

# Risk Perception of Climate Change and Human Health: Fostering Action and Alleviating Climate Anxiety

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## List of Abbreviations

**BIPOC** - Black, Indigenous, and People of Color

**CCA** - Climate Change Anxiety

**HBM** - Health Belief Model

**IPCC** - Intergovernmental Panel on Climate Change

**SDOH** - Social Determinants of Health

**SMART Goals** - Specific, Measurable, Achievable, Relevant, Time-Bound

**NOAA** - National Oceanic and Atmospheric Administration

**NRC** - National Resource Council

**USPHS** - United States Public Health Service

**WHO** - World Health Organization

# Introduction

Although the United States is considered one of the wealthiest countries in the world, it is far from being considered one of the healthiest. According to the U.S. National Resource Council (NRC), when compared to other high-income countries such as the United Kingdom, Australia, and Canada, the U.S. experiences far worse health outcomes overall. The maternal mortality rate in the U.S. in 2022 was 22.3 deaths per 100,000 live births (Hoyert, D., 2024). Other issues, such as infant mortality, injuries, homicide, HIV/AIDS, obesity, diabetes, drug use, and other issues, are more prevalent in the United States than in other high-income countries (NRC (U.S.), 2013). Poor health outcomes, when combined with the challenges of anthropogenic climate change, create immense challenges and threaten human health and general well-being. Addressing the current state of human health in the U.S. cannot be completed without considering the effects of climate change.

Public health plays a critical role in addressing the climate crisis. Human health is being threatened by physical and environmental changes such as increased extreme weather events, sea level rise, forced migration, an increase in infectious diseases, a decrease in clean water supply, and a decrease in agricultural production. For many generations, the knowledge of climate change has existed, and up until recently, that knowledge has been severely neglected. Climate change is no longer a thing for the future to deal with; it is actively altering the world around us at a rapid pace. Waiting to act is no longer an option; millions of lives are at stake. Action requires understanding, and understanding requires communication on multiple fronts.

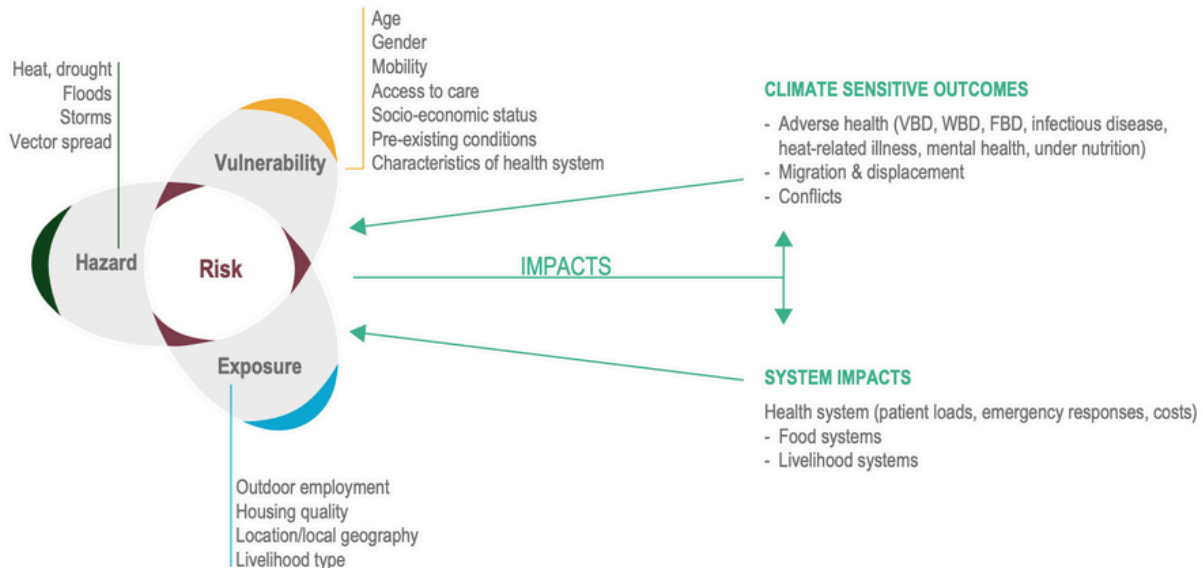
The purpose of this paper is to inform, educate, and empower individuals to develop a deeper understanding of the challenges the world is facing and to actively seek ways to improve human and environmental health while living in the era of climate change. This paper emphasizes the impact of climate change on human health and well-being while also investigating the role of mental health and the unequal distribution of barriers and burdens on a younger generation. The importance and significance of identifying and understanding perceived risks are also explored via the Health Belief Model framework. Accounting for risk perception and individual human behavior is critical when creating successful climate adaptation initiatives.

