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Climate-Responsive Equity: Addressing Racial Disparities in Healthcare Amidst Crises

Shefali Gupta

Abstract

This paper examines how the absence of accessible healthcare intersects with the disproportionate burden that climate change places on marginalized communities. The paper reviews the current literature on the intersection of climate-related health crises and public policy, highlighting the lack of policies centered around this intersection. This review explores how the disproportionate impact of the current climate related health crisis on minority communities is a continuation of structural violence, inequality, and systemic neglect by both the government and public policy makers. Possible solutions, along with their practical and ethical limitations, are dissected. From a healthcare perspective, this paper emphasizes the need to highlight the incoming health crises, and to take measures to reform both healthcare and climate policies to tackle them.

Introduction

The climate crisis is a glaring issue, leading to an increased spread of vector-borne disease, food insecurity, stress, and other health related issues[1]. These crises disproportionately affect communities of color and marginalized communities due to housing discrimination, economic disparity, and a lack of political representation to fight for better policy-making.

In addition, centuries of policies backed by racism, ableism, and sexism have led to a system that treats people, even those with insurance, very differently based on varying social and health identities[2]. Healthcare outcomes can vary depending on the social determinants of health (SDOH) of each individual. In fact, the "SDOH of REM [racial and ethnic minority] adolescents can have negative personal health outcomes that may differ from that of the health outcomes of the dominant racial and ethnic group due to the complex link between social and structural determinants of health"[3]. The uneven playing field in the healthcare system that already exists only contributes to the worsening of the unequal burden of the adverse effects of climate change.

Unfortunately, the intersection of climate change and public health is severely understudied. While many papers discuss the efficacy of climate change solutions, most fail to consider the effects of these solutions on public health[1]. In fact, through a meta-analysis of current research, Scheelbeek et al. found that a majority of climate change solutions placed heavier burdens on women, and failed to recognize that increased resilience in an individual does not relate to actual betterment of the general population's health[1]. Public health is treated like an afterthought, with little consideration of how parts of climate change, and solutions, can impact health. In addition, WHO found that less than "1 in 5 countries have conducted an assessment of the health co-benefits of national climate mitigation policies[4]". Again, this points to the lack of consideration of health benefits and health risks associated with certain policies related to climate change. Even worse, less than 0.5% of climate finance is dedicated to mitigating public health crises, despite the numerous connections between the two. As climate change is so intertwined with the current state of this planet, it is imperative to look into this intersection of health and the environment.

Structural Inequities in Healthcare

1. Race

To begin with, the current healthcare system uses SDOH to explain possible disparities in health outcomes between groups. These determinants are "described as situations or conditions where people are born, grow, live, work, and age with factors relating to inequities in power and economic resources"[3]. However structural racism is notably absent from the framework of SDOH. Discrimination is listed under the social and community context, but it is not a core part of the topic. However, this eliminates the consideration of the recent past of this country and the

white racial frame. Feagin describes the white racial frame as an "overarching white worldview that encompasses a broad and persisting set of racial stereotypes, prejudices, ideologies, images, interpretations, and narratives, emotions, and reactions to language accents, as well as racialized inclinations to discriminate"[4]. It is important to note that despite mentioning environment and community, historically, SDOH does not give credit to the most common culprit of disparities between communities and environment: institutionalized racism[5]. However, in recent years, institutionalized racism has become a widely discussed SDOH, although implementation of this concept into classrooms and the healthcare field is still lacking.

The inequities in healthcare stem from long standing geographic segregation. One example of this is redlining. In the early 1930s, the Home Owners Loan Corporation was tasked with making homeownership more affordable. They drew maps coloring non-white communities with red ink, or "redlining". They designated these communities as 'high-risk investments', meaning that only 2% of the loans given out between 1934 and 1962 were given to non-white homeowners [6]. Redlining perpetuated the stereotype that communities of color were 'high-risk' and it was not safe to invest in people of color. Denied access to refinancing prevents people from accumulating wealth. Refinancing can make homeownership more affordable, allowing future generations to inherit wealth and build upon it. When people aren't worried about housing payments, they can invest in local businesses, community projects, better schools, etc. and uplift neighborhood prosperity. However, redlining prevented this from occurring. In addition, the lack of wealth-building and federal underwriting-when the government guarantees loans-in communities of color dissuaded private businesses, such as private hospitals, from investing in these neighborhoods.

