refugees to work in the country describing and documenting this informal network is difficult, largely due to the ethical concerns of conducting research in populations working illegally.⁷

Despite this, there are some reports of Syrian health professionals working outside the established health system. For example, the Multi Aid Programs (MAPS) is a grass-roots organization founded by Syrian refugees through the support of a virtual Lebanese board. The organization operates a clinic in the Anjar district, and employs 13 Syrian doctors who offer support to 150 patients

at a rate of US \$2 for Syrian refugees, and US \$6 for Lebanese.⁸ Additionally, while authorities have stopped most Syrian doctors from opening clinics or working at hospitals, they have not stopped those who volunteer their services at clinics in border areas; states Abou Faour (the previous Minister of Health), “we cannot stop a physician from helping his compatriots”.⁹

It is very likely that health professionals from Syria are adapting strategies established by Palestinian refugees, who are subject to similar labour laws, and have been residing in Lebanon since the 1950s.¹⁰ Hanafi and Tiltne⁵ have documented a number of clever ways in which Palestinian health professionals have overcome these barriers. Palestinian medical doctors who are ineligible to write prescriptions for patients overcome legal restrictions by filling out prescription forms that have been signed and stamped by a Lebanese doctor. Some private insurance companies accept prescriptions from Palestinian doctors, provided their address is outside of a Palestinian refugee camp; one medical doctor residing in a refugee camp stated that he simply excludes the camp area from his address when signing prescriptions. Additional strategies include a Palestinian nurse who organized the Palestinian staff together to demand work permits, threatening that the hospital would “suffer the consequences” otherwise.¹⁰ Other tactics include establishing a company in the name of a Lebanese national while Palestinian professionals do most of the work, or denying ones’ Palestinian roots.

Informal networks among refugees are also used to overcome informational barriers to healthcare access. A study from Parkinson and Behrouzan¹¹ describes a situation where a Syrian refugee in labour is guided through the complex and fragmented Lebanese health system by a Palestinian refugee. The study also comments on how refugees rely on one another to find the cheapest pharmacy, best services, as well as other concerns, thereby overcoming the complex nature of the Lebanese health system.

These illustrations exemplify the intersectionality of two concepts - that of a substitutive informal institution, and therapeutic geographies. The former refers to a categorization of informal institutions by Helmke and Levitsky¹² based on the outcomes of the informal institution, and the effectiveness of corresponding formal institutions. A substitutive informal institution is one that arises because of an ineffective formal institution; in the case of Lebanon, the informal health sector exists because the formal health sector was not able to adequately address the health needs of refugees within the country. This inability arose from the second concept - that of therapeutic geographies, which refers to the reorganization of healthcare systems within and across borders under conditions of war.¹³ Specifically, this refers to how the Syrian civil war has impacted the Lebanese healthcare system to the extent that parallel, informal institutions are arising as a substitution.

With protracted conflicts becoming more and more common, there is a need to better understand how health systems in low and middle-income countries adapt to these crises.¹⁴ Western models of health systems are rapidly becoming obsolete when attempting to describe the changing concept of health within these countries. In regard to informal health provision, governance tends to be less prevalent, the workforce less regulated, and in general, the landscape is more complex and not easily categorized. As this article attempted to illustrate, more experiential research and a reconceptualization of health systems are required if we are to contextualize and address these situations properly.

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Fighting or Deepening Exclusions from Health Services? social health protection program for the poor in India

Opinion Editorial

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India and Universal Health Coverage

The 2012 United Nations General Assembly Resolution on Global Health and Foreign Policy explicitly called for increasing efforts to provide high quality and affordable health services for all, acknowledging the role of good health in fostering international development.¹ This is all the more relevant given the reality of many developing countries where economic and social inequalities create severe health-related imbalances as a consequence.² Achieving universal health coverage (UHC), however, is highly dependent on national undertakings in the field of health systems strengthening, such as investing in infrastructure and workforce, establishing efficient health information systems, developing sustainable health financing mechanisms, ensuring access to medicines and health technologies, and assuring leadership and accountability arrangements.³ India is no exception. Efforts are undertaken towards the achievement of UHC, however, the challenges of the national health system remain

significant. In 2010, total government spending on health represented as little as almost 5%, which, what is more, accounted for only one-third of the expenditures on health. Out-of-pocket (OOP) payments for health services continue to constitute a barrier for health care utilization, amounting to 60% of spending for health.⁴ In addition, as much as 86% of people residing in rural areas and 82% of those living in urban areas remained not covered by any health insurance, being reliant on their own savings.⁵

Rashtriya Swasthya Bima Yojana Scheme

Faced with the described situation, in 2008, the Government of India launched the Rashtriya Swasthya Bima Yojana (RSBY) health insurance scheme with the objectives of protecting below the poverty line (BPL) households from financial hardships associated with OOP spending and hospital treatment as well as increasing access to hospital services within the poorest population.⁶ Next year's tenth anniversary of the scheme

implementation is approaching. This begs the question as to its effectiveness and delivering the intended results. The latest evidence suggests some mixed results. For instance, nation-wide, in terms of the utilization of hospital care services, a mere 12%-13% of BPL households were included in the health insurance system due to RSBY as well as other insurance schemes (including Employees' State Insurance and Central Government Health Scheme).⁵ Local and small-scale assessments frequently report contradictory effects.⁷ The impact on reducing the level of OOP payments also differs in the literature: from no visible results to the increased burden associated with the continuous process of paying for health services from household resources.⁸⁻¹⁰

RSBY and Exclusionary Processes:

However, when evaluating the scheme effectiveness, another dimension has to be also taken into account besides its official objectives. According to the intention of the initiators, RSBY is a social health protection program deliberately proposed to fight the issue of marginalization of the poor when it comes to the access to health services and hospital treatment. The scheme assessment in the light of bringing a social change and facilitating social cohesion at individual and community level is equally critical. For example, existing evaluations of the scheme point to the fact that many eligible households cannot attend enrolment camps as this involves losing their daily income.¹¹⁻¹³ The high registration fee is often an obstacle as well.¹⁴ In terms of communicating enrolment procedures and provisions, the required information flow between communities and local government authorities is frequently distorted. This is mostly associated with poor political representation and lack of political connections.^{11,13,15,17} The latter, moreover, is linked to the experienced misuse of power by local politicians, manifesting itself through corruption practices, among others.^{11,15-16} Another factor for constrained scheme awareness and enrolment is literacy of eligible households,

often limited as concerning the poor without access to education.^{11,15,18} Social and cultural conditions within which the scheme is being implemented, also significantly contribute to its utilization. The status in the social hierarchy, the caste system, is decisive for the participation of individuals in community activities and existing social networks, thereby perpetuating present social exclusion of scheduled castes, scheduled tribes, and other backward classes.^{11,13,19}

Towards Greater Social Inclusion in RSBY Management:

The way in which RSBY is managed allows for concluding that it does not contribute to delivering the desired social value associated with its implementation, which is fighting social exclusion and inequalities in access to health services. More inclusive practices vital for the success of the scheme need to be implemented and informed on the basis of research that specifically targets social conditions around which the scheme introduction is being approached. As early as the stage of design, efforts should be made to understand material, social, and health situation of the target population, BPL families, in order to increase the scheme enrolment in the first place. The above examples of exclusionary processes could be used to reverse the situation and suggest more integrating methods of operations. For instance, taking into consideration a difficult financial position of many eligible individuals that, moreover, is also associated with economic migration, more could be done to reach communities in their place of residence and work, with a more efficient handling of enrolment activities and sticking to enrolment timetables, to start with. What is more, greater attention should be paid in order to effectively communicate the scheme assumptions and provisions at a community level. As already emphasized, the target families are frequently not literate enough to benefit from the provided information materials, such as posters, brochures, or pamphlets. In addition, the scheme delivery

has to be facilitated on the basis of existing political interplay between community members and their representatives, acknowledging the specific dynamics. Finally, recognizing factors that are responsible for mobilization of communities, associated with the pursued values and accompanying conduct, should provide a benchmark for revealing mechanisms through which communities and individual members decide to enrol in the scheme. The provided examples represent just a tiny drop in the sea of problems and considerations that should be respected when implementing and further managing the scheme. However, the available qualitative evidence as to the scheme introduction already enables the development of a redefined RSBY implementation strategy.

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Global Health from the Margins contemplations from students engaging in interdisciplinary research

Opinion Editorial

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Climate change, poverty, environmental degradation, and deepening inequality – the future before us offers no end of wicked problems and human health is deeply implicated in them all. This is not the first time we have faced broad-scale public health crises. Hanlon et al. document four previous transitions going back to the Industrial Revolution, which required transformative public health shifts. In each shift was an associated transformation in society's understanding of itself and the way health was conceived within it.¹

This time, however, the planetary scale of the challenges before us dwarfs previous crises. The Lancet's Commissions on Health and Climate Change², Planetary Health^{3,4} and Global Governance for Health⁵, among others, reveal the broad scope of the research already underway to better comprehend and address the breadth of the challenge. The United Nations' Sustainable Development Goals (SDGs) offer an approach to the needed global transition, outlining the work that must be done to achieve a future in which the planet is protected and no one is left behind.⁶ As a country deeply complicit in perpetuating the social and environmental injustices that shaped these wicked problems,⁷ it is our responsibility as Canadians to take action to realize this transition.⁸ We as young Canadian global health researchers are being called to assist in solving these problems we helped create. To achieve these sustainability goals Horton et al.⁴

To achieve these sustainability goals Horton et al.⁴ and Kjellstrom and McMichael⁹ urge us to transform our current health practices if we are to respond to the threats before us. Hanlon

et al.¹ finds that a, "fifth wave of public health development is now needed; one which will need to differ radically from its forerunners". In their public to planetary health manifesto, Horton et al.⁴ urge us to incorporate and transcend the lessons from our past practice, and embrace, "a new principle of planetism and wellbeing for every person on this Earth—a principle that asserts that we must conserve, sustain, and make resilient the planetary and human systems on which health depends by giving priority to the wellbeing of all".⁴

Yet what action are we, young global health researchers and practitioners, prepared and able to take to achieve this great and needed public health transition? While called upon to respond to the challenges before us, global health remains a mutable entity often subject to redefinition. In 2009, Koplan et al. proposed a frequently cited common definition; "global health is an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide".⁸ Eight years later we find that definition to be too narrow to encapsulate, let alone respond to, the challenges before us. Not only is the ecological dimension absent, the social, political, economic and cultural context in which health challenges are experienced may not be recognized, let alone addressed.

