

## Article

# COVID-19, Housing, and Environmental Injustice

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**Abstract:** In the United States, there has been a long history of environmental injustice that disproportionately affects racial and ethnic minorities and low-income communities due to racially targeted policies and widespread discrimination. Environmental racism can be revealed in housing discrimination that perpetuates inequities in exposure to environmental pollutants. Biased credit and mortgaging practices such as redlining have led to housing segregation of racial and ethnic minorities in the USA, permitting policymakers to diminish and disinvest in these communities. The COVID-19 pandemic has amplified housing instability for families of color, including Black and Hispanic/Latinx communities, putting them at increased risk for COVID-19 exposure. There is a need to investigate how environmental injustice intensifies the COVID-19 pandemic, illuminates racial and ethnic inequities in exposure to environmental contaminants, and fuels disparities in COVID-19 outcomes. The aims of this paper are to analyze and discuss environmental injustice and racial and ethnic disparities related to COVID-19 and housing. We also propose recommendations to address this pervasive issue.

**Keywords:** COVID-19; housing; environmental injustice; environmental racism; eviction; public health; health disparities; social determinants of health; health equity; environmental health



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## 1. Introduction or History

COVID-19, a pandemic of lower respiratory tract disease, has beset the world, resulted in a high number of infected individuals and deaths worldwide, and presented an international public health emergency [1–3]. Guidelines issued by the Centers for Disease Control and Prevention (CDC) to prevent the spread of COVID-19 include eligible individuals receiving vaccinations and staying up to date with their COVID-19 vaccines. For unvaccinated individuals, COVID-19 prevention actions include handwashing with soap and water, staying home if one has suspected or confirmed COVID-19, improving ventilation, increasing air filtration, following CDC recommendations if exposed to the virus (e.g., wearing a high-quality mask at home or indoors when in public, isolating immediately if developing symptoms, testing, and monitoring symptoms), avoiding contact with individuals who have suspected or confirmed COVID-19, and being tested for COVID-19 if needed [4]. In addition, United States (U.S.) data reveal that racial and ethnic minority groups have endured a disproportionate burden of COVID-19-associated outcomes [5]. Black or African Americans, Hispanic or Latinx persons, and non-Hispanic American Indian or Alaska Native persons are more likely to become sick with, be hospitalized for, and die from COVID-19 compared to non-Hispanic Whites [5]. Even with growing supply and increases in COVID-19 vaccination rates across racial and ethnic groups, structural barriers thwart vaccine access for these groups [6]. Disparities also exist in access to COVID-19 treatments and uptake of booster shots among Black and Hispanic children and in health and economic tolls among racial minority and immigrant communities [7].

While predisposition to pre-existing health conditions such as high blood pressure, diabetes, and asthma are factors, systemic barriers such as the likelihood of being uninsured,

decreased access to affordable medical testing, diagnosis, and treatment; food insecurity; work-related exposures; and housing insecurity have contributed to racial and ethnic disparities in COVID-19 outcomes [8]. Many of these underlying health conditions develop from exposure to environmental contaminants. Consequently, the established risk factors for COVID-19 complications need to be evaluated as they relate to the context of environmental toxins and the adverse social determinants of health that place racial and ethnic minority communities at increased risk for disease and mortality. The main categories of social determinants of health that contribute to racial and ethnic disparities in COVID-19 outcomes include neighborhood and physical environment (e.g., quality of housing and access to healthy foods), health and healthcare, economic stability (e.g., employment, housing instability, job conditions), and education [9]. Discrimination, including racism and chronic stress, influences these critical topic areas [10]. Moreover, historical racial residential segregation in the USA shaped by institutional racism, including unfair housing policies, can be linked to present-day racial disparities in COVID-19 infections and deaths, due to inequitable exposures to environmental pollutants influenced by discriminative historical practices [11]. This entry investigates how environmental injustice reflected in unstable housing fuels racial and ethnic disparities in COVID-19 outcomes. We also propose recommendations to address this pervasive issue.

## 2. Social Determinants of Health

Social Determinants of Health (SDOH) are described as “conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks” [12]. Issues such as air and water pollution, literacy skills, education level, job opportunities, income, discrimination, violence, and racism are all factors that contribute to health disparities and inequalities that derive from adverse outcomes of the SDOH [12]. Research shows that social determinants of health are a more significant contributor than health care or lifestyle choices in influencing health [13]. In all countries at all income levels, the worse the socioeconomic position, the worse the health of that community, as health and illness tend to follow a social gradient [13]. Not only is health a fundamental right, but the inability to overcome inequalities will result in more health disparities. That is why now more than ever, it is essential to reduce health inequities [14]. Health inequities are gaining increasing national and international attention due to only a few countries being able to reduce them systematically. The COVID-19 pandemic has highlighted racial–ethnic disparities related to housing, environmental racism, and many other factors that impact health [15].