In 1946, the federal government passed the Hospital Survey and Construction Act, or the Hill-Burton Act, to provide for the construction of public hospitals and care facilities. However, the legislation did not mandate equal funding between facilities. Facilities were racially segregated with hospitals serving communities of color suffering from a lack of funding. The racist history of the US, and years of segregation have left areas that are predominantly POC with worse hospitals and care facilities. Acts like the Hill-Burton Act have failed to address this systemic racism upfront, only worsening the problem. In addition, in order to appease Southern States, the federal government has given states extreme flexibility with Medicaid, allowing them to limit eligibility in a way that severely impacts communities of color[2]. This tactic poses many problems, as legislation is left to individual states, where bias impacts insurance, especially in the South. Also, bias within the system has left minority patients less likely to "receive evidence-based cardiovascular care, kidney transplants when indicated, age-appropriate diagnostic screening for breast and colon cancer, timely treatment related to cancer and stroke, appropriate mental health treatment, and adequate treatment when presenting suffering from pain[2]". The system is clearly failing non-white patients, by not providing an equal standard of

care. And, these inequities are noticed by those affected.

People in these marginalized communities around the world document feeling frustrated, left out of decision making, and overall not trusted by healthcare professionals. Several studies focused in Europe found clear anti-migrant attitudes among healthcare workers. This included longer wait times, stereotypical commentary, fewer tests run in the ED, and a higher risk of not being admitted to hospital[7]. They report feeling as if their concerns were not taken seriously enough and feeling belittled[8]. It is important to note that individual providers may also have signs of implicit bias, but it is the system's responsibility to educate everyone in the field to prevent this from happening, as everyone regardless of race, gender, ethnicity, class, etc. deserves equal access to healthcare. This includes not hiring providers who show obvious signs of bias, teaching how to mitigate implicit bias, and also restructuring the system to mitigate structural racism.

2. Note on Intersectionality, Gender, and Sexuality

In addition to the great disparity in healthcare for people of color, it is important to understand that other communities, and those at the intersections of them, also face discrimination in healthcare. Oppression is interlocked in a “matrix of domination”, as Patricia Hill Collins calls it. There are multiple systems of marginalization and individuals can exist in different interweaved positions[9]. A trans white woman, while privileged by her race, can face discrimination while seeking healthcare in ways a cis black woman will not. Both face discrimination, but the nature of discrimination is different. Similarly, a trans black woman doesn’t face additive oppression of being black and trans, but rather a different variant of discrimination that is specific to trans black women. With this in mind, it is essential to mention the stigma and discrimination queer individuals face.

Societal stigma and lack of support reduce health outcomes for LGBTQ identifying individuals. LGBTQ individuals are more likely to have increased alcohol consumption and cigarette smoking[10] .

Testimonies from LGBTQ indivudals point out how healthcare providers operate under a heteronormative worldview, which often puts pressure on the patients to educate providers on their gender or sexuality. Patients usually have no way of knowing if their doctor will be openly discriminatory towards their gender identity or sexuality, which puts undue stress on the patient[11]. Given that violence, murder, and suicide are immense health concerns in the LGBTQ community, access to proper support in healthcare is imperative. Rural areas may lack even more support due to increased stigma about the community as well as physical isolation and distance from people. Lastly, especially for trans individuals, insurance can be a big hassle. Insurance companies may not approve hormone therapy, surgery, etc. making it very costly for trans people

to simply exist, pushing them into poverty[11]. Informing healthcare providers on the LGBTQ community could alleviate many of these concerns.