If we are to meet these challenges and address the threats before us we will need to develop new ways of thinking, being and doing. Hanlon et al.¹⁰ urges us to embrace an integrative and ecological framework. Where and how do we begin?

We propose the mainstreaming and prioritization of complexity and systems concepts

into global health research, centered on equity (as already articulated in CCGHR's Principles for Global Health Research).¹² We are not the first to introduce this, in fact Hanlon et al.¹ discuss these as emergent qualities of the fifth wave of global health. The adoption of this within broader health communities of research and practice has gained traction.¹³ Though a base of evidence in support is established, system centric approaches in global health are the exception, not the norm.

Despite holistic system centric research's contribution to coordinated action, researchers and studies that do adopt this fall at the disciplinary margins of global health research. This does not necessarily happen due to a lack of understanding of complex systems approaches, but rather due to a gap between knowledge and application, as articulated by Salway and Green.¹⁴ We add that a further challenge is persistent disciplinarity, negating opportunities for systems approaches. Compounding this is a standard of evidence (RCTs, Cochrane reviews etc.) that is not well suited to systems approaches. It is often difficult to obtain the necessary training and education on this at early career stages, and faculty able and willing to supervise this research. This, coupled with an often absent critical perspective and a failure to engage with structural forces shaping global health, including persistent underdevelopment and poverty, inequality, globalization and climate change, may result in a lack of engagement with the complexities and interconnectedness of global health issues.

Though working at the margins of global health is logistically difficult across the gamut of securing funding (particularly given Canada's current tri-council funding system), publishing and collaborating, it is our duty to do so as we will not progress global health otherwise – neither as scholars, nor in practice. We call upon our colleagues and the global health research and practice community to prioritize equity centered systems approaches in our work. To do this it is necessary to seek our training and education on systems

and complexity concepts, and transdisciplinary methodologies. We support Salway and Green's assertion that critical, equity centered research ought to be achieved through the integration of social and political theory in systems approaches.¹⁴ The time, resources and support necessary for this are immense, yet ethically we cannot be deterred from this. With the world's greatest challenges requiring true integration and systems wide intervention, our research must be too. We cannot forget that global health research is part of the broader global health system and must support this shift. We call upon the community of global health researchers, particularly early career graduate students to adopt and advocate for this shift in paradigm and practice.

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Inequities Behind Bars

Opinion Editorial

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Chances are you don't recognize the name Steven Simons.

Incarcerated in Ontario's Warkworth Institution from 1998 to 2010, Simons was infected with hepatitis C when a fellow inmate used his needle to inject. Hepatitis C negatively impacts a person's quality of life, and chronic infection can cause serious health complications such as cirrhosis and liver cancer.¹ Now, Simons is leading a lawsuit against the Government of Canada with the support of the Canadian HIV/AIDS Legal Network and a number of other community organizations. The lawsuit aims to get safe injecting equipment into Canada's prisons, arguing that the refusal of Correctional Service Canada to provide access to clean injecting equipment further disadvantages persons in custody who suffer from addiction, and violates basic human rights.²

The United Nations' Basic Principles for the Treatment of Prisoners states that "prisoners shall have access to the health services available in the country without discrimination on the grounds of their legal situation".³ Why are the primary prevention tools that are available to the public, such as needle and syringe programs, not available to persons in custody? Why don't we offer universal screening and treatment to diagnose this infection in all correctional facilities? These questions have ignited quite the debate in Canada – a debate that highlights the apathetic and discriminatory attitudes that our communities and political leaders can hold towards people in custody.⁴⁻⁷

In engaging with this debate, it's important to understand who is inside Canada's prisons. There are more than 250,000 admissions to correctional facilities each year. A quarter of prison admissions are for Indigenous persons, many of whom suffered in residential schools. The majority of female offenders have been physically abused. Most persons report using drugs in the recent past before they were admitted to custody, and many continue to use drugs in prison.^{8,9} Canada's prison population is undeniably disadvantaged and marginalized, and has great need for supportive services. The system is failing them by neglecting to effectively confront the health risks that exist within prison walls.

The reality is that prison could serve as a great opportunity for health intervention. These institutions provide a space in which society's most marginalized populations can be supported. High-risk behaviours, such as injection drug use and tattooing, can be recognized and the risks can be mitigated. A remarkable example of this came in 2005, when Correctional Service Canada (CSC) rolled out a project to make tattooing safer in prisons. Inmate tattoo artists were given access to safe equipment and were trained on infection control. Despite positive health outcomes, the project was shut down by federal Public Safety Minister Stockwell Day, who claimed that the project was a waste of tax dollars.¹⁰

CSC has voiced concerns that needles from prison needle and syringe programs (PNSPs) could

be used as weapons, and the organization stands behind their “zero tolerance” policy on drug use.¹¹ Evidence from over 60 prisons worldwide reveals, however, that while PNSPs reduce needle sharing, decrease drug-related health problems and deaths, and increase inmate referrals to drug treatment programs, they do not increase violence, drug use, or needle-stick injuries.¹² Despite widespread calls for CSC to recognize drug use and needle sharing within prisons, it hasn’t happened.

While certain harm reduction measures, such as condoms and bleach, can be found in Canadian prisons, we have yet to introduce the community standards for primary prevention into these institutions, which include PNSPs. This certainly isn’t for lack of evidence. This is an issue of discrimination – human rights are being violated.

I’ve spent the past few months living in Sydney, Australia, researching hepatitis C at the Centre for Social Research in Health at the University of New South Wales. Last year, the Australian government invested in making the new curative treatment for hepatitis C universally accessible – a major achievement on the road to elimination. The Centre is currently involved in a study evaluating the impact of hepatitis C treatment scale-up within Australian prisons, in an effort to reduce the spread of infection among this particularly vulnerable population. It’s been remarkable to witness and engage with research that is determined to address the health needs of the incarcerated population, and I look forward to continuing this work in Canada. However, while the government has made a solid investment in eliminating hepatitis C, the battle for PNSPs is ongoing in Australia as well. Treatment is necessary, but our governments must prioritize prevention.

Steven Simons is leading the effort to end hepatitis C transmission inside Canada’s prisons, and he’s not alone. Behind him are persons in custody, medical professionals, advocacy and service organizations, and communities across the country. Transmission of this infection is preventable, and the introduction of harm reducing measures into prisons is in the interest of public health and human rights.

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Losing the “Human” in Humanitarian: the unethical omission of palliative care due to current humanitarian outcome-based thinking founded on utilitarian grounds

Opinion Editorial

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Pulling bodies out of rubble following a natural disaster. People in personal protective equipment treating those with highly infectious diseases. Too little beds and too many patients in an unpredictable, life threatening setting that could erupt in conflict at any time. These are the images that often manifest when thinking of humanitarian aid health care professionals risking their lives to save others. In these images and in its best expression, humanitarian action, the compassionate response to extreme forms of suffering from organized violence and natural disaster, truly embodies its semantic lineage; what it means to be human.¹ Humanitarian action is built on respecting, protecting and saving lives regardless of geographic location, race, status, or context ultimately affirming the intrinsic value of humanity and systematic expression of empathy and altruism in the contemporary process of globalization.¹ From this deep-seated value for humanity sprouts the three objectives of humanitarian action; to save lives, alleviate suffering, and preserve human dignity.² But what happens when lives cannot be saved? What happens when the gravity of a crisis exceeds all resources available or when curative care isn't even an option to begin with? One would imagine that the remaining two imperatives, to alleviating suffering and preserve human dignity, would then be the focus. For most of us, however, what this exactly looks like in practice is enigmatic. The bodies have been heroically pulled out of the rubble yet the gut wrenching reality remains that there is nothing left to offer the dying. Now what?

Palliative care, or non-curative support is by

definition, the branch of medicine that seeks to protect human dignity and alleviate suffering at the end of life. It is surprising however, considering suffering is inevitable and exacerbated in a humanitarian crisis setting more than any other, that palliative care interventions have been historically left out of the humanitarian ethics narrative. Furthermore, if human dignity, the quality within us worthy of honour and respect, is at a vulnerable peak in the wake of violence, disaster, disease, and at the end of life, it begs the question as to why reference to pain relief and palliation is virtually non-existent in most publically available guidelines published by leading medical humanitarian organizations.^{3,4,5} Granted, when lives can be saved it is clearly the priority to allocate resources accordingly. However, it is this ethical resource distribution dialogue that claims both are unable to coexist in a humanitarian setting has created a false dichotomy between curative and palliative approaches drawing focus away from integrative program planning.³ This dichotomy is evidently false when considering the ethical implications of failing to include palliation, and the feasibility of providing both palliative and curative provisions simultaneously.

