


Climate Justice in the Barrios: A Chronically Neglected Topic for the Most Climate-Vulnerable Communities in the U.S.

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ABSTRACT

Climate justice is a critical concept that focuses on efforts addressing the disproportionate impacts of climate change on systematically disadvantaged populations. In this review, we provide an overview of current national climate justice topics important to the Hispanic community. Key aspects include disproportionate environmental burdens, vulnerability to extreme weather events, economic and labor inequalities, limited access to resources, engagement and representation, and the inequitable transition to a sustainable and low-carbon economy. Current US federal public legislation, policies and initiatives in the United States aimed at addressing climate justice in Hispanic communities are discussed. These policies serve as examples of efforts to address climate justice in the Hispanic community, but it is acknowledged that policies may have evolved since this publication.

The review seeks to highlight the need to further policies and best practices that specifically address unique challenges faced by Hispanic communities in relation to climate change. Recommendations include expanding climate justice initiatives, targeting clean energy infrastructure and investments in disproportionately affected communities, increasing community engagement and participation in decision-making processes as well as developing equitable climate adaptation and resilience strategies. In addition, funding allocation should be appropriate for short and long-term research and monitoring, promoting green workforce development and job opportunities, ensuring equitable access to clean energy, and enhancing climate education and awareness.

Overall, this review underscores the importance of incorporating climate justice principles into health care policies to achieve equitable and just outcomes that target Hispanic communities disproportionately affected by climate change.

Keywords: *Climate Justice, Air quality, Hispanic Health, Climate Change, Climate Justice policy, Built environment*

1. Introduction

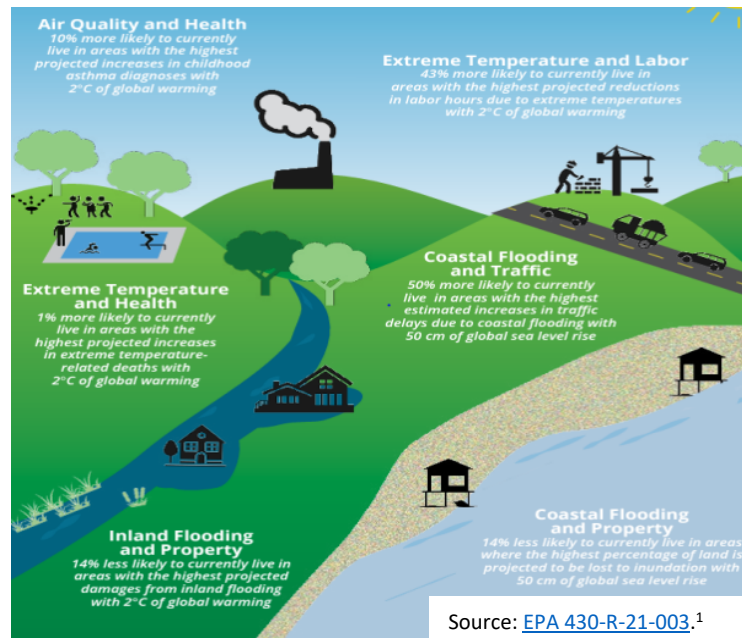
Climate justice is an important concept that addresses the disproportionate impacts of climate change on systematically disadvantaged populations¹ including Hispanic communities in the barrios (historically impoverished Spanish-speaking communities in U.S. urban areas)

Climate change refers to the long-term changes in the usual weather patterns of a given region, resulting in severe weather events that have become more frequent, more intense, and longer in duration.² Climate justice has been used to describe a wide range of legal and policy approaches to addressing climate change.