Public Health Crises

Climate change is missing from the medical community's definition of SDOHs. Climate change worsens health outcomes, burdens marginalized communities, and compounds the effects of other SDOHs (and structural racism). The burden of these crises fall disproportionately on marginalized communities as they lack access to preventative healthcare, good infrastructure, and already tend to have pre-existing health conditions due to economic disparity. A Maryland survey found that race, chronic illness, and low-income were greatly associated with a larger health risk due to climate change[12]. Total healthcare costs of six climate events from 2000-2009 summed up to 14 billion dollars in deaths, hospitalizations, ED visits, and appointments[13] . Marginalized communities, particularly communities of color, are usually the ones facing economic disparity and may not be able to recover from the financial burden of these crises.

The most commonly reported health issues are infectious disease, WASH (water, sanitation, hygiene), and food insecurity[1]. The latter are often due to natural disasters or extreme weather such as drought, floods, hurricanes, etc.

1. Disease

As greenhouse gasses lead to an increase in temperatures, traditionally colder climates become much warmer year round. In Canada, this means the environment will become much more suitable for ticks, which carry many diseases, including Lyme disease[14] .Though South Korea is not endemic for dengue, recent outbreaks have been more common due to shifts in temperature. Despite a well-established health infrastructure, not many people were aware of the disease[15]. Those who live in disadvantaged communities with lower socio-economic status, will not have the same access to healthcare as those living in wealthier, more connected communities. The change in disease patterns will burden those who lack access to healthcare, such as minority communities and those living near or below the poverty line.

Warmer temperatures in sub-Saharan Africa favor *Ae aegypti* mosquitoes over *An gambie*. This will lead to a decrease in malaria, but an increase in dengue, chikungunya, and other arboviruses. Without proper foresight and preparation, this shift in disease character will be deadly for those living there. Disease control strategies that work against malaria are not very effective for dengue[16]. Rapid public health efforts are needed in order to ensure that all communities in the region, even communities that are very remote, rural, and lack adequate resources are able to treat their people. Other developing countries in tropical climates face similar concerns, as they lack resources to combat their current disease outbreaks, let alone develop and implement

policies for rapidly changing health crises. Without proper intervention, this will disproportionately affect countries in Africa, South and Southeast Asia, and South America, especially poorer, rural communities who do not have access to large, well-funded hospitals.

Another common cause and byproduct of climate change is habitat fragmentation due to deforestation and extreme weather. This can lead to pathogen spillover. As habitats are destroyed and fragmented, humans are forced to come into closer contact with pathogens/pathogenic substances/carriers, which can mutate to infectious diseases transmittable by humans[17]. This may lead to higher infection rates of diseases that are currently very uncommon, or the mutation of new diseases. This will put a strain on healthcare systems, especially in places with limited access to medication and funding. People of color are less likely to be covered by insurance, and may avoid medical care due to high costs. In addition, bias within the system and individual providers means that POC, women, and queer people are more likely to be dismissed and not treated as rigorously. As different diseases crop up, the lack of access and the bias within the system, will harm these communities, as their concerns may not be taken seriously.

Increasing aridity in the Southwest and Midwest of the US causes greater dust in the atmosphere. Adverse health effects of fine mineral dust include cardiovascular and pulmonary diseases, including premature death. Silica, which makes up approximately 60% of particulates found in desert regions, causes chronic lung inflammation, cancer, fibrosis, and autoimmune disease. Fine dust is expected to increase due to climate change, worsening these effects[18]. The increase in dust will also trigger and worsen pre-existing conditions such as asthma. Given that "the highest rate of asthma is found in Puerto Rican Americans (13.1%), followed by African Americans (9.5%), whites (7.2%), and Mexican Americans (3.6%)", it will hit communities of color worse[19].

2. Natural Disasters

Climate change drastically increases the incidence of natural disasters across the world. For instance, in the next 10 years, an increase in hurricanes and floods are expected along the Atlantic Coasts, and in the Southwestern portion of the US, increased aridity and changing weather patterns are due to increased droughts. These natural disasters often lead to health crises as hurricanes can cause lacerations, cuts, concussions, and even fractures. Increased water insecurity can lead to adverse mental health impacts such as GAD, depression, and an increase in suicide, especially in rural regions (Genee 2022). As the climate continues to change, more and more natural disasters will only increase the frequency of public health crises, both short and long-term.