If effective humanitarian action is to save lives, alleviate suffering, and preserve human dignity, continuing to exclude palliation in the humanitarian mandate would be to abandon the latter two objectives. Beyond these guiding humanitarian objectives, neglecting palliation is also to fail as health care professionals to uphold the bioethical principles of beneficence and non-maleficence. To provide adequate pain relief to

those who are suffering should be a necessity, not a luxury during an overwhelming health catastrophe and a bare minimum of beneficent care when opioid analgesics are inexpensive and feasible to provide to everyone.^{5,6} When discussing how to meet the Ebola crisis responsibly, physician and clinical ethicist Dr. Philip Rosoff argues that to use a palliative care approach for those who cannot be cured is mandated by an ethic of compassionate concern and should be a priority even in exceptional circumstances such as a wide spread epidemic.⁵ Without palliative provisions, training, and program development, health care professionals working in a humanitarian health catastrophe are forced to swallow this compassion and turn their backs to the suffering of the ill and dying. If there is to be an empathetic humanitarian response to a crisis and to allow health care providers to adhere to the practice of ethical medicine, palliation is paramount. Médecins Sans Frontières physician James Orbinsky articulates on the matter, "... where demands for care dramatically outweigh resources, however, dying patients may be left unattended, or attended by healthcare providers who do not know what to do for them, or worse, who treat patients as if they were already dead".⁷ To treat a person as if they are already dead is to completely neglect the principles of beneficence, non-maleficence, respect for autonomy among all medical codes of conduct and humanitarian morals. This ethical and deeply unsettling dilemma is an enduring reality for humanitarian health care professionals in absence of palliative armamentarium.

Although literature supporting palliative care as an international human right and as an obligation to an effective, compassionate humanitarian healthcare response is growing, in order to implement systematic change the community must draw attention to why this arcane gap is there to begin with.^{8,9} One explanation may be that humanitarian aid organizations view beneficence through a utilitarian lens. For a utilitarian, the outcome of one's action is of the greatest moral importance

where the greatest good must be achieved for the greatest number of people.¹⁰ For humanitarians, that greatest good is to save lives. When dealing with a humanitarian crisis, there is no dispute that to save and help the majority makes sense in net utility calculations however, by solely focusing on population needs, humanitarian aid organizations may overlook the individual, intimate, human experience of death and the beneficence duty to beneficence in their program planning calculations.¹ This is where we sacrifice the true meaning of an empathetic humanitarian response for simply a mechanical one.

One reason humanitarian organizations may fail to define success beyond lives saved may be because there are no clear measurable outcomes for how much pain was alleviated through palliative care or how many people experienced a dignified death. Smith and Aloudat's are keen to point out in the article Palliative care in Humanitarian medicine that "unfortunately, the palliative-curative dichotomy is amplified by sector-wide approaches that privilege the pursuit of quantifiable results".³ Why advocate for a palliation renovation, in which the primary mandate is to acknowledge and benefit the dying, when the number of people saved is the measure of success? The way in which crude mortality rates are used to determine success or failure in a crisis response shows that the preservation of life takes priority over other outcome measures like relief of suffering and the respect for persons.⁴ This utilitarian way of thinking and operating hinders the humanitarians' ability to focus on the needs of an individual. The inability to provide adequate palliation services is therefore not due to resource limitation or the allocation of services towards life-saving care, rather on the lack of deep ethical consideration beyond utilitarian, outcome-based thought.

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Democracy and Health

Research Article

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Background and Definitions

“Medicine is a social science, and politics is nothing but medicine at a larger scale,” said physician Rudolph Virchow in 1848.¹ A pioneer in the fields of public health and social medicine, Virchow believed that ill health stemmed from inequities within populations and society, and therefore required a political solution. Thus began the exploration of the role of politics in medicine and medicine in politics, from focused health policies to larger political institutions. Despite democracy being a fiercely-held value in many countries, especially within the Global North, there is no robust evidence that it causes improved health of citizens.^{2,3}

Theoretical arguments for ways in which democracy can both support and impede health are numerous.^{4,5,6,7,8} However identifying robust correlations between democracy and health are unquestionably difficult. This is due to many confounding factors,⁴ and the inability to create a controlled environment in which to elucidate a true correlation between democracy and health.

Theory of Democracy and Health

On a theoretical level, there are numerous ways in which democracy can support the health of the public, but there are equally as many ways in which it might impede health. These particular factors are often opposite in autocracies, as thus it is useful to juxtapose the two.

Measurement of Democracy and Health

It is important to recognize that in reality, interactions between democracy and health do not perfectly reflect theoretical models such as the one above; thus, we must try to measure the association using data from countries around the world. Many potential confounders to the relationship between democracy and health exist within a country, not limited to: education, demography, income per capita, size of the public sector, quality of health data available, inequality within the country, length of time a country has been democratic, and recent conflicts and disasters, etc.⁹ No empirical studies to date have been able to employ a robust methodology to dissect the effect of democracy from the various confounders.

Ways Democracy can Support Health ^{4,5}	Ways Autocracy can Impede Health ^{4,5}
<p>Low socio-economic groups can advocate for public health solutions: Proportionally, the majority of people within a society are of low to middle socio-economic status (SES), and thus both need public supports for health, and make up the majority of the vote.</p>	<p>High socio-economic groups are less interested in public health solutions: Those with power are most often those with the resources to access private care and thus may not back public supports for health.</p>
<p>More accountability structures: Ideally, Democracies are accountable to all the people whom they represent, and thus aim to please their electorate to maintain public support.</p>	<p>Fewer accountability structures: Autocracies are only accountable to themselves (occasionally also the military), and thus may have less incentive to prioritize the public's health needs.</p>
<p>Stronger mechanism for leader selection: Elections represent a better chance of selecting competent and honest leaders to implement health policy.</p>	<p>More corruptible leader selection: Leaders may be selected on factors other than skill and merit, and are more difficult to remove if found to be representing the public poorly.</p>
<p>Citizens can be agents of change: Individuals have enhanced opportunities to act as active agents, exercise political will and advocate for their health interests.</p>	<p>Citizens may feel powerless: Given that they have little power over authority, they may feel they have little individual freedom. This can also contribute to emotional and mental health challenges.</p>

Ways Democracy can Impede Health ^{4,5}	Ways Autocracy can Support Health ^{4,5}
<p>Oppression by the majority: Voices of economic, cultural, social, religious or other minority groups within a country may be neglected, increasing the inequalities in wealth and health.</p>	<p>Leaders can target efforts for specific minorities effectively: Action to address the needs of minority groups can be taken regardless of underrepresentation or opposing opinions of the public majority.</p>
<p>Mis/uninformed voters make poor decisions: Misinterpretation of, or disregard for, information leads voters to make choices that do not represent their best interests. Politicians can easily capitalize on this irrationality.</p>	<p>Decisions are made on their behalf: Governments may be better resourced than individual citizens to make informed decisions in what they perceive to be public best interest. There is no need to wait for public approval or support.</p>
<p>Public may not prioritize health: As few citizens are experts in individual or public health, or have other priorities, they may support policies that have negative impacts on health.</p>	<p>Governments can prioritize health: In consultation with health experts, leaders can take action on health issues and implement solutions that would not be chosen by public voters.</p>
<p>High turnover of governments leads to instability in political priorities: Because electoral cycles occur every few years, there can be frequent changes in health policies. Effective changes to health systems cannot happen in short spans.</p>	<p>Longer-term leaders can more effectively support change: Many autocratic reigns last longer and provide more political stability, and thus would be able to better support effort of health policy reform and changes in healthcare infrastructure.</p>

As one example, in 2006, Besley & Kudamatsu from the London School of Economics used a cross section of countries between the 1960s-2000s.⁴ They identified a significant correlation of 3.55 years longer life expectancy at birth in countries that were democratic as compared to non-democratic. The significant difference decreased once they controlled for income per capita (1.75 years), education levels (1.19 years), and years of democracy since 1956 (-0.24 years, not significant).⁴

Risks of Assumption

The impetus to understand the fundamental relationship between democracy and health includes the risks of assumptions. On one hand, the assumption that democracy improves health may contribute to a perception within non-democratic communities that health promotion initiatives are not worthwhile without democratizing political shifts. It may also lead to underdevelopment of robust public health infrastructure in communities transitioning towards democracy, with the

assumption that some health improvement will be organic.

On the other hand, the assumption that there is no relationship between democracy and health weakens the arguments of those social groups and movements who push for democratization within their countries. Equally, it weakens the voice of healthcare providers to advocate for political change.

Conclusion

This paper summarizes key points within the complex relationship between democracy and health. Theoretical arguments show ways in which democracy can both support and impede health, although their generalizability to real-life situations is limited. Research has yet to provide a robust approach to measure the relationship between democracy and health, but doing so is crucial to prevent the deleterious consequences of assumptions.

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How Globalization Challenges And Aids The Implementation of The Canada Health Act In Canada's Northern Territories

Opinion Editorial

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Introduction

North of the 60th parallel in Canada's territories, the implementation of the *Canada Health Act* (CHA) is a challenge. Health care provision is an obstacle since residents live in small, isolated communities with a unique history and culture that differs from the national majority. On top of the geographical remoteness, a globalized world has caused many problems, including historical injustices, volatile and underdeveloped economies, and climate change. But external influences also provide solutions to improve the health of northern citizens, such as increased awareness of indigenous

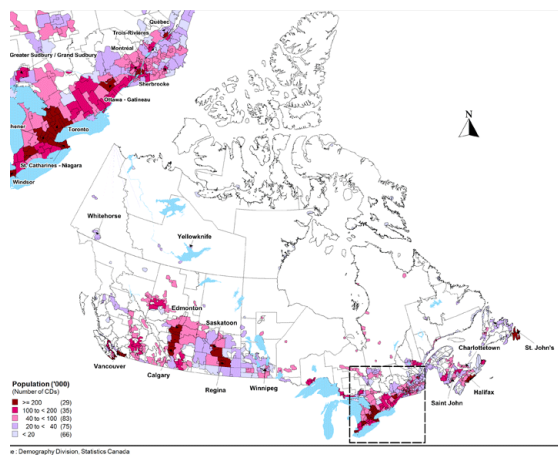
rights, beneficial inter-governmental partnerships, and technological innovation. While globalization exacerbates the challenges associated with health care provision in northern Canada, it also provides solutions to said problems, leading to improved implementation of the CHA in remote northern communities.