Over half of the United States Hispanic population resides in states with a high degree of climate change threats, such as air pollution, extreme heat, and flooding (Figure 1).³ In addition to lacking resources, Hispanic communities experience systematic exclusion from participating in decision-making processes that build climate resilience. Research indicates that Hispanics have heightened perceptions of vulnerability and support climate policy^{4,5} but lack inclusive opportunities

for collective action, advocacy, and education. For example, disproportionate burdens of air pollution can lead to adverse health outcomes across the age spectrum.⁶ Despite improvements in air quality over the past decades, important socioeconomic and racial disparities in air pollution exposure exist and poor air quality exposure is uneven across racial and ethnic groups.⁷

Figure 1. Disproportionate Risks of Climate Change to Hispanics



Particulate matter (PM) is a mixture of air pollutants originating directly or indirectly from sources that include traffic emissions, coal-fired power plants, oil and gas equipment, cars, trucks, poorly ventilated wood-burning stoves, and forest fires. It is classified according to its aerodynamic diameter size and is a common indicator of air pollution.⁸ Particulate matter refers to tiny airborne particles with those < 10 microns (PM₁₀) penetrating deep into the airways and particles ≤ 2.5 microns (PM_{2.5}) posing the greatest risk to health as they not only penetrate into the alveoli, but can be internalized into the airway epithelium and bloodstream. PM exposure can lead to cardiorespiratory disease, increase risks of neurologic conditions, and chronic kidney disease, and result in poor birth outcomes. Asian American, Pacific Islanders, Black non-Hispanic, and Hispanic individuals are more likely to reside in counties unable to meet the air quality standards for PM_{2.5} and ozone compared to non-Hispanic white individuals.⁹ Hispanics suffer high rates of chronic and developmental health conditions such as diabetes, heart disease, asthma, low birth weight, and prematurity that can be exacerbated by living in environmental justice areas with high levels of air pollution. In addition, lack of health care access, psychosocial stress, apprehension to access government services, and lack of culturally and linguistically competent health information can compound the health effects of air pollution.

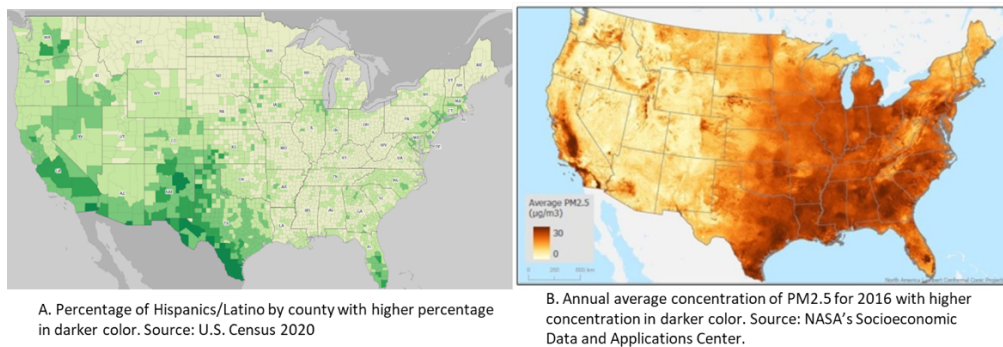
We aim to examine the intersectionality of climate justice in the Hispanic community to identify the unique challenges faced by the Hispanic population and the need for inclusive solutions. We also explore the role of policy and governance in addressing climate justice for Hispanics and best practices and strategies for achieving climate justice in this group.

Key aspects of climate justice in the Hispanic community

- a) Disproportionate air pollution burdens: Hispanic communities often bear the brunt of environmental burdens, such as exposure to air and water pollution, hazardous waste sites, and industrial facilities. The Clean Air Act passed in 1963, for example, requires the Environmental Protection Agency (EPA) to set and monitor National Ambient Air Quality Standards (NAAQS) for six common air pollutants including ozone and particulate matter known to contribute to adverse health effects.¹⁰ Although mean national levels of pollutants have fallen by 70% in the last decade,¹¹ there is still concern that ongoing current standards are too high to prevent serious health