## 3. Terminology

Environmental racism is defined as “any policy, practice or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups or communities based on race or color. It combines with public policies and industry practices to provide benefits for corporations while shifting costs to people of color” [16]. Environmental racism could be reinforced by the military, government, legal, economic, and political institutions which can influence local land use where people of color work, live, and play. Placing the blame on the victim rather than the polluter, legalizing human exposure to harmful chemicals, promoting the use of hazardous technology in vulnerable communities, and unequal enforcement of human health for profit have led to the institutionalization of environmental racism [16]. Over many years, inequitable policies and practices have led to communities of color being disproportionately burdened by toxic waste, polluting facilities, landfills, and chemical plants constituted by environmental racism. These forms of environmental racism have been seen more repeatedly within communities of color that live in substandard housing, placing them at increased risk for environmental hazards [17]. A list of relevant terminology and definitions related to environmental health inequities can be seen in Table 1.

**Table 1.** Terminology and definitions.

Health Inequities	The systematic differences in the health status of different population groups. These inequities have significant social and economic costs both to individuals and societies [18].
Environmental Health Disparities	When communities exposed to a combination of poor environmental quality and social inequities have more sickness and disease than wealthier, less polluted communities [19].
Environmental Equity	A country, or world, in which no single group or community faces disadvantages in dealing with environmental hazards, disasters, or pollution. Ideally, no one should need extreme wealth or political connections to protect the well-being of their families and communities. Environmental equity is a basic human right [20].
Environmental Justice	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies [21].

## 4. Challenges

### 4.1. Racial Discrimination in Housing

In the United States, ongoing discriminatory, racially targeted public policies have systematically displaced racial and ethnic minority groups. Examples of this are biased credit and mortgaging practices such as redlining. According to the New York Times, redlining is defined as racial discrimination of any kind as it relates to housing. It stems from government maps that outlined districts where people of color lived and were therefore regarded as risky investments [22]. This caused many real estate agents to direct Black homebuyers and renters away from buying homes in predominantly White neighborhoods, alternately isolating Black families from integrated neighborhoods and placing them into racially segregated neighborhoods [22]. To influence these decisions, private bank lenders use racial discrimination tactics to deny Black homes from qualifying mortgage loans, such as government map lines [22]. Racial segregation in the environment within communities of color still shows its lingering effects to this day. Areas that faced racial segregation have dealt with increased health inequities related to education, housing conditions, inequities to transportation infrastructure, access to health care, and increased risk of COVID-19 exposure due to physical, economic, and social conditions linked with redlining [23].

### 4.2. Lack of Affordable Housing and Exploitation by Landlords

Another challenge that is faced in the U.S. is the issue of affordable housing. Due to decades of structural racism, there are vast racial disparities in housing that persist until today. Data from the National Low Income Housing Coalition show that Black, Native American, and Hispanic households are more likely to be extremely low-income renters when compared to White households and are more likely to struggle to pay rent and find affordable, accessible, and suitable than their White counterparts [24]. Data shows that 27% of Black households are extremely low-income renters compared to 6 percent of White households [25]. Low-income renters are individuals who earn less than 50% of their area medium income, and extremely low-income renters are those who earn less than 30% of their area medium income [26]. Low-income renters are more likely to struggle to afford rent and are at increased risk of negative health outcomes such as poorer health, food insecurity, low academic achievement, and substandard housing conditions [25].

Many low-income renters of color face exploitation by their landlords and are being forced to live in substandard housing conditions. According to The State Housing Laws and the Uniform Housing Code, substandard housing is defined as “any condition which exists to the extent that it endangers the life, limb, property, safety or welfare of the occupants

or general public” [27]. A prime example of this is the Church Street South Complex, which was located in New Haven, Connecticut. The building was constructed in 1969 and had 301 units, housing roughly 1000 low-income adults and children. For 50 years, the apartment complex had deteriorated due to years of poor maintenance [28]. A study done by Yale’s Occupational and Environmental Medicine Program contained information on 268 residents who lived in 118 apartments at the Church Street South complex from 2008 through 2015. Of the 170 children surveyed, they found that 48% had physician-diagnosed asthma. Of the 118 residents, 93% reported that their apartments had visible mold, and 85% had water intrusion or leaks [28]. The study found that of 170 children, 48% had physician-diagnosed asthma, and 98% of them experienced onset or worsening asthma conditions while at Church Street South. However, 66% of the 104 children who lived in the Church Street South complex had improved physician-diagnosed asthma and/or respiratory conditions after leaving the complex [28].