The CHA is a federal law that governs the provision of funds and guiding principles on the level of insured "medically necessary" health care that Canadians can expect to receive, regardless of where they reside. At the core are five principles: public administration, comprehensiveness,

universality, portability, and accessibility.¹ The country's decentralized health care system sees provinces and territories coordinating health care services locally, with transfer payments from the federal government. Canadian health care policy intends to "protect, promote and restore the physical and mental well-being of residents of Canada, facilitating reasonable access to health services without financial or other barriers."² This objective is challenged by globalization, as well as the fifth principle of the act, "accessibility."

Densely populated Canadian cities lie close to the 49th parallel, with 90 percent of citizens living within 160 kilometres of the United States border (Figure 1).^{2,3} Out of 36.2 million Canadians, only 119,000 live in the three territories (Yukon, Northwest Territories, Nunavut) combined (Figure 2).^{4,5}

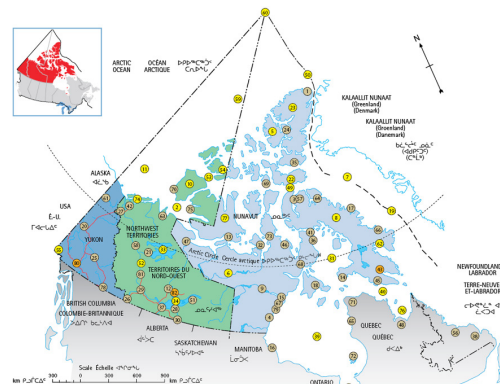
Figure 1: Population distribution and density in Canada, 2012.²



While definitions vary based on the context of the term *globalization*, it can be defined as the processes that contribute to "the free flow of information, goods, capital and people across political and economic boundaries."⁶ Often rooted in economics, scholars link social, cultural and environmental influences back to the economy.⁷ Information, people and capital have always

migrated, however it is noted that we are now in "an era of globalization,"⁸ with the intensity and scale developing rapidly. It is also becoming increasingly common to discuss globalization in the context of public health.

Figure 2: Communities located in Canada's territories, northern Québec and Labrador.⁵



**Globalization
Creating Challenges**

One challenge related to globalization is the historical social/cultural influence of European's arrival in Canada, which has current ramifications for the health of First Nations, Inuit and Métis people. The creation of Aboriginal reserves, combined with the systematic removal of children from their homes to be placed in residential schools, had the intention of "[eliminating] parental involvement in the intellectual, cultural, and spiritual development of Aboriginal children."⁹ Through these acts of colonization, northern communities were systematically dismantled and politically ignored, with little to no representation in federal systems. Today, Aboriginal citizens face challenges such as limited access to employment and labour markets, increased cost of goods, and limited access to housing and clean drinking water. Studies have shown that Aboriginal people have increased negative health outcomes associated with these social determinants,¹⁰ confirming the challenge of CHA implementation.

Global economic processes and markets, where resource values fluctuate according to their supply and demand,¹¹ have an influence even in remote Canadian communities. Many northern towns are dependent on natural resources or seasonal tourism as their main economic driver.¹² These economies are particularly volatile, as they often follow a boom-and-bust cycle as a resource devalues or becomes economically unsustainable to extract. Other northern economies are underdeveloped, as there is no major economic activity and limited jobs in many communities.¹² Global economic processes and trade have profound effects on the social determinants of health. The main inhibitor to the implementation of the CHA is that economic instability causes inconsistencies in the delivery of health care. These create barriers to health care, as budgets fluctuate with the economic changes.

Climate change is necessarily a global issue, and the geography of the Earth's poles has caused rapid warming of the Arctic. These dramatic changes have direct and indirect effects on health, and since a large portion of northern Canadians lives subsistence or semi-subsistence lifestyles,¹⁰ citizens are more negatively affected by the impacts of climate change. Resources may not be available due to already limited health care budgets, causing a lack of services like culturally relevant mental health support. It is also a challenge to provide reasonable access to care regarding the safety of people out on the land, with increased funds needed for search and rescue services.¹³ Climate change and health is difficult to address directly, as it touches so many aspects of daily life, and often affects communities very differently.

Offering Solutions

The complexity of globalization ensures that it exerts both a negative and positive influence on health care provision around the world. Numerous solutions have been found to in the north, such as the sharing of innovative technologies, inter-governmental partnerships, and the advocacy for indigenous rights due to globalization.

The United Nations (UN) Declaration on the Rights of Indigenous Peoples, signed in 2007, improved awareness of indigenous rights around the world.¹⁴ In Canada, this helped inspire understanding the historical injustices concerning First Nations, Inuit and Métis citizens. The 2015 Truth and Reconciliation Commission (TRC) Final Report was an important step in understanding the consequences of the residential school system.⁹ Armed with an understanding of the effects this has on aboriginal health, the government is better equipped to work with communities to provide culturally sensitive services. Targeting social determinants of health leads to services that are designed for northern populations and improves delivery of "appropriate care," a primary objective of the CHA.

Canada is a member of the Arctic Council, an inter-governmental, supranational institution created to "promote cooperation, coordination and interaction among Arctic States ... indigenous communities on common Arctic issues".¹⁵ Working with the other countries, Canada can evaluate its' northern health care system compared to very similar contexts.¹⁶ Their work includes the One Health Report, describing connections between environmental and human health in the Arctic, and reviews case studies on mental health in indigenous communities.¹⁵ The sharing of information and collaborative international research is an impressive global process that allows Canadian policy makers to utilize best practices from neighbouring countries to implement the CHA mandate.

Innovative technological advances are global solutions that have been ground breaking in improving access to northern health care. Overcoming the barriers of geography and transportation, as well as improved tele-health options, are all invaluable. Most communities have limited to no access to primary care providers or specialists, so distance consultations completely alter the services provided, with the ability to "video conference between provider and a patient

in a remote location without the referring provider being present".¹⁷ Technology directly improves accessibility to health care, a pillar of the CHA.

Conclusions

While global processes create challenges to the execution of the CHA, the solutions arising from an increasingly connected world also benefit those in the north. Overall, these influences lead to improved implementation of the CHA in remote northern Canadian communities, and is a discussion that has implications for the wider global health community.

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Global Collaboration: the next paradigm of global improvement

Opinion Editorial

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Introduction

The United Nations (UN) has debated the relationship between science, technology, and development for over half a century.¹ While at the same time, the international development community has worked to transfer technology from Western high income countries to non-Western low and middle income countries (LMICs) in an effort to help leapfrog these societies past the early stages of development and land directly on the latest of development theory.^{2,3} Science and technology studies (STS) is a field of study dedicated to unpacking this process, based on principles grounded in philosophy and sociology. The following will demonstrate STS in action, using the case-studies of new technology for medical care that has risen from a new scientific model in allopathic medicine, and the associated technology used for treatment of chronic illnesses like chronic kidney disease (CKD). To take it a step further however, a perceptual shift based on integral theory will be suggested and opened as a topic of further investigation and discussion for the reader at the end of this article.

The Question

Dr. Siddhartha Mukherjee discusses his innovative scientific model for allopathic medical care in his book titled, The Laws of Medicine: field notes from an uncertain science.⁴ One of the resulting postulations was, could your medicine be an organ created outside your body? This question, as it turns out, had already begun being investigated at the Wake Forest Institute, led by Dr. Anthony Atala, using the technology of 3D printing.⁵ Using the science proposed by Dr. Mukherjee and the technology being investigated by Dr. Atala as a case study,^{4,5} and STS to unpack

it in the context of international development, the question is: could the new scientific model and technologic product be successfully mobilized, and function as intended, in a hypothetical low resource context with social values and a political system that is different from where it originated?

The Discussion

Actor network theory (ANT) posits that nothing in the social and natural world exists outside of constantly shifting networks of relationships.⁶ Moreover, ANT describes the need for qualitative data to explain social activity, since empirical data alone can only describe social activity. The aforementioned becomes evident even when assessing how to make the science and technology behind 3D printing kidneys outside the body to treat end-stage CKD in a hypothetical low resource context possible. From a strictly empirical standpoint, an extensive amount of material and human capital would be required to properly equip and staff both, the medical facilities, and the medicoacademic institutions, required to run such an operation. By definition,² as a low resource context, the hypothetical location would lack access to the aforementioned necessary capital, and would not have the capacity to create that kind of wealth – at least not in the short-term. The latter most point regarding the length of time being considered to accomplish the goal being the key factor across all major empirical considerations that will be discussed here. Indeed, time scale was similarly important in how high income countries developed their wealth of resources and infrastructure to transform the science of the combustion engine into the technology of cars that are used as commonly as they are today. After several decades of development, today,

the following can be observed in high income countries: a system of paved roads, street signs and licensing regulations, auto insurance schemes, fuel networks, and trained staff for each of the aforementioned system nodes. The same is possible of any society, irrespective of the amount of resources they have at a given point in time; but if, and only if however, concerted efforts, resources, and proper governance, are implemented over long enough periods of time. To support this sustainable change on the other hand, the sociocultural norms of the people that live in the hypothetical low resource context have to align with the desire to have the proposed changes happen in the first place. Put another way, in conjunction with the empirical and material considerations, there are also sociocultural considerations to be had that will help explain social activity.⁶

Science is political, and technology is social.⁷ This is particularly important when considering a consultation process with the receiving community before the transfer of technology is considered. Where the political nature of the science and the social nature of the technology has already been approved, does not mean the same is true in another sociopolitical system.^{6, 7} Assuming however, there is sociopolitical agreement between the two contexts, for argument's sake here, there is still more to consider before the successful mobilization of a technology from a high resource context in a low resource context.