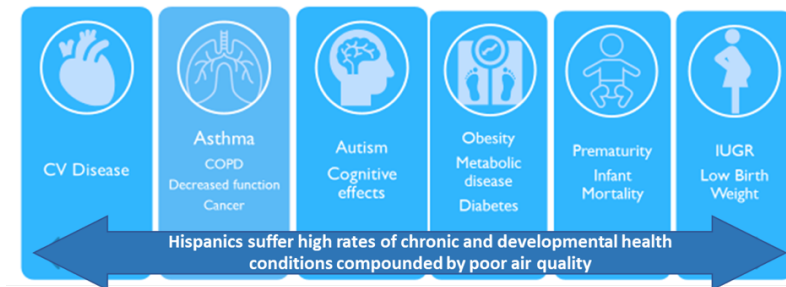
problems in portions of the population.¹² Particulate matter (PM) affects more people than any other pollutant and serves as common proxy for air pollution with PM_{2.5} posing the highest risk to adverse health effects. Poor air quality exposure is uneven across racial and ethnic groups including Hispanics.⁷ In fact, Asian American, Pacific Islanders, Black non-Hispanic, and Hispanic individuals are more likely to reside in counties unable to meet the air quality standards for PM_{2.5} and ozone compared to non-Hispanic white individuals.⁹ Figure 2. Redlining has been associated with disparities in intraurban air pollution against people of color including Hispanic and black populations.¹³

Figure 2. Latino communities are often located in areas with high concentrations of PM_{2.5}



Specific factors to Hispanic communities include lack to health care access, psychosocial stress, apprehension to access government services and lack of culturally and linguistically competent health information which compound the health effects of air pollution. These burdens contribute to adverse health outcomes and exacerbate existing disparities (Figure 3).

Figure 3. Air Pollutants including ozone and particulate matter contribute to adverse health effects.



- b) Vulnerability to extreme weather events: Hispanics are often disproportionately affected by extreme weather events like hurricanes, floods, and heatwaves.¹ Factors such as limited access to adequate housing, healthcare, and emergency services increase their vulnerability and hinder their ability to recover from climate-related disasters (Figure 1).
- c) Economic and labor inequalities: Many Hispanics work in industries that are highly exposed to climate risks, such as agriculture, construction, outdoor labor, and recreation. Climate change impacts, such as droughts, heat stress, and sea-level rise, can lead to job losses, reduced incomes, and economic instability within the community.
- d) Limited access to resources: Access to resources like clean air, clean water, and green spaces is crucial for a healthy and resilient community. The built environment is also important including access to outdoor spaces and activities in Hispanic communities that elevate the culture particularly during events of high air pollution.

However, some Hispanic communities face barriers to accessing these resources due to systemic factors such as racial segregation, discriminatory policies, and inadequate infrastructure. Namely, disparities in time spent outdoors, housing conditions and work environments lead to disproportionate exposure of air pollutants for certain racial and ethnic groups.

- e) Engagement, education, and representation: Ensuring the meaningful participation and representation of the Hispanic community in decision-making processes related to climate change is essential. This includes involving community members in developing climate policies, strategies, and adaptation plans, as well as creating platforms for their voices to be heard. In addition, impact can be amplified by increasing representation in government and leadership positions in committees that address climate change and air pollution.

Hispanics do not have equal access to information on climate change or resources for mitigation and protective measures. A large proportion of Hispanics support efforts promoting renewable energy, air pollution regulation and policies that broaden access to energy efficient vehicles and solar panels. Moreover, Hispanics consume products from companies with commitment to global warming reduction and are willing to vote for representatives with strong positions against climate change. However, fewer than half hear about global warming regularly in the media or get contacted by organizations working against climate change.^{4,5} Many consumers at high risk for detrimental health effects are frequently unaware or are unsure how to access publicly available educational tools that provide valuable information on environmental exposures including EPA's real time air quality database, AirNow.gov.¹⁴

- f) Just transition and sustainable development: Climate justice in the Hispanic community involves promoting a just transition to a sustainable and low-carbon economy. This includes providing training and job opportunities in renewable energy and other green sectors, as well as supporting community-led initiatives that promote sustainable development and resilience.