In 2021, winter storm Uri hit Houston, Texas. Almost 50% of Texans lost access to power and

running water (Omolola 2021). Communities of color and low SES were hit the hardest, being the first to lose power. Due to poor infrastructure, higher levels of poverty, and higher percentage of their populations with a disability or lack of vehicle, African American communities in the Houston area were least equipped to recover from this disaster. This disparity in wealth stems from previously discussed practices such as redlining.

In addition, poorer communities, and communities of color, particularly AA communities, are more affected by environmental shocks due to lack of in-built support systems (Hallegatte 2017). It becomes difficult to support friends and family when individuals are struggling to keep themselves afloat, and this is often the case in these neighborhoods. This leads to less support from friends and family. This also leads to less preparedness in the event of natural disasters. Black and Hispanic individuals are less likely to have a 3-day supply of medications than non-Hispanic white individuals (Genee 2022). Stockpiling, access to evacuation, and protective home measures all necessitate disposable income and wealth.

In addition, policies following natural disasters fail to take into account wealth disparities and racial inequity. In the aftermath of Hurricane Katrina, slowed food transport, denial of business loans to primarily African American businesses, failure to repair levees, and delayed evacuation all contributed to a worse outcome for black residents of New Orleans than their white counterparts[23]. In addition, evacuees reported facing discrimination from police, volunteer staff, and support staff primarily due to their race, after facing one of the most traumatic experiences of their lives'[4]. Higher sensitivity and awareness of racial and class inequity is needed in order to properly shape policies following natural disasters. As communities of color face the worst of climate disasters, without adequate consideration and care, future weather events will plunge them into poverty and further inequity.

Solutions

1. Race and Policy

Incorporating race as an SDOH is one of the first steps to take in order to achieve racial equity in the healthcare system. In addition, de-funding low-quality care and developing alternatives to race-based algorithms is necessary[24]. Curricula need to teach those in the field that the structural racism present in the US (and other diverse nations), deeply impact how healthcare is distributed, the quality of care that is received by different patients based on race, and health outcomes. One proposition is to use the Transformative Racial Equity Framework in healthcare: "the framework is designed to help researchers understand how health inequity is embedded in multiple layers of society, including ideology, institutions, organizations, and individuals"[25].