In a low resource setting, the script prescribed by locals to the technology can be drastically different than the one placed on the technology by its designers and creators in its place of origin.⁷ To take our technology of printing organs using your cells outside your body as an example, the organ printing technology could alternatively be prescribed a use in the black market to print biological weapons, contribute to a further widening of the socioeconomic gap between the rich and poor of a given country by limiting access to the technology through its privatization, or create other barriers to those with few resources.

This is where the concept of de-description of the technology prior to its implementation would be critical to its successful mobilization, and would help the technology reach the point of stabilization in the new context.⁸

A Contextual Example

To put it all into context, using an example of successfully mobilized science and technology, there was the Agua del Pueblo project.⁹ *Agua del Pueblo* (translation from Spanish to English, "People's Water"), was a project supporting the transfer of potable water system technologies being mobilized in Guatemalan communities for over 25 years. First and foremost, each community identified the need for a source of potable water. With this need identified, a pump was a technology that was suggested as a means of meeting the community's need for a clean source of water. Through the communities' participation, the pump's component parts were collaboratively designed for maintenance to be feasible by locals in a sustainable manner; this included the delegation of maintenance tasks and governance over the pump being led by community members, with only facilitation of the whole process being done by the project staff. This allowed for a self-directed approach to solving a problem that was self-identified, with technology transfer agents working solely as facilitators to the translation process of the sociotechnical ensemble.⁷

Summary

Using the scientific model proposed by Dr. Mukherjee and its application as a technological treatment proposed by Dr. Atala as a focal point,^{2,4} this discussion paper has shown how STS unpacks the latest theory in international development. Specifically, how to have successful translation of technology and sustainable solutions that use cooperative approaches where all have decision power, and all who will be affected are consulted, rather than operate under a structure that institutionalizes power differences to leverage top-

down prescriptive methods.¹⁰

Future Directions

On To You

Taking it a step further now, grounded in Integral Theory,²⁰ has STS foreshadowed a future where the same procedure would be possible in the reverse direction? A future where LMICs can equally share their knowledge and technology to help high income countries resolve their problems?

As a start to this discussion by the readers, the author would like to suggest one possible answer: yes. Such as Canadian volunteer organization, Cuso International, which is currently and actively recruiting South-North volunteers.²¹ In fact, in an email from Eduardo Diazgrandados (eduardo.diazgranados@cusointernational.org), Canadian Program Advisor at Cuso International, on December, 2017, Ed confirmed there are already four volunteers from the global South who are working in the Northwest Territories of Canada as Education Assistants.

Conclusion

A New Question

In conclusion, and in-line with the new paradigm the author suggested, this paper is now opened to the reader for a discussion as a part of a collaborative approach to knowledge-claims (science) and technology (solutions) creation. Has STS explained not only the current neo-classical theories of post-modern day international development agendas, but also identified the next step in international development: global collaboration?

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Floating Mobile Hospitals: an innovation to improve the health of rural populations

Research Article

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Abstract

Technological innovations in healthcare delivery can improve accessibility to primary healthcare services, especially for rural populations in low and middle income countries (LMICs). This paper examines available research and data on services provided by three Floating Mobile Hospitals (FMHs) in rural Bangladesh, Cambodia and India to assess their impact on the health of rural populations they serve. Findings show that FMHs provide a significant number of preventive and curative services which have important short and long term health benefits for rural populations. Sustainability of these services results from training local health workers, however, continuity of services provided by FMHs often relies on financial support from foreign donors. Overall, FMHs have substantial capacity to reach marginalized rural populations and as such have remarkable potential for improving health outcomes of rural populations.

Introduction

In 1978, the Declaration of Alma-Ata called to attention the importance of primary health care in achieving health for all and emphasized the role of good health in allowing people to contribute to the economy and society effectively.¹ With comprehensive guidelines, the declaration urged world leaders, and stakeholders from health, social and economic sectors to collaboratively provide health care.¹ Nearly 40 years later, however, many countries have not achieved this goal.

According to a WHO report, in 2015, 400 million people worldwide lacked access to essential health services.² Poor access to timely, essential and affordable health services can lead to harmful health outcomes such as long term disabilities associated with treatable health conditions. These detrimental health outcomes can have rippling effects on all aspects of life, thereby contributing to the continuation of poverty leading to poor health.³ This in turn, leads to a cycle of poor health and low productivity.³ In LMICs, rural populations comprise the majority of the total population but suffer from significant imbalance in distribution of healthcare resources.⁴ Globally, rural areas are

characterized by high burden of disease, poverty and lack of sufficient healthcare resources.³ As a result, rural populations tend to suffer from poorer health outcomes than urban populations.⁴

Methodology

A scoping review was performed to identify sources of primary and secondary research related to FMHs. In addition, evidence was gathered from reports and data logs on the preventive, curative and rehabilitative services provided by FMHs to improve the health of rural populations. The evidence was assessed according to the 7th principle under the Declaration of Alma-Ata which provides guideline on how accessibility to primary healthcare services can be improved through provision of preventive, curative and rehabilitative services in a timely manner, and health promotion initiatives.¹

Results

According to the most recent annual reports, Friendship Hospitals, TLC and BCBs were able to provide a significant number of health services. In particular, Friendship Hospitals provided

250-000 general health consultations, supported 5000 surgeries on board and delivered health education to 450 000 women on cervical cancer.⁵ Through their services, Friendship Hospitals have helped 4.2 million rural Bangladeshis since beginning in 2001.⁵ TLC provided 4796 pediatric services, 2101 immunizations and reached 8826 people through health promotion and education initiatives (Dr. Hasan Merali, May 28, 2017). Tonle Sap Lake is home to 1.7 million people who live in floating villages.⁶ Through its two floating clinics, TLC provides care to 8 floating villages on the Tonle Sap Lake and a village on the Stung Sen River which is a tributary of the Tonle Sap Lake.⁷ BCBs conducted 246 684 general health consultations, provided 28 521 routine immunizations and 17 954 antenatal consultations (Bhaswati Goswami, June 2, 2017). BCBs serve over 2.5 million people with essential health services who live on remote islands of Assam.⁸ The data on services provided illustrate how the FMHs are improving access to care for rural populations by providing many preventive, curative and rehabilitative services as emphasized in the Declaration of Alma-Ata.

The declaration also outlines that primary care is influenced by other sectors such as agriculture, education, housing etc. The organizations behind Friendship Hospitals, TLC and BCBs attempt to coordinate with other sectors in their efforts. For instance, TLC works with local schools to carry out health checks and to deliver education on topics such as nutrition and hygiene practices.⁹ Friendship Hospital works with rural farmers to provide financial assistance and education on effective farming techniques.⁵ BCBs have worked with the communications sector to initiate a radio program in local dialect to provide a platform for discussion and education on topics relevant to the communities they serve.¹⁰

Discussion

Beyond the number of people served and the services provided, it is the development of local context dependent initiatives to educate

communities that reflects the success of these FMHs. For instance, the Friendship Hospitals hosts community theatres and BCBs host Radio Brahmaputra to provide platforms for community education.^{5, 10} Such initiatives showcase how the FMHs support the guidelines set by the Declaration of Alma-Ata in developing holistic programs. These initiatives address factors such as the role living conditions and socio-economic environment on health. Addressing these factors empowers people to take charge of their lives to maintain good health by improving their physical and socioeconomic environments. As a result, the impact of these initiatives are highly likely to be sustainable since they are brought about by the people of these communities themselves and they are the most important stakeholder in helping improve their own health and wellbeing.

Conclusion

Overall, the FMHs provide a significant number of preventive and curative services to rural populations. Sustainability of these services results from training of local health workers and community members. However, continuity of services provided by FMHs often relies on financial support from foreign donors. The scope of services and number of people reached by the Friendship Hospitals, TLC and BCBs showcase that FMHs have substantial capacity to improve health outcomes of marginalized rural populations. This is of great value as it helps reduce the disparity in health outcomes between urban and rural areas of these countries. The link between poverty and poor health is well established and it has been and it has been observed that improving health can increase productivity of people and allow them to contribute to the economy.¹¹ Therefore, by improving health of the people, in the long term, FMHs can help alleviate the socio-economic challenges faced by rural populations and support them to help themselves out of poverty. With their knowledge and understanding of the realities of in which rural populations live, FMHs can also support

government investments to build infrastructure and allocate resources in rural areas. This can bring about sustainable changes, and continue to provide a unique solution to the challenges of accessing healthcare experienced by rural populations of LMICs.

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Video Game Interventions for Children with Autism Spectrum Disorder:

a systematic review

Research Article

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Introduction

There have been a growing number of children identified with neurodevelopmental disorders, including autism spectrum disorder (ASD). Around 1 in 68 children have been diagnosed with ASD in USA alone, along with the rising prevalence globally, thereby making ASD a relevant global mental health issue.¹ ASD is characterized by deficits in verbal and non-verbal social interactions.^{2,3} Treatments at an early age may assist in improving these symptoms for better social development; however, individuals may continue to face difficulties that extend into adulthood.³ Despite the increasing number of diagnosed cases, there

is no cure for ASD currently, with medications that only help to manage attention and other atypical states.¹

Consequently, there have been studies in recent years investigating the use of video games for neurodevelopmental rehabilitation, such as virtual reality simulations, video modelling, and neurofeedback approaches.^{4,5} Nevertheless, there is still a lack of high-quality study trials on these types of interventions.^{6,7} Greater assessments on their effectiveness are necessary to further their development.