2. Current policies addressing climate justice in Hispanic communities in the US.

Heightened awareness of environmental disparities has led to federal and local legislation, policies and initiatives aimed to address climate justice in Hispanic communities. The following examples highlight governmental and community actions focusing on climate justice.

Federal Legislation addressing reduction and mitigation of air pollution

Three major pieces of legislation passed within the past two years make strides in addressing climate change. These legislative actions fund efforts to modernize air, rail, and vehicle public transportation with cleaner-fueled and greener vehicles to further reduce greenhouse gases and curtail or mitigate the effects of climate change. In addition, efforts at the local and state levels continue to gain momentum in moving forward the climate justice agenda. It's important to note that policies may have evolved, or new policies may have been implemented since this publication.

The American Rescue Plan (P.L. 117-2)¹⁵ expanded funding for clean mass transportation. More recently, billions of dollars were assigned to fund the Infrastructure Investment and Jobs Act Law (P.L.117-58)¹⁶ and the Inflation Reduction Act (P.L. 117-169).¹⁷ P.L.117-58 invests in correcting legacy pollution among communities of color. In addition, P.L. 117-58 in conjunction with P.L. 117-169, incentivizes building of a clean energy infrastructure, expanding electric vehicle networks, and reducing pollution at the nation's ports. These legislative actions aim to modernize air, rail, and vehicle public transportation with cleaner-fueled and greener vehicles to further reduce greenhouse gases to curtail and mitigate the effects of climate change.

Federal programs have tried to reduce or mitigate the effects of climate change and air pollution, but not all have been successful. The Clean Power Plan and Affordable Clean Energy initiative by President Obama's administration in 2015 and the less stringent Trump era Affordable Clean Energy Rule, provided air quality guidelines for existing power plants aimed to reduce carbon pollution as a transition from fossil fuel dependence. However, both measures were repealed by the courts.

Executive action on Environmental Justice and Air Quality

The Federal Interagency Committee on Indoor Air Quality established by Congress in 1983, coordinates federal efforts of multiple agencies on indoor air quality research and facilitates sharing of information from federal agencies to local governments, the research community, private sector, and the public.

In January 2021, President Joe Biden signed an executive order directing federal agencies to prioritize addressing environmental justice, which includes climate justice. This order aims to address the disproportionate impacts of pollution and climate change on the marginalized, including Hispanic communities, and promote equitable decision-making processes. The Justice 40 Initiative¹⁸ ensures that federal agencies deliver 40 percent of the overall benefits of climate, clean energy, affordable and sustainable housing, clean water, and other investments to disadvantaged communities. Covered programs would include those reducing local air pollutants, the effects of urban heat islands and transportation related emissions. Additional goals include improving indoor air quality and expanding availability and access to green housing.

The recent passing of the Inflation Reduction Act aims to improve affordability of energy efficient appliances and green construction by providing tax credits to families that would most benefit from tax relief. Other initiatives will in turn have a narrow focus on communities that are disproportionately affected by the effects of climate change including air pollution. An Environmental Justice Block Grants program plans to address pollution in coastal and port communities which are significantly affected by air pollutants. Several strategies target extreme heat exposure including tree planting projects sponsored by the USDA's Urban and Community Forestry Program and the US Department of Transportation's Neighborhood Access and Equity Grants.

The Department of Housing and Urban Development (HUD) Section 108 funds economic and physical development such as housing, public facilities, infrastructure, including improvements to increase resilience against natural disasters and climate change. From building of a flood protection wall featuring a riverwalk and community park in Mount Vernon, WA to supporting the creation of the largest urban production greenhouse of lettuce and greens in Cleveland, OH, federal HUD Section 108 funds offer the potential to mitigate climate change while addressing the needs of local communities. (reference: <https://www.hudexchange.info/programs/section-108/project-profiles/>)