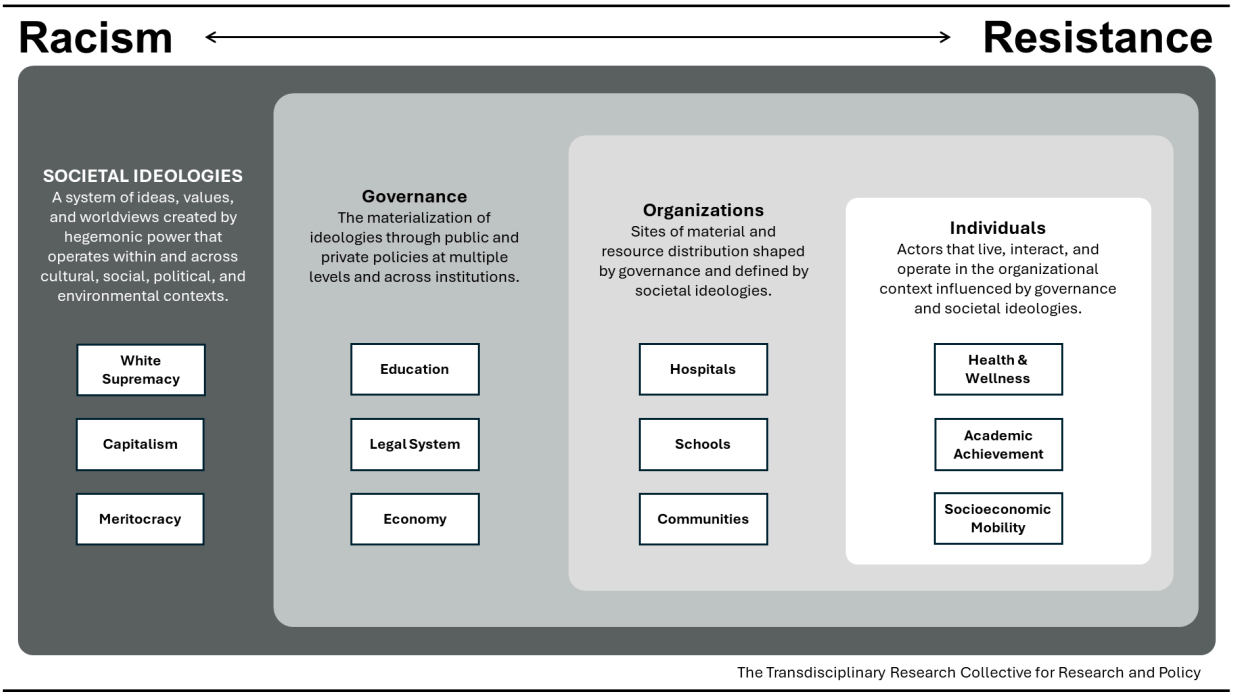

Fig. 1 Transformative Racial Equity Framework

Healthcare policies also need to change. Expanding ACA into the 10 states in the Southeast that have not chosen to do so would greatly help minority communities. Currently, the lack of Medicaid in these states leaves 1.9 low-income adults, who are primarily black, without any coverage. In addition, these adults usually have incomes higher than the limit for Medicaid but are still well below the poverty line[24]. Healthcare workers need to lobby their administrations to demand change within the system as advocates for their patients.

In addition, the physician shortage needs to be addressed. "The AAMC projects that by 2034, the U.S. will experience a physician shortage of up to 48,000 primary care physicians and 77,100 non-primary specialists. Such shortages, although concerning for all populations, have disproportionate impacts on Black, Hispanic, and indigenous populations, as well as those living in rural areas. Furthermore, the AAMC reports that if underserved populations had the same health care use patterns as populations with greater access to care, the nation would need an additional 184,000 physicians"[24]. This is not to say that students should be rushed into becoming physicians but rather that the barrier for becoming a physician should be lowered. The financial barrier for becoming a physician is extremely high, and not many are able to afford the costs of university and medical school and financially support themselves at the same time. This is especially true for BIPOC, who already lack representation within the medical field, and are in a position to educate medical professionals about the structural racism in the system. Without addressing this physician shortage, the healthcare industry will only continue to be a disservice to communities of color.

2. LQBTQ+ Support

As established previously, structural racism is not the only structural problem with the healthcare system when it comes to inequity in terms of care. LGBTQ+ individuals report poorer outcomes and less comfort when it comes to reaching out for medical assistance. Just as with racial justice, the approach to remedy this problem is multifaceted.

The CFMS (Canadian Federation of Medical Students) recommends a multi-pronged strategy. Governments need to fund and conduct more research into the state of LGBTQ access to healthcare, especially given the lack of information currently available. Medical communities and faculties need to incorporate LGBTQ states as a SDOH, promote advocacy, and spread awareness about LGBTQ issues[26]. Understanding how LGBTQ status affects an individual's access to healthcare, comfort with healthcare providers, and the common problems within the community is essential to providing quality care. Destigmatization is a big part of this solution, especially in less urban areas, where LGBTQ individuals (especially youth) may not have the support system needed to seek out healthcare or even make informed decisions. It should not be on the patient to make themselves comfortable with the current healthcare system, but rather it is up to the administrators, students, and healthcare providers to change the system to benefit the patient.

So, educating future healthcare professionals, such as current medical students, is essential. The LGBTQ Health Pathway at University of Washington School of Medicine (UWSOM) is a program that aims to offer in-depth education about the LGBTQ community, topics, and how to approach service and advocacy for this group[27]. In the 4th year of its running[27], 43 students were enrolled in this program, and the first graduating cohort consisted of 6 students. The program includes educational modules and a scholarly project revolving around a LGBTQ+ related topic. The program also mandates a clinical clerkship at LGBTQ specific health sites[27]. This program offers a chance for students from less urban areas in the WWAMI region to learn more about the LGBTQ community. As mentioned earlier LGBTQ individuals in rural or less urban areas feel more disconnected from support groups. Programs such as this program provide training to make physicians more capable of adequately supporting those in this marginalized community. The only qualm with this program would be that rather than being optional, some modules should be made mandatory for all students. The schools should be taking the incentive to teach this to every student, not just the few that demonstrate interest. Equal quality of care should be prioritized over student ‘interest.’

