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Guest Editors' Introduction

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Introduction to the Special Issue on Environmental Justice and Climate Change

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Climate change is a global emergency. It is estimated that anthropogenic activities have already warmed the Earth about 1°C. To decrease the catastrophic impacts of climate change, annual emissions of greenhouse gases must halve by 2030 and reach net zero by 2050. Limiting the increase to no more than 1.5°C above pre-industrial levels is the desired goal because catastrophic, sometimes irreversible changes in many ecosystems are expected if the temperature increases to 2°C.¹ So far, the world is not even close to curbing greenhouse gas emissions to reach this goal, or meet the commitments made in the 2015 Paris Agreement.² Last year the Earth's global average temperature tied with the temperature in 2016 as the warmest on record.³ In the meantime the inexorable destabilization of all ecosystems in the world continues to occur.

Climate change also is an environmental justice concern. The least responsible for the climate crisis, children, are bearing the greatest impact. All children are and will continue to be affected by the changing climate, although the impact will not be the same for all. Children from developing countries, children of color, and indigenous populations are at increased risk because of their increased exposure, increased susceptibility, and limited resources for adaptation. They may, for example, live in substandard housing or in polluted environments, in flood prone areas or without adequate heating and cooling systems.

We must pause to think about the impact that the current crisis has on the health of children and what our indifferent world is doing to future generations. Their developing organ systems, higher level of exposure due to their physiology, the nature of their daily activities, psychological immaturity and dependence on adults makes children a very high-risk group. The problem is even more urgent when one considers the cumulative effects that these exposures will have as they grow into adults. It is possible that the insidious nature of the adverse health impacts undermines public awareness and action because many changes can go unnoticed before symptoms arise. But the health and well-being of children have not been a priority in the climate conversation.

Climate change has led to more extreme weather events around the world. Increased temperature and heat waves will affect communities in different ways. Communities without political power are most severely affected. Between 1971 and 2000, U.S. counties with a higher number of Black and Hispanic residents, experienced more days with very high temperatures, compared to communities with a lower number of Black and Hispanic residents. This gap is expected to widen even more by mid-century, if the targets set by the Paris Agreement are not met.^{4,5} A recent study involving 108 “redlined” communities, (Black and minority communities that experienced discriminatory mortgage lending in the 1930s) showed that 94% of these neighborhoods had temperatures 2.6°C higher and up to 7°C higher, compared to non-redlined neighborhoods.⁶ Increasing temperatures bring another threat to the life of hundreds of thousands of minority children working on farms in the U.S.⁷

Black and brown children not only have more exposure to extreme weather events, but the amount of disaster relief that their communities receive is lower. When Hurricane Maria struck Puerto Rico in 2017, more than half a million children woke up to a devastated island lacking essential resources such as food, water, electricity, and shelter; this continued for weeks to months. Schools and early childhood development programs were closed for months, and mental support resources were scarce. Nevertheless, the federal government response efforts favored relief to those affected by Hurricanes Harvey and Irma in the mainland.⁸ Although more resources were available for those affected by hurricanes in the continental U.S., minorities and populations of color did not experience the same benefits as the rest of the population. More extensive flooding was experienced by Hispanics, non-Hispanic Blacks, and other racial minorities and households from lower socioeconomic status compared to white or higher socioeconomic status households.⁹ In spite of this, recovery funds were not distributed equally, and people in impoverished areas did not receive the same attention and benefits as people in more prosperous areas, leaving many communities struggling for months on end.^{10,11}

People with more resources contribute more to the climate crisis. Richer communities and individuals, on average, have higher carbon emissions than impoverished communities and individuals. In the U.S., wealthier households have a larger carbon footprint than poor households.¹² Those with annual household income under \$30,000 made up 25.7% of the total

population but were only responsible for 19.3% of the carbon footprint, but those with annual household income more than \$100,000 accounted for 22.3% of the total population and were responsible for 31.2% of the total carbon footprint of the U.S. household consumption.¹² The average carbon footprint of the wealthiest households was more than 5 times that of the poorest.¹²

Despite the evidence that climate changes are a threat to environmental justice, the governments of the world have failed to decrease their carbon emissions, causing anger and anxiety worldwide. Because of the governments' failure, more and more people (including groups of children) are turning to litigation to capture the attention of their governments about the necessary actions needed to avert a climate crisis. As of May 2021, there were 1,841 cases of climate change litigation around the world. Some are concluded and others are ongoing.¹³ The vast majority (1,387 cases) were filed before courts in the United States, and 454 cases were filed before courts in 39 other countries and 13 international or regional courts and tribunals (including the courts of the European Union).¹³

The year 2015 was a historic year for such actions, because that was when a judge in the Netherlands ruled that the Dutch government must cut emissions by at least 25% within 5 years to protect its citizens from the harmful effects of climate change.¹⁴ The legal team for this pivotal case used the Oslo Principles¹⁵ to bolster their case. The Oslo principles assert that governments are violating their legal duties if they each act in a way that, collectively, is known to lead to grave harms. This is based, in part, on the Precautionary Principle, which is well established in the European Union but not yet recognized by the U.S. government.

Also in 2015 a group of 21 children and young adults in the U.S. brought *Juliana v. United States*, a lawsuit that accused the U.S. government of violating their asserted constitutional right to a safe climate system by enabling a reliance on fossil fuels.¹⁶ Although the case did not make it to trial, it prompted settlement negotiations that are ongoing.

Judgments in cases decided by the apex courts of Ireland, France, Germany and Pakistan during the past 12 months have important implications for other countries.¹³ Although these decisions may be encouraging, we cannot wait for the resolution of litigation because it takes too many years. We all have a role to play to protect children from the current climate crisis.

It is clear that our governments are not rising to the challenge of combating the climate crisis as quickly as they need to in order to avert disastrous climate change.¹⁷ The Healthy Nationally Determined Contributions Scorecard ranked 40 nationally determined contributions covering 66 countries (including the joint contribution of the 27 countries of the European Union) to meet the goals of the Paris agreement.¹⁷ This snapshot of governments' priorities relating to climate change, showed that health and climate change links are not being adequately recognized or addressed in most countries.

It is now up to us, the citizens of every country in the world, to elevate our concerns about the climate and environmental justice crisis before it is too late. We must speak out in a way that forces our leaders to take appropriate actions. Most people, even our elected leaders, still do not recognize the link between climate change and child health.¹⁸ It is our job and our moral obligation to bring attention to how the climate crisis is affecting children and environmental justice to the forefront of the climate conversation. As you read this issue, think about the choices you make each day (such as decisions about diet, transportation, and purchasing) and the choices you make periodically (such as voting in local, state, and national elections). Good or bad, your choices will impact the life of every single child in the world and *all* future generations. It is time that we educate our patients and communities and turn up the heat on the policymakers. As a famous politician once said, "When I feel the heat, I see the light."

This special issue of the *Journal of Applied Research on Children* features articles that contribute to a better understanding of the nexus of environmental justice and climate change. The issue includes articles that explore the physical and mental health effects of climate change on marginalized children, the views of youth on the climate crisis, and efforts to decrease carbon emissions at the community level. Each of us has a role to play in choosing how we respond.

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