Health and Human Services (HHS) agencies also offer a variety of programs directed at addressing the health effects of climate change. HHS programs could contribute to green construction and air pollution mitigation. Through the Federal Real Property Assistance Program, surplus property can be transferred to eligible organizations for public health and homeless assistance. Uses include homeless shelters, transitional and permanent housing. The CDC's Climate and Health Program developed the Building Resiliency Against Climate Effects Framework (BRACE) which provides guidance to local and state health officials for developing strategies directed to assist communities to prepare for the health effects of climate change. However, recent analysis of the BRACE tool identified gaps and nuances that limited its use. The program now aims to revise the framework including having public health departments create community partnerships with organizations who represent populations vulnerable to climate change.¹⁹ Although narrow in scope, current Medicare and Medicaid waivers for patients preferring home or community-based services can cover home cooling and air filtering devices. Starting in 2024, Oregon Medicaid plans to cover climate change related expenses including air conditioners and filters for members with certain health conditions that live in high-risk areas for extreme weather such as air pollution from wildfires and extreme heat.²⁰

Climate Action Plans and interventions at the State Level

Several states have developed climate action plans that explicitly address air pollution and improved air quality in the setting of climate justice and equity. For example, California's Climate Change Scoping Plan includes strategies to reduce greenhouse gas emissions and improve air quality in disadvantaged communities, which often includes significant Hispanic populations. New York's Climate Leadership and Community Protection Act aims to transition the state to a carbon-neutral economy while prioritizing investment and resources in disadvantaged communities, including Hispanic communities. Data from the Healthy Air, Healthy Schools Project at the University of Washington found that ultrafine air pollution particles from road and aircraft traffic infiltrate schools. Use of HEPA air purifiers significantly improved classroom air quality.²¹

Just Transition Programs

Just transition programs seek to support communities and workers affected by the transition to a low-carbon economy. Some states and cities have established programs to provide job training, economic development, and support for workers in industries affected by the shift away from fossil fuels. These programs often include a focus on communities of color, including Hispanic communities. Promise for green job opportunities comes from the National Institute of Environmental Health Sciences (NIEHS)'s Environmental Career Worker Training Program. Also, the Administration for Children & Families office's Community Service Block Grants fund comprehensive training to disadvantaged and underrepresented workers in areas such as environmental restoration, construction, hazardous materials/waste handling, and emergency response.

Climate and Environmental Justice Advisory Groups

Some states and local governments have established advisory groups or task forces to ensure that climate and environmental policies consider the needs and perspectives of communities most impacted by climate change. These groups often include representatives from diverse communities, including the Hispanic community, to provide input and guidance on policy decisions. Local, regional and organizations addressing climate change and air quality are leading reproducible innovative interventions to improve indoor air quality.

Community-Based Climate Resilience Initiatives

The recently created Office of Climate Change and Health Equity prioritizes the identification of vulnerable communities as well as private and non-profit sector partnerships to foster innovation in climate adaptation and resilience. Nonprofit organizations, community groups, and grassroots initiatives have emerged to address climate justice at the local level. These initiatives often focus on building community resilience, promoting renewable energy, improving air quality, and advocating for policy changes that benefit marginalized communities, including the Hispanic community. For example, the EPA Grants and Assistance Agreements initiative empowers communities by supporting a range of local and state partners that raise residents' awareness about air pollutants and climate stressors. In addition, the EPA now provides funding to local school districts to replace school buses with low or zero emission models through its Clean School Bus Program. Initial Clean School Bus awards in 2022 provided over \$900 million in rebates to replace nearly 2,500 buses to lower emission models.²²

3. Policy and Best Practices Recommendations

Identifying best practices and strategies for achieving climate justice in the Hispanic community: This objective involves synthesizing and analyzing successful strategies, programs, and policies that have been implemented to address climate justice in the Hispanic community. It aims to identify best practices that can guide future actions and interventions for achieving equitable and just outcomes.