This systematic review aims to investigate the effectiveness of video game interventions on the

social deficits of children with ASD from studies around the world.

Methodology

Younger children with ASD can reach a period of maximum plasticity where intensive therapy can be more effective, and hence this review explored the effects of video game therapy on a younger population.^{8,9} The following inclusion criteria were adopted: (i) preschoolers (ages 3 - 5) and middle childhood children (ages 6 - 11) with ASD, (ii) video game interventions, (iii) difficulties with social interaction and communication, (iv) publication date between January 2006 and August 2017 in peer-reviewed journals, and (v) empirical studies written in English.

Studies were also excluded as follows: (i) single-case study (sample size < 10), (ii) single intervention session, (iii) no video game component, (iv) insufficient data, and (v) no focus on improving social impairments.

Results

Study Selection

Studies were gathered from two databases: PubMed (n = 130) and PsycINFO (n = 80), along with additional references (n = 4). Key words included autism spectrum disorder, children, video game intervention, multimedia device, and neuro-developmental rehabilitation.

214 studies were screened for eligibility based on their title and abstract, where 184 were excluded. In completing a full-text assessment afterwards, 10 empirical studies were included.

Study Characteristics

Methodologic Features

Five were randomized controlled trial (RCT) studies second phase, while the others were cohort studies.¹⁰⁻¹⁴ Two cohort studies had two intervention groups,^{15,16} whereas the remaining cohort studies had only one first phase.^{8-10,17}

Regarding outcome measures, three studies favoured both parent reports and game related-

measures,^{10,14,15} while one focused solely on parent reports,¹² and another utilized teacher-completed questionnaires.¹¹ Interestingly, one study relied on children-report measures,⁸ while majority stood firm on game-related measures tracked by computers and study assessors.^{9,13,16,17}

Sample Characteristics

Three studies were conducted in the UK,^{11,12,15} one in France,⁹ one in Spain,⁸ one in Israel,¹⁶ one in UK (phase one) and in Israel and Sweden (phase two),¹⁰ one in USA,¹³ one in Brazil,¹⁷ and one in Australia.¹⁴ Interestingly, several studies were conducted across Europe, which demonstrates much about the interest in the implications of video game therapy purveyed within that region.

The studies totaled to 462 participants, with 100 as the largest sample¹¹ and 10 as the smallest.⁸ Majority recruited more males (n = 326, 83.59%) than females (n = 64, 16.41%).

Targetted Social Impairments

One study targeted joint attention (concentration and cues),¹² while another focused on facial recognition.¹³ Four studies wanted to improve emotion recognition and regulation.^{9,10,14,15} One focused on increasing positive social interactions, including sharing and conversational behaviours.¹⁶ Similarly, another study targeted social initiation (motivation and collaboration).⁸ One study assessed improvements in social functioning during a physical education program.¹¹ The last focused on social-cognition, including imitation and cooperative play.¹⁷

Game Interventions

One study utilized iPads for joint attention training.¹² Five studies used computer games to train emotion recognition and face processing.^{9,10,13-15} Similarly, one study employed computer-based games in language therapy sessions to improve socio-cognitive performance.¹⁷ Another used a multi-touch table screen to direct a collaborative puzzle game.¹⁶ One study created

a Kinect console-based video game to promote social initiation,⁸ while another used an existing Nintendo Wii™ game.¹¹

Game Protocols

There were three studies that had one video game intervention session each week,^{8,14,17} three studies with two to three sessions per week,^{9,11,15} and one study with two sessions in total.¹⁶ Three studies were based on gameplay times.^{10,12,13} Sessions ranged from 15 minutes to 2 hours.

The longest regimen was over a 9-month period,¹¹ while the shortest was 2 weeks.¹⁶ Seven studies had their sessions over 4 to 10 weeks.^{8-10, 12, 14, 15, 17} One had theirs over 19 weeks.¹³

Findings

One study showed no significant differences between groups for joint attention, but no significant negative changes were observed.¹² Another study noted general improvements in facial recognition.¹³

Two studies focusing on emotion recognition and responsiveness showed significant improvements in emotion regulation and coping strategies ($p < 0.01$).^{14, 15} Two other studies targeting emotion recognition specifically showed significant improvements in most of the emotion recognition conditions ($p < 0.02$).^{9, 10} Three studies presented significant improvements in positive social interactions, imitation, and cooperation ($p < 0.05$).^{8,16,17} Furthermore, a newer study showed significant improvements in social functioning for boys specifically ($p < 0.05$).¹¹

For follow-up sessions, only two RCTs had follow-up assessments,^{12,14} while the cohort studies had none. For one RCT, there were no differences between the groups afterwards.¹² The second RCT showed maintained improvements in emotion management at the 6-weeks and 5-months follow-ups.¹⁴

Generalization

There were a few studies that incorporated life settings to facilitate the transferability of learned skills, such as using role-plays.^{14,15,16} One study also utilized a virtual environment.⁹ However, there was no significant observable impact on real-world communication skills for joint attention.¹² Moreover, four studies did not evaluate the transferability of learned skills.^{8,12,13,17} In addition, two studies experienced difficulty with generalizing test results as a consequence of their main intervention group being too heterogeneous.^{9,17}

Study Challenges

The study quality can be limited depending on the experimental procedures, such as studies with the lack of randomization and blinding and no additional participant/control group for comparisons.^{8,9,10} first phase.¹⁷ One of the main challenges faced was having a small sample size.^{8,15,16} There were also studies that used insensitive outcome measurement tools (subjective report measures),^{12,14,16} with the inconsistent use of diagnostic instruments across all participants,¹⁵ or testing sites.¹⁰

Discussion

Many of these studies faced potential confounding variables due to their methodology, uncontrolled participant characteristics, and insensitive rating tools. Additional variables included unmatched IQ level between groups, participants' gender, and unknown/undocumented outside treatments. Moreover, the small number of intervention sessions may be inadequate in eliciting noticeable changes, along with the lack of follow-up assessments.

Overall, there are several methodological features to improve on, such as having more effective high-quality study designs (RCTs), larger sample sizes with randomized sampling techniques and multiple recruitment sources, multiple testing scenarios similar to real-life social settings to better generalize gains, and longer-term follow-ups to evaluate the persistence of gains.

Even with these study limitations, there has been a range of both neutral and positive results in improving social deficits. Additionally, majority of the children and parents were receptive of these gaming interventions.

Conclusions

There were positive intervention effects reported on particular aspects of social skills for children with ASD across the world. However, there were limitations and risks of bias that must be taken into consideration for these studies in focus. Nevertheless, they have shown virtually no negative intervention effects and, as such, these treatment gains can and should be further explored.

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Evidence Informed Policy In Latin America And The Caribbean: a detailed look at perceived facilitators of incorporating research evidence into public health

Research Article

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Abstract

Public health policy has a vital impact on the populations' health status and has the power to either decrease health inequities or lead to further marginalization. One of the most efficient ways of closing the equity gap is to support evidence informed policy making at all levels of government. Despite high level global calls granting health research a more prominent role within the health policy field and urging researchers, policy makers and health care providers to collaborate in the efforts to bridge the gap from research evidence to applied health policy, research evidence informed health policies are still rare. Given that successful cases of evidence informed public health policy making have not been systematically reported in biomedical journals, the research reported in this paper uses Latin America and Caribbean context as a case study and draws on the in-depth semi-structured interviews with 17 researchers, policy makers and knowledge broker who have all successfully engaged in evidence informed policy making process. The overall aim was to provide insight on their experiences and perceived facilitators of incorporating research evidence into public health policies.

Introduction

Health research played an instrumental role in reducing population's morbidity and mortality rates,¹ improving quality of life and contributing tremendously to the increase of life expectancy. Unfortunately, the increase of life expectancy was not equitable to all regions.¹ In the last 25 years, concern with inequities resulted in a number of high level international meetings followed by highly visible global resolutions, each granting health research a more prominent role within the health policy field and urging researchers, policy makers and health care providers to collaborate in the efforts to bridge the gap from research evidence to applied health policy.^{2, 3, 4} Public health decision making operates in a highly complex and multidisciplinary environment that in itself includes politics and policy making. Policy making is influenced by many factors in varying degrees such as the media, pressing times, political

climate and institutional constraints.^{5,6,7} In this overall complexity of the policy making process, research evidence is only one of many factors that influence public health policies.^{3,5,6,8-12} Therefore, today public health policies are dictated based on intuitions, standard operating procedures and expert opinions.^{8,12,13} Often, expert opinion is a determining factor,^{3,11} yet it is rarely based on current research evidence.^{8,11,12,13}

Given that successful cases of evidence informed public health policy making have not been systematically reported in biomedical journals, this article aims to provide insight on the experiences and explore perceived facilitators of incorporating evidence in public health policy by policy makers, researchers and knowledge brokers who have engaged in the process of evidence informed public health policy making.

Methodology

Inclusion criteria consisted of policy makers, researchers and knowledge brokers who had successfully incorporated evidence in public health policy within the countries of Latin America and the Caribbean on local and national levels and were affiliated with public health organizations or academic institutions or both. A purposeful sample comprised of 10 policy makers, 6 researchers and 1 knowledge broker who have effectively made evidence part of their policy making process. In-depth semi-structured interviews were carried out to engage participants in a discussion about their experience incorporating evidence in health policy. Following transcription, data was thematically analyzed as suggested by Braun and Clark.¹⁴

Results

All participants reported that to be successful in incorporating evidence into the public health policy making process, many changes had to happen on both systemic and organizational levels that support and advance new requirements for health policy development. Most of the participants referred to the 'shift change' on a political arena that allowed for evidence based health policies to become a gold standard. Participants spoke about the importance of the location of purposeful 'shift change' decision on a hierarchal level, as well as strategic planning and execution/implementation undertaken by the management to carry out proposed standards into everyday practices.