# Background

## Climate Change & Human Health

Climate change is harming physical, mental, spiritual, and community health worldwide. General health and well-being are being threatened by the increasing frequency and intensity of extreme weather events such as heatwaves, drought, and wildfires, as well as increasing cases of infectious and vector-borne diseases, and declines in food and water quality and security (IPCC., 2023). These climate-related hazards will continue to grow and are already increasing morbidity and mortality across all regions of the United States (Hayden et al., 2023). Climate change and its associated risks are not projected to affect everyone equally; certain communities and groups of individuals will experience these effects on a much deeper level. This includes individuals and communities who are under-resourced and overburdened, pregnant people, communities of color, children, people with disabilities, people experiencing homelessness, people with chronic diseases, and older adults (Hayden et al., 2023).

**Figure 1.1** Interactions between hazard, exposure, and vulnerability that generate impacts on health systems and outcomes, with selected examples.



\*Source: Figure 7.4 in Cissé, G., R. McLeman, H. Adams, P. Aldunce, K. Bowen, D. Campbell-Lendrum, S. Clayton, K.L. Ebi, J. Hess, C. Huang, Q. Liu, G. McGregor, J. Semenza, and M.C. Tirado, 2022: Health, Wellbeing, and the Changing Structure of Communities. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1041–1170, doi:10.1017/9781009325844.009.

In addition to the physical effects climate change will have on human health, there is also a severe mental impact that is already being seen within the current population globally. “Individual livelihoods have been affected through changes in agricultural

productivity, impacts on human health and food security, destruction of homes and infrastructure, and loss of property and income, with adverse effects on gender and social equity” (IPCC., 2023). The environmental impacts of rising sea levels, low food resources, and extreme heat will lead to the displacement of people and necessitate migration. The disruption of livelihood and familiarity causes immense mental and emotional stress. Younger generations are at a higher risk of developing these mental and emotional stressors as mental health conditions in the U.S. have been more prevalent in adolescents; these conditions include anxiety, depression, and suicide (Hayden et al., 2023).