3. Carbon Emissions Within the System

The healthcare system is responsible for 10% of healthcare emissions within the US, primarily through transportation and production of goods (such as medication, supplies, etc.)[13]. As climate change continues to devastate entire communities, professionals in this field have an ethical responsibility to care for patients, and part of this now includes preventing further crises due to climate change. As the bulk of healthcare in the US is decentralized and private practice, it is up to individual schools, administrators, and professionals to advocate for change within the sector.

Currently, only 40% of state health department websites, and only 3.9% and 1.6% of country and city websites, respectively, contain information about climate change. Policies pertaining to climate change were only found in 20% (22 organizations) of private organizations within the US[28]. This starkly contrasts with medical professionals as 69% feel that their medical society should cut ties with fossil fuels, "including divestment from stocks and bonds". In addition, 60% of survey participants understood and affirmed that they believe that climate change will make health issues such as infectious disease, inflammation of chronic conditions, violence, conflict, displacement, etc. more frequent and severe in their respective countries[29]. Medical professionals clearly understand, or are beginning to understand the dire implications that climate change holds for the future of healthcare and patients. They are in a prime position to be able to launch public campaigns educating and pressuring policy makers about the health detriments of the climate crisis, given that they are among the most trusted sources of information regarding this topic[12]. Students are already taking the initiative by advocating for curriculum in schools to discuss climate change in a health context, with organizations such as AMSA, IFMSA, WHO, and the UNACCE creating courses and modules to educate medical students[30]. However, optional courses are not enough given the urgency with anything to do with climate change, so medical professors, doctors, and students need to pressure schools, hospitals, clinics, etc. to provide mandatory education about this subject. Climate change should be incorporated into SDOH, making it essential for healthcare workers to learn about and consider.

In addition, physicians, nurses, etc. can also use their trusted voices to educate the general public so they can lobby for change. Providing people with information about the adverse public health effects of climate change and solutions to address them can make people more likely to support and advocate for climate policies[29]. Healthcare workers can sound the alarm and generate public support for reducing emissions. Ragavan MD, argues that pediatricians should educate their patients and their parents about climate change, or at the very least bring it up in conversation to prompt interest in the subject. This is important as teaching children about the climate crisis and resulting health effects early can protect them and keep their parents/guardians aware of how it may affect them. 77% of US adults believe schools should teach children about climate change, so starting education in hospital visits may be desired by parents[13].

The main setbacks physicians face in advocating for public health and climate justice are time constraints (54%), lack of knowledge (41%), not believing they would make a difference (31%), little support (22%), and that the topic is controversial (16%)[26]. This is why educating physicians on the power they hold to influence the public, and educating them about the public health effects of the climate crisis is so important. In addition, structural support and policies that target emissions can lend support to advocates.

It is important to note that calling on healthcare to educate the public, is so they are able to advocate for policies as well. Just spreading awareness isn't enough. Infrastructure change was the most effective in terms of preventing a rise in infectious disease rates, while raising community awareness or individual behavior had virtually no effect[1]. This is a systemic problem that requires vast policy implementation and consideration of those most affected.

Conclusion

In conclusion, the intersection of systemic healthcare disparities stemming from historical racism and the heightened vulnerability posed by the climate crisis necessitates intervention. It is important to address the structural injustices ingrained in healthcare and align them with adaptive strategies tackling the public crises that can be attributed to climate change. Policy makers need to understand that oftentimes, marginalized communities bear the brunt of poor policy making, and they are currently the ones most impacted by both climate change and the injustices present in the healthcare system. Uplifting voices from these communities and involving them in policy making is very important. As mentioned previously, awareness and individual action simply isn't enough. Advocating for policies that affect entire communities helps bring real change to the public health disasters that climate change is causing.

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