The COVID-19 pandemic has aggravated racial and ethnic disparities in housing instability [29–31]. One national, longitudinal study of more than 23,000 participants found that Black and Hispanic respondents were more susceptible to housing-related hardships during the pandemic compared to White respondents. Moreover, Black respondents reported the lowest liquid assets compared to other racial and ethnic groups and reported half the liquid assets of White respondents [29]. Studies using nationally representative data have shown that Black and Hispanic households were more likely to lose income during the pandemic, increasing the likelihood of experiencing housing instability [32]. During the pandemic, Black residents were also 1.9 times as likely to be behind on housing payments, 1.8 times as likely to be delinquent on utility bill payments, and 1.7 times as likely to be forced to move when compared to white respondents [29].

#### *4.3. Inequitable Exposure to Environmental and Occupational Hazards*

Environmental and occupational hazards disproportionately impact communities of color leading to inequities in exposure to environmental pollutants. Communities of color are more likely to be exposed to higher levels of particulate matter—fine inhalable particles like dust and soot due to living close to burning fossil fuels at a percentage 50% more than Whites [33]. The microscopic particles found in soot can cause adverse health effects due to the microscopic particles that can penetrate deep into the lungs, skin, and eyes [34]. This can cause asthma, bronchitis, coronary heart disease, premature death, heart attacks, strokes, and aggravated asthma among children [34].

Black Americans are more likely to live in older urban homes, increasing their risk of higher concentrations of indoor contaminants such as mold exposure [35]. Indoor exposure to mold and moisture is linked to and may cause various symptoms such as stuffy nose, wheezing, red or itchy eyes, or skin. Other people may experience more severe symptoms, such as asthma and other upper respiratory infections [36,37]. Houses with insignificant ventilation, poorly sealed walls, and flooding can lead to mold and moisture. Poor bathroom ventilation has also been shown to lead to increased mold and moisture. Most of these issues are found in older buildings needing renovation, which are the same houses that racial and ethnic minority groups are more likely to live in [35].

Another environmental and occupational hazard that disproportionately impacts communities of color is indoor allergens and microbial exposure. Indoor allergens and microbial exposures such as pest allergens such as mice, rats, and cockroaches have been identified to contribute to pediatric urban asthma in low-income children living in urban homes [37]. In the National Cooperative Inner-City Asthma Study, the results showed that in the United States, mouse allergen had been found in 95% of home dust samples inside inner-city homes [38]. There was an even higher rate when houses with mouse allergen had a simultaneous cockroach infestation [38]. In addition, according to the Third National Health and Nutrition Examination Survey, Black Americans were four times more likely to be sensitized to cockroaches than Whites, demonstrating inequitable housing conditions among races [39].

#### 4.4. Eviction and Multigenerational Poverty

The COVID-19 pandemic has given way to devastating job loss, unrivaled unemployment rates, subsequent increased risk of eviction, economic hardship in renter households, and precarious housing all among racial and ethnic minority groups and low-income households [40]. Historical and present tendency data show that people of color are more likely to face eviction during pandemics, fueling health inequities. Studies have shown that Black renters have faced the highest eviction rates before COVID-19 and noticeable racial disparity [41,42]. Studies have also shown that eviction can lead to an increased infection rate for COVID-19 as it leads to overcrowded living environments, homelessness, transient living conditions, reduced access to healthcare, sleeping outdoors or in cars, and leading to the sharing of accommodations designed for fewer people [43]. These same factors could also reduce the ability to adhere to COVID-19 mitigation strategies (e.g., hygiene practices like handwashing, social distancing, and self-quarantine) [43]. Overcrowding can increase the risk of respiratory illness and influenza and comorbidities like diabetes and high blood pressure, increasing vulnerability to severe or fatal cases of COVID-19 [44]. Eviction may also lead to reduced access to COVID-19 testing and a reduced likelihood that infected individuals would seek timely medical care that could decrease community transmission [45]. The threat of eviction can also have negative health effects such as an increased likelihood of being hospitalized for a mental health condition [45]. Furthermore, eviction is a stressful life event that can have enduring negative health effects and promote a cycle of multigenerational poverty [46].

Pre-pandemic, over 70% of Black and Latinx adults reported not having adequate emergency funds to pay for three months of expenses. Being evicted during COVID-19 added to fuel this inequality; meanwhile, only half of the White adults reported having this issue [47]. Lacking the privilege of being able to afford an emergency savings alongside an emergency or loss of employment can give way to greater economic hardship and an unstable housing environment. This can influence a person's ability to pay rent during a pandemic and affect their ability to treat any complications that can occur from COVID-19 [40]. Before COVID-19, 1 in 5 Black female renters reported experiencing conviction compared with 1 in 12 Hispanic or Latinx women and 1/15 White women [48]. Black women renters experienced eviction filings at double the rate of White renters in 17 out of 36 U.S. states studied [49]. These data emphasize the disproportionate health inequity fueled by the risk of housing loss occurring during the pandemic.