Most participants regarded the 'knowledge translation' piece as a key to successful evidence informed policy and expressed the need for both policy makers and researchers to work together and acquire additional skills in the cross-respected fields. Researchers talked about the need to be trained in the understanding nuances and complexity of the political process of policy development; and policy makers called for research skills training. As noted by one policy maker (participant 5): "Researchers must be aware of current policy agenda and both groups

must learn to spot the windows of opportunity to support evidence informed policy through consistent interdisciplinary collaboration and establishment of tools and strategies to assure sustainability". Majority of participants perceived evidence informed policy as an essential feature of equity, social justice and a protection from vested political interests. Organizational 'shift change' towards evidence informed policy, served as a gateway to equitable and efficient healthcare provision, as well as empowerment of civil societies and communities. Many participants reported evidence serving as a platform to open up a deliberate dialogue between the community and policy makers. Majority of the participants discussed how evidence informed policy allowed for gathering information according to the needs of populations, resulting in a more efficient approach. For example, one policy maker (participant 3) noted: "...research evidence gives me the opportunity to respond to the needs for the user and those are the policies that will have the most impact." Additionally, it provided scientific merit behind the rationale; allowed the use of previously discovered data and resources; provided best care for the public; and allowed decisions free of bias and emotions. Aside from population based impact of evidence informed policy, the majority of policy makers perceived it positively impacting their own work. Many found that evidence added an element of security, accountability and protection against political/economic vested interests to their jobs. Furthermore, evidence-based public health policy provided an ethical and political standpoint and allows policy makers to make decisions that are objective, free of bias and emotions.

Discussion

This paper provides an overview of perceptions and facilitators experienced by researchers, policy makers and knowledge broker with respect to successful incorporation of research evidence in public health policy making process. We found that participants' perceptions on the role of the

evidence within policy making were shaped by the institutional culture and exposure to research evidence. We identified three main components which act as facilitators in the evidence informed policy making process: changing the culture of the institution and making evidence part of the culture or so called “gold standard”; establishing ongoing relationships and communication between researchers and policy makers; developing applied technical units, where qualified specialists answer policy makers questions in an efficient manner.

Conclusions

Public health policy has a vital impact on the populations’ health status and has a power to either decrease health inequities or lead to further marginalization. One of the most efficient ways of ‘closing the equity gap’ is to support evidence informed policy making at all levels of government. Governments need to develop innovative and sustainable mechanisms that support the culture of evidence based public health leadership in order to strengthen public health systems and practices, advance health equity, and address social and economic injustices at individual, organizational, and systemic level.

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Improving Physician-Interpreter Communication Strategies Within Toronto Hospitals: a preliminary environmental scan

Research Article

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Abstract

Ineffective physician-interpreter communication strategies contribute to the underutilization of interpreter services within hospitals. Using an environmental scan, the present study will provide support for the need to update such strategies within the region of Toronto. A SWOT analysis lends support for a current window of opportunity to implement novel strategies based on patient needs.

Introduction

Foreign-born Canadians, immigrants, and refugees face the impossible task of navigating Canada's healthcare system due to language barriers. Specifically, a study conducted by Sears, Khan, Ardern and Tamim revealed that while 265 335 Ontarians do not speak the national language - English or French - merely 3.76% of physicians are able to speak the most popular unofficial languages: Punjabi, Chinese, Italian, Portuguese and Spanish. As a result, non-English speaking patients search for culturally similar physicians or simply rely on family members to act as translators during medical appointments - an ethical issue which elicits bias and privacy concerns.¹

However, it is imperative that adequate interpreters are utilized as language barriers may result in: misdiagnoses, decreased compliance concerning treatment and consultations, decreased patient satisfaction, and lower screening rates for preventative testing.² While preexisting interpreter services are available within the Toronto area, they are severely underutilized due to potential logistical errors and accuracy.³

In an attempt to alleviate such issues, the Toronto Central Local Health Integration Network (TC LHIN) implemented Language Services Toronto (LST), a "real time" program used to increase accessibility to over 170 languages through 24/7 over-the-phone interpreters.⁴ An evaluation

conducted by the Centre for Research on InnerCity Health found that usage rates differed, with varying organizations failing to utilize the services at all.⁴

Methodology

A SWOT analysis will inform the present study in order to support the need for improved use of interpreter services by physicians in Toronto hospitals.⁶ An environmental scan, comprised of both internal and external scans, involving strengths and weaknesses, as well as opportunities and strengths, respectively; will provide an examination of the factors currently restricting and/or providing a window of opportunity for the implementation of updated physician-interpreter communication strategies.

Results

Strengths

The Syrian Refugee Intake Tool, an alternative method used to decrease wait times in lieu of interpreters, is used at the refugee clinic at Women's College Hospital. However, it is specific to Syrian refugees rather than non-English speaking immigrants as a whole. Thus, it is inferred that interpreter services are still relevant and in demand in areas like Toronto due to the large number of immigrant populations.⁷ Currently, best practices are available at hospitals such as

Hamilton Health Services where toolkits and resources are available online.⁸

Since over 140 languages are spoken in Toronto, hospitals' interpretive services require a necessary change to accommodate the needs of patients.⁹ Furthermore, these hospitals often hold strong reputations and commitments to underserved, marginalized, and culturally diverse populations such as the Centre for Addiction and Mental Health.¹⁰

In addition, reports have found that LST is already well-received by physicians.⁴

Weaknesses

Disrupting the status quo through the addition of communication within concrete guidelines for interpreter involvement may be necessary for improved physician-interpreter communication. For instance, an internal conflict persists within physicians concerning what should be done versus what could be done in a given medical situation.⁵ According to a study conducted by Parsons, Baker, Smith-Gorvie and Hudak (2014), physicians either 'got help' from interpretation services or 'got by' using their own judgement based on: availability of time, access to and efficient use of interpreter services, and "acuity of the clinical situation."⁵ However, they reported anxiety and commented that such an approach was "less-than-ideal."⁵

Changing the decision-making process for physicians may prove to be difficult due to power dynamics, habits, and the hierarchical medical structure.¹¹

Opportunities

Improving physicians' use of interpreter services within downtown Toronto is ideal as immigrants, minorities, and refugee populations are geographically prominent within the area and in need of such services.¹²

The current political climate creates a sense of urgency concerning the implementation of communication strategies to decrease barriers to interpreter services. Specifically, between

November 4th, 2015 to February 29th, 2016, it is estimated that 25,000 Syrian refugees were resettled in Canada. As of January 2, 2017, that number climbed to 39 671.¹³ As a result, interpreter services are timely. For instance, due to the influx of refugees, newspapers have cited that "the demand for interpreters outstrips their numbers," thereby promoting the need for inter-preters.⁷

Threats

One of the largest issues is the cost of interpreter services for medical facilities. Although, it is currently affordable, the pricing may change depending on the type of service being used: in-person, phone call, or the use of specialized equipment for interpretation.¹⁴

In addition, the culture of medical hierarchies may persist and continue to restrict physician-interpreter relations and communication. Dr. Bruce K. Berger, a Public Relations expert, alludes to the maintenance of hierarchies as a result of knowing "...what needs to be done to create cultures for communication, but too many organizations just don't do it. They fail to move from knowing to doing."¹⁵ Active change is needed to disrupt medical hierarchies in order to rebuild a collaborative environment.

Discussion

The SWOT analysis provides insight into the types of strategies that may be implemented based on the emergent theme of ineffective communication and barriers to care. Physicians would comprise the primary stakeholders, while the secondary stakeholders are non-English speaking patients and frontline medical staff. The Board of Directors for the corresponding Toronto hospitals also need to be involved in order to approve the changes to communication strategies.

Supplementary communication strategies may be needed for frontline staff members as research has found that they act as 'gate-keepers' to physicians.¹⁵ Therefore, a culturally sensitive communication strategy is imperative among

frontline staff to ensure patient satisfaction and compliance.¹⁵ In turn, the increase in communicative efforts among frontline staff, could provide immigrant patients with the awareness that such translation tools are available, thus, bolstering the demand and utilization of such services.

This provides an opportunity to ensure physicians communicate with interpreter services and increase use as well as ensure that front-line medical staff are better equipped with the proper training to interact with immigrant patients while they await the arrival of interpreters.

It is critical to promote two-way physician-interpreter communication through a common 'language:' patient-centered care. Ultimately, this may lead to a sense of trust in their 'teammates' and maintained engagement in intra-hospital communication. Furthermore, their increase in communicative efforts would provide immigrant patients with the awareness that such translation tools are available, thus, bolstering the demand and utilization of such services.

Conclusion

The utilization of interpreter services is instrumental in improving health outcomes and barriers to care among non-English speaking patients. The present environmental scan provides support for the implementation of an updated physician-interpreter communication strategy targeting Toronto hospitals.

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Feasibility of Golden-Hour Interventions on Improving Victim Survival Due To Road Traffic Injuries In India

Research Article

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Abstract

Road Traffic Injuries (RTI) is one of the most significant emerging public health challenges of the 21st century. With a global annual death toll of 1.25 million, RTI is one of the leading causes of premature death, and disproportionately affects low and middle-income countries (LMICs). India ranks top amongst LMICs in its national burden of RTI. Research into RTI prevention and trauma management is urgently needed. We undertook a scoping review of available evidence on the feasibility of “golden hour” interventions delivered to RTI victims to reduce mortality. We found limited evidence on this topic. However, most of the identified evidence highlight India’s bigger problem of gaps in pre-hospital trauma management system. Several solutions have been proposed to bridge this gap, including mobilizing community lay-persons for trauma management. The current availability of evidence is not sufficient for undertaking a systematic review. However, interventions identified in this review could form the basis for future program evaluation in their effectiveness in reducing mortality.