- a) **Climate Justice Policies and Funding:** Governments should allocate sufficient funding to support climate justice initiatives that explicitly address the unique challenges faced by Hispanic communities in relation to climate change. This includes dedicated funding streams for community-led projects, capacity-building programs, and research efforts focused on addressing climate change impacts and promoting resilience. Policies should prioritize improvements that promote equitable access to clean air, water, and a healthy environment, while considering the social and economic factors that contribute to vulnerability. Hispanic
- b) **Increase Community Engagement and Participation:** Policymakers should ensure the meaningful participation and representation of Hispanic communities in climate-related decision-making processes. This can be achieved through community engagement initiatives, public consultations, and partnerships with community-based organizations. Providing language access at every level and structure of government is one crucial component for Hispanics to be included in decision-making processes. Meaningful engagement allows for the inclusion of diverse perspectives, knowledge, and needs in policy development and implementation. Policymakers and organizations should ensure that information, resources, and services related to climate change and climate justice are accessible and available in languages spoken by Hispanic communities. This includes providing language interpretation, translation services, and culturally appropriate materials to ensure effective communication and engagement.

- c) **Equitable Climate Adaptation and Resilience Strategies:** Climate adaptation and resilience plans should be developed with a focus on addressing the specific vulnerabilities of Hispanic communities. This includes investing in infrastructure improvements, ensuring access to reliable and affordable clean energy, enhancing disaster preparedness and response, and supporting the preservation of cultural heritage and community cohesion. Examples to consider include provision of assistance to and resettling of climate refugees and well as broadening Medicaid and Medicare waivers and coverage for mitigation strategies such as cooling and air filtration systems for high-risk patients (e.g., patients with cardiovascular and respiratory disease, pregnant women and children).
- d) **Green Workforce Development and Job Opportunities:** Policies should prioritize the creation of green jobs and provide training and education opportunities in renewable energy, energy efficiency, and other environmentally sustainable sectors. This supports economic empowerment and ensures that Hispanic communities can participate in and benefit from the transition to a low-carbon economy. Hispanic leaders should support legislation and policies that result in green job skills training including Hispanics and incentivize green businesses that will contribute to improvements in environmental quality and lead to a healthier Hispanic workforce.
- e) **Equitable Access to Clean Energy:** Policies should promote equitable access to clean and affordable energy, such as solar and wind power, in Hispanic communities. This can be achieved through programs that provide financial incentives, grants, or low-interest loans for the installation of renewable energy systems, particularly in low-income neighborhoods. Expansion of educational programs through the EPA Environmental Education Grants for communities and residents in environmental justice areas with large Hispanic populations exposed to poor air quality.
- f) **Climate Education and Awareness:** Governments, schools, and community organizations should prioritize climate education and awareness campaigns targeted at Hispanic communities. Culturally relevant education programs can empower community members with the knowledge and skills to understand climate change, its impacts, and solutions, fostering informed decision-making and action. Health related agencies should focus resources on addressing air pollution related health hazards in vulnerable populations such as Hispanics. Widespread use of social and broadcast media can be used to educate Hispanics on air pollution related health risks and resources like Air Quality Index (AQI) to identify hazards and reduce exposures.
- g) **Collaborative Partnerships:** Policymakers should foster partnerships between government agencies, nonprofit and community-based organizations and academic institutions to jointly address, research and find solutions to climate justice in Hispanic communities. Collaboration enhances the effectiveness of initiatives, enables resource sharing, and promotes the exchange of best practices and lessons learned.
- h) **Data Collection and Disaggregation:** Governments and research institutions should collect and analyze climate and environmental data specifically related to Hispanic communities. This disaggregated data helps identify disparities, understand the unique challenges faced by Hispanics, and guide evidence-based policy-making and targeted interventions.

Conclusion

To address climate justice in the Hispanic community, it is important to consider intersectionality and work towards public policy solutions that address both climate change and the underlying social, economic, and political factors that contribute to inequality. This can be achieved through policy changes, community organizing, education, advocacy, and collaboration with diverse stakeholders.

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