### 5. Recommendations

To address the increased risk of COVID-19 among racial and ethnic minorities due to environmental racism, we require strategic measures. These include expanding and extending policies and programs, prioritizing community partnerships in pandemic response, increasing funding, removing barriers to obtaining temporary and long-term housing, and promoting affordable housing. Undertaking these steps can help promote environmental health equity.

#### 5.1. Emphasize Community Partnerships in Pandemic Response

To tackle environmental racism and bridge the health equity gap, it is essential to encourage constant cooperation among various communities and sectors. This will facilitate the institutionalization of health equity goals. Additionally, consistent data collection to evaluate racial disparities in health can lay the groundwork for political initiatives and accountability regarding the social determinants of health. Ultimately, this will support the promotion of health equity [50]. Attention to the cumulative effects of environmental toxins in the context of social determinants, political factors, and policy decisions affecting health can guide the enactment of sustainable approaches while also improving the environmental health literacy of a community. When researchers involve affected community members, this can empower residents rather than discourage and disenfranchise them [51]. Meaningful community partnerships must be prioritized, resourced, and maintained to ensure more



equitable feedback [52]. Researchers must recognize that historical educational inequities cause the underrepresentation of minority groups in environmental health research, so they should create authentic community connections [51]. Accordingly, strategies are needed to cultivate community engagement among stakeholders of racial and ethnic health.

### *5.2. Extend Protections for Renters against the Threat of Eviction*

The aftermath of COVID-19 will pose ongoing recovery challenges for numerous individuals and families. To combat the spread of the virus, the CDC implemented a federal eviction moratorium in September 2020, which prevented most evictions for non-payment of rent. Unfortunately, the U.S. Supreme Court overturned this moratorium in August 2021, leaving many households—particularly communities of color—vulnerable to eviction and without secure housing [53]. The federal eviction moratorium was considered a salvation for millions of families and the last remaining federal protection to ensure that many individuals had stable and safe housing during the pandemic [53]. Studies have shown an association between lifting the federal eviction moratorium and the increased spread of COVID-19 [54,55]. It is crucial to take prompt action at the local, state, and federal levels to offer more protection to renters facing eviction. Some necessary steps include implementing or prolonging state and local bans on eviction, providing emergency rental aid at the state and local levels, and introducing more safeguards for renters, such as removing eviction records from public records [53]. Moreover, the added obstacles to obtaining temporary and long-term housing should be eliminated; such barriers disproportionately affect communities of color and contribute to housing insecurity and incarceration [56]. Examples of such barriers include having an eviction on one's credit report or public record and the use of criminal background checks when assessing tenant applications [52]. Repealing such restrictions can help provide access to affordable housing.

### *5.3. Increase Population and Public Health Funding*

Environmental health equity among vulnerable populations requires increased funding for public health and COVID-19 recovery, which includes environmental justice grants to address inequities faced by low-income populations and communities of color [57]. Sustained federal investment in community development programs is necessary for ensuring a healthy, equitable, and climate change-ready economic recovery from the COVID-19 pandemic [58]. Expanding economic opportunities, availability of affordable housing, and prioritizing equity and racial justice are critical components of city resilience and climate action plans [59]. It is important to consider providing sufficient funding for community-led and developed solutions that would help build and enhance community capacity, foster community partnerships, and implement these developed solutions effectively. This can involve creating and expanding training programs, workshops, and initiatives through agencies such as the U.S. Department of Housing and Urban Development [52].

### *5.4. Expand the Availability of Affordable Housing*

It is crucial to have prompt and sustainable measures in place at the local, state, and federal levels to tackle housing discrimination and bolster the availability of reasonably priced and accessible housing for families. The significant decrease in the number of affordable rental units has led to housing insecurity and aggravated the affordable housing predicament [60]. Exclusionary zoning policies that reinforce poverty and segregation must be prohibited. Affordable, accessible housing is needed to provide feasible options for diverse families [61]. Continuing protections for renters in danger of eviction, outlawing barriers to obtaining temporary and long-term housing, and increasing the supply of affordable new rental construction can address the affordable housing crisis [52].

## **6. Conclusions**

Housing and health are closely interlinked. The COVID-19 pandemic has exposed the existing racial and ethnic disparities in health in the United States. It has also worsened

the problem of housing instability for communities of color, which puts them at a higher risk of contracting COVID-19. It is crucial to investigate how inadequate housing leads to increased rates of COVID-19 and undermines health equity. To address this issue, we need to undo the harm caused by environmental racism that has resulted in housing instability and increased disease risk among racial and ethnic minorities in the U.S. who are already vulnerable to COVID-19. We recommend strengthening community partnerships in the pandemic response, providing renters with increased protection against evictions, increasing public funding for population and public health, and expanding the availability of affordable housing. These measures can help reduce the negative health effects of housing instability among communities of color in the United States. It is our responsibility to prioritize the fight for environmental justice in the form of stable housing as we work towards COVID-19 recovery.

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