### The Influence of Perception

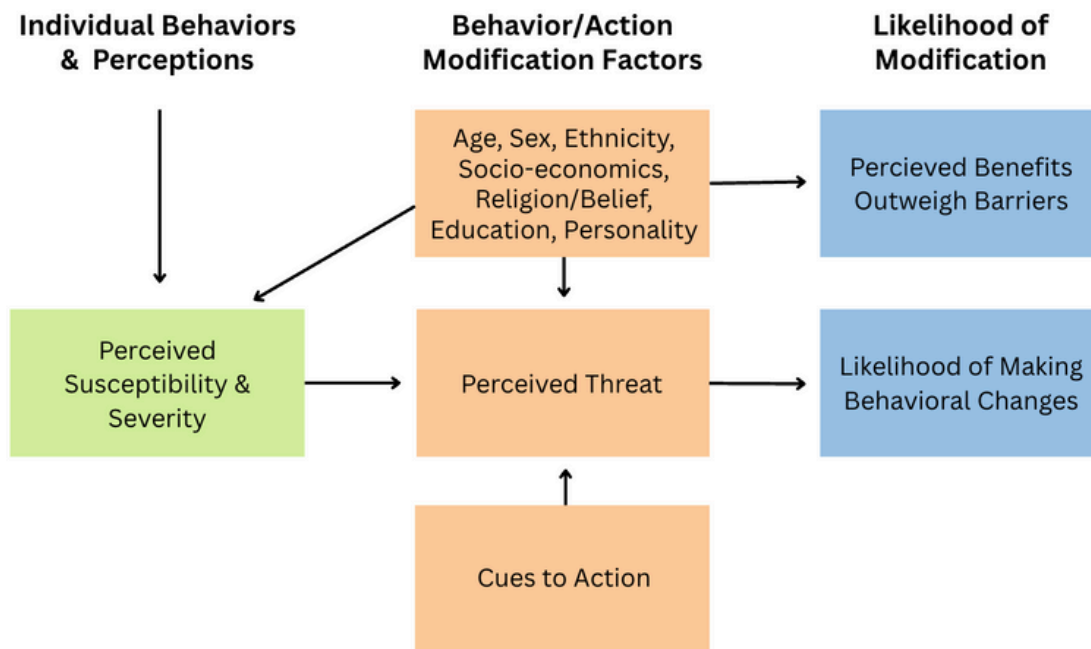
Climate change, although well-researched and widely accepted around the globe, still lacks proper mitigation and widespread action. According to the most recent Intergovernmental Panel on Climate Change (IPCC), “most observed adaptation is fragmented, small in scale, incremental, sector-specific, and focused more on planning rather than implementation” (IPCC., 2023). This, of course, is due to a multitude of factors, one of the largest contributors being the use and fluidity of individual choice. Although many individuals understand and are aware of the dangers climate change poses, they may still decide not to act. This inaction can be explained by the concept of risk perception. Risk perception is an individual's perceived susceptibility to a threat. Personal experiences, emotional, psychological, religious, spiritual, philosophical, and intuitive bases are all factors that create an individual's perceived risks (Evans, G., Bostrom, A., Johnston, R B., et al., 1997). Although risk perception in this case is incredibly influential on climate action, further inaction may be explainable when taking a deeper look into human behavior.

The Health Belief Model (HBM) is a conceptual framework in health behavior research created by social psychologists working in the United States Public Health Service (USPHS). The HBM is used to understand and explain the failure of preventative action and programs due to people's lack of participation, as well as an individual's perceived health threats. The HBM consists of 6 primary cognitive constructs that influence human behavior: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Glanz, K., Viswanath, K., Rimer, B., 2015). This model is incredibly useful and plays an integral part in the creation of effective and efficient health-related programming and interventions. The HBM will be discussed further in the *Possible Solutions* section under *Behavioral Changes & Public Health Campaigns*.

Human behavior is a complex and ever-changing determinant of the world. Individual choices can have long-lasting effects and heavily influence the trajectory

of how society operates. Due to the nature of behavior and its capacity to impact the globe, it is suggested that a baseline of knowledge on the topic be created to inform public health professionals as well as professionals working in climate change-related fields. Understanding the fundamentals of human behavior is critical to creating successful climate mitigation strategies. Behavior patterns, individual choice, and, most importantly, perceived risk must be considered when creating messaging, programs, or interventions regarding climate change.

**Figure 1.2.** Health Belief Model Framework



*\*Adapted from: United States Agency for International Development (USAID) under the Health Communication Capacity Collaborative., (2017)., <https://sbccimplementationkits.org/quality-malaria-medicines/health-belief-model/>*

## Climate Change as a Complex Risk

Climate change is one of the most complex issues we have faced as a species to date. Not only is human health at risk, but also the environment in which we live, and all the creatures that inhabit the earth, and our very way of life are all subject to the changes climate change harbors. These issues cannot be addressed fully without confronting and altering the very fabric of current societal norms. The very way in which the world functions on a social and biological level requires immense changes. The United States functions on the idea of growth, whether that be economic, industrial, or population-based. Global economic growth is essential for a functioning society, but a hindrance to climate mitigation.