Introduction

RTI as a global health burden

RTI is defined as “a fatal or non-fatal injury incurred as a result of a collision on a public road involving at least one moving vehicle.”¹ Between 1990 and 2015, the global mortality due to RTI increased by over 50 per cent, and is becoming one of the most important significant emerging public health challenges of the 21st century.

Today, about 1.25 million people die traveling on the world’s roads each year.² Many more sustain serious injuries and long-term adverse health consequences. Among those 15 – 29 years of age, RTI is a leading cause of premature death worldwide.² In the general population, RTI is currently the ninth leading cause of death, and is expected to become the seventh leading cause of death by 2030.²

This predicted increase will largely take place in low and middle-income countries (LMICs). While LMICs collectively account for 53% of the world’s total motor vehicle ownership, they suffer from 85 – 90% of the world’s RTI-related mortality.³

This is partly due to the “motorization revolution” happening in many LMICs, wherein rapid modernization and urbanization coincided with unprecedented proliferation of motorized vehicles within a short few years. Very often, the necessary infrastructure, policies, regulatory enforcement, and emergency medical response have not kept up with the rate of increase in vehicle use.²

Traffic patterns in LMICs

Compared to HICs, LMICs have higher proportions of vulnerable road users (VRUs). VRUs refer to road users lacking physical protective ‘shells’ while using public roads; these include, among others, pedestrians, bicyclists, motorcyclists, and rickshaws.⁴ Moreover, traffic patterns in LMICs include greater variety and intensity of traffic mix between VRUs and four-wheeled cars, and most places lack sufficient separation between car traffic and other road users. Therefore, VRUs in LMICs are at a much higher risk for RTI and related deaths, and account for up to 75% of all road fatalities in LMICs.⁵

Case for India

India is the second most populous country in the world, and faces many of the road traffic challenges typical of LMICs.⁶ In 2014, India's official RTI death toll ranged between 141 526 and 207 551, and ranks top amongst LMICs.^{2,7} India alone accounts for 11 - 17% of all traffic mortalities around the world, and RTI deaths cost India approximately 3% of its annual GDP.^{2,7} Like other LMICs, VRUs are especially susceptible, and there is a need to assess the scope of evidence on practices to reduce mortality from RTI.

Golden Hour

The term 'golden hour' (GH) is a concept rooted in emergency medicine.⁸ GH refers to a window of opportunity before hospital arrival (pre-hospital time) during which medical intervention can significantly reduce a patient's morbidity and mortality.⁸ While evidence has been inconclusive on the exact duration of GH needed to maximize survival, the general understanding is that a reduction in pre-hospital can benefit victim survival in cases of acute injury.⁸

Methodology

We performed literature search on four databases: PubMed, PsycInfo, ProQuest, and ScienceDirect using methodology guided by the 2015 Joanna Briggs Institute Reviewers' Manual.⁹

We sought to include studies which provide an up-to-date snapshot of RTI in India or similar LMICs, as well as current trauma-management practices specific to the treatment of road injuries. Studies on RTI conducted in a setting outside of India or similar LMICs were not included.

Consistent with guidelines on the conduct of scoping reviews, we did not appraise methodological quality in our included articles.

Discussion

There is limited evidence on the feasibility of GH interventions specific to reducing RTI mortality. Most of our identified evidence highlight

India's bigger problem of inadequate pre-hospital treatment in trauma care.

Like many LMICs, India currently lacks a national standardized pre-hospital care system.¹⁰

¹¹ Very often, trauma victims are transported to hospitals through non-EMS channels. Since 2005, GVK-EMRI – a public-private partnership – has emerged as a provider of EMS across India to address this gap.¹¹ Even so, the majority of EMS services are only available in large urban centres.¹¹ In many cases, EMS serves only as a transportation medium, and rarely provide pre-hospital care while transporting victims to the hospital.¹⁰

Three studies discussed mobilizing community bystanders as a feasible way to improve pre-hospital interventions for trauma victims.¹²⁻¹⁴ Oestern, Garg, and Kotwal in 2013 proposed a two-tiered system to provide pre-hospital care within a "golden hour": first tier consists of local residents trained in recognizing medical emergencies and providing basic first-aid treatment until formally trained health personnel arrive. Health personnel would then provide more advanced second-tier treatment - scene management, rescue, and transport of injured people.¹³

Basic levels of pre-hospital care can make a life-or-death difference. Empowering community bystanders represent a step closer to bridging India's current gap in pre-hospital care. If basic pre-hospital care is available, such as stopping airway obstruction or external hemorrhage, a significant number of RTI deaths can be averted in India.

Conclusion

From this scoping review, we found that there is relatively scarce evidence on GH interventions to reduce RTI mortality in India. At this point, the breadth of evidence is not sufficient to conduct a systematic review. The limited evidence revealed an underlying problem – the current fragmented trauma care system in India. Recent research have proposed solutions in bridging the gap of pre-hospital care, with researchers suggesting combinations of strategies. As these systems

become better established, further research on their effectiveness is encouraged, as this will enable researchers to inform policymakers in optimizing post-trauma management of RTI in India. The success of these systems and policies can then be disseminated to other highly populated LMICs to address RTI as one of the most significant emerging public health challenges in the 21st century.

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Oral Cancer: an Indian scenario

Opinion Editorial

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Oral cancer is the sixth most common malignancy in the world, and is a major public health concern in India. As one of the fast developing country in the world, India is the home of second largest population of the world. The Indian subcontinent accounts for one third of the global burden of cancers of lip and oral cavity. Oral cancer is of major concern in Southeast Asia primarily because of inadequate awareness compounded by prevalent oral habits like betel quid chewing, smoking, and alcohol consumption. Any malignant neoplasm which is found on the lip, floor of the mouth, cheek lining, gingiva, palate or in the tongue can be diagnosed as oral cancer. Oral cancer is among the top three types of cancers in India.¹

In the form of an opinion editorial, this article presents an Indian scenario where oral cancer is ranked first amongst male cancer prevalence and third amongst female cancer prevalence.² The international agency for research on cancer has predicted that incidence of cancer in India will increase from 1 million in 2012 to more than 1.7 million in 2035. This prediction from international agency indicates that the death rate cause by cancer will also increase from 680 000 to 1 - 2 million in the same period.³ In many low and middle income countries (LMICs) like India, people general lack access to well-regulated cancer care systems. This has significant implications to the population. Patients are often unaware of the disease until it reaches a fatal stage, where they have reduced possibility to recover their health. Despite recent

advances in cancer diagnoses and therapies, the five year survival rate of oral cancer patients has remained constant at a dismal 50% over the last few decades. Over the recent decades, there has been continued increase in prevalence of cancers in the oral cavity among both genders. Improved public health education and promotion has potential to mitigate the cancer burden, but these campaigns often do not reach the populations most in need.

Awareness is so low regarding cancer that people don't know about its symptoms and when to report and where to report during early stages of oral cancer. In rural areas of India, health system regulations are weak, and people frequently visit unqualified local practitioners and unethical traditional healers for their health problems. Ultimately, this causes more damage with their health.

Tobacco and alcohol are regarded as the major risk factors for oral cancer. The population-attributable risks of smoking and alcohol consumption have been estimated to 80% for males, 61% for females, and 74% overall. The evidence that smokeless tobacco causes oral cancer was confirmed recently by the International Agency for Research on Cancer.⁴

LMICs account for 57% of cases and 65% of cancer death worldwide – an alarming statistic. The burden of cancer is continuously shifting toward developing or less developed countries partly because people in general are living longer, but also because of increased prevalence of known risk factors (e.g. epidemic of immature use of

tobacco) among populations.⁵

Oral cavity is accessible for visual examination through which oral cancers and premalignant lesions can be easily detected based on their well-defined clinical diagnostic features. In most cases, early lesions are easily detectable, but in spite of having this, most of the time oral cancer is detected in their advanced stages. Facts show that 60-80% of cancer patients in LMICs present with advanced symptoms of oral cancer, compared to 40% in developed countries. This results in significant reduction in their survival rate. Early detection is one of the key factor which improve the cure rate, also it would lower the cost spending by individual and lower the chance of morbidity associated with treatment.

Gutaka is arguably one of the leading risk factors for oral cancer in India. Gutuka is a form of smokeless tobacco which is introduced less than three decades ago, and now it is one of the largest commercial activity around the country. People are easily addicted to it as it is inexpensive and widely available in urban and rural settings, heavily advertised, and is convenient to use with complete social acceptance. The ease of access, combined with lack of social barriers makes Gutuka one of the major problem of spreading oral cancer.⁶

The greatest risks of the oral cancer burden exist among the lower socioeconomic strata. People from these socioeconomic strata are more commonly engaged in chewing habit of addictive substances like tobacco or betel nut. These populations often have the most limited access to education, prevention and treatment, which create a significant gap between them and ideal states of health. Due to a lack of health literacy and deficient resources, people from lower socioeconomic strata often visit unqualified local practitioners or unethical traditional healers who mistreat or exacerbate the patients' conditions.

Improvements in health literacy is very much needed. This includes easily accessible health education programs in these high-risk communities. A study done in Bangladesh

suggest that pictorial message are more effective compared to text-based messages in spreading health awareness in communities.⁷ Based on this, health literacy initiatives should focus on displaying pictorial messages in common public areas, and more importantly, in the native languages of the communities across India. Health education campaign in schools, community and hospitals should be similarly adapted increase awareness in wider population groups.

The disparities in oral cancer burden can in a large part be addressed by pushing for provision of easy, accessible, detection, as well as prompt and proper treatment services for symptomatic cases. There is deep need for in depth studies on incidence and prevention of oral cancer among Indian population.

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