Moser et al (2015) introduce the idea of societal teleconnections. We know of

teleconnections in an environmental capacity, think the El Niño-Southern Oscillation (ENSO). This physical phenomenon can reach far and wide across the globe and impact atmospheric circulation, and much like this environmental phenomenon, societal teleconnections induce lasting changes on a global scale (Moser et al., 2015). The main idea here is that the occurrences that happen across the world all eventually impact other places and people, “societal teleconnections link activities, trends, and disruptions across large distances, such that locations spatially separated from the locus of an event can experience a variety of impacts from it, nevertheless”(Moser et al., 2015). When applying this concept in the context of climate change, there is a new sense of risk associated. Because climate change is not an occurrence based on one person or one country’s actions, but a conglomerate of every choice made, the complexities of the issue are numerous and, unfortunately, unavoidable.

# Description of the Problem

## Psychological & Social Factors Influencing Risk Perception

Many people are aware of the climate crisis and of the dangers associated with it to a certain degree. However, as expressed previously, this information does not always lead to action. The psychological impacts of climate change and how the individual psyche impacts mitigation are critical to understand when creating successful interventions. It would be disingenuous to neglect the importance and role of personal beliefs, perceptions, biases, and social processes that shape our day-to-day behavior and guide our choices. Considering everyday behaviors and habits is the key to adapting a variety of interventions that will be both effective and efficient.

Risk perceptions of climate change vary greatly on an individual level, as well as on a global scale. While many countries are pushing for further dedication to reduce climate change globally, others continually prioritize economic growth and have publicly understated and dismissed the risks of a warming climate (Linden, S., 2015). With such differences being advertised on a global scale, misunderstanding and miscommunication create confusion, and it may be hard to decipher which sources have the most accurate information. Additionally, because climate change creates gradual change that is spread out over a long period of time, in addition to being mostly invisible, the intensity of the risks is difficult to grasp (Linden, S., 2015). Due to the lack of visible changes and dangers, climate change has been labeled by many generations as a “future” problem, one that will not affect an individual until they are long gone. This mentality is what led to the genesis of climate change.

Humans are, at our core, a socially dependent species. The need to communicate and express is ingrained in our very DNA, and because of this, we often abide by the social rules or cues of our generation, “by comparing themselves to others, people learn what is possible, normal, and approved of. These observations are internalized as social norms, and when norms supporting climate action are brought to individuals’ attention, they behave more pro-environmentally”(Sussman, R., Gifford, R., Abrahamse, W., 2016). When society neglects to normalize something such as climate action, the reality of it occurring is much less than if it were being pushed on a social level. Instead, with the chronic use of social media, overconsumption is being pushed on every platform.

## Physical Health Risks of a Higher Global Temperature



Although this section will not cover every physical health risk that is associated with climate change, the risks discussed are those that are both recognizable and generally cause the greatest concern in a general sense. This section specifically will discuss the following physical health risks: Extreme heat and heat waves, the effects of air pollution, drought, decreasing food supply, and increased prevalence of infectious disease.

Higher temperatures across the globe are associated with issues such as adverse pregnancy and birth outcomes, poor mental health impacts, and increased emergency room visits and hospitalizations (Hayden et al., 2023). In 2023, according to the Global Climate Report from the National Oceanic and Atmospheric Administration (NOAA), global temperatures for July, August, and September were above 1.0°C (1.8°F) above their previous long-term average, marking the first time in NOAA's record any month has breached that threshold (NOAA., 2023). One of the main health concerns regarding heatwaves and overall higher average temperatures is an increase in heat-related deaths. Prolonged exposure to high temperatures can cause exhaustion and heat stroke, which can be life-threatening. According to the 2023 IPCC report, “hot extremes, including heatwaves, have intensified in cities, where they have also worsened air pollution events, and limited functioning of key infrastructure” (IPCC., 2023). Individuals who do not have access to temperature-controlled areas, the elderly, people with chronic diseases, and children have a higher risk of complications and death during a heatwave (WHO., 2025).

Drought is a major concern regarding climate change. Water is an essential element of life that is required for not only human survival, but also needed by a vast majority of all living organisms. A decrease in water quality and quantity leads to an increase in the risk of exposure to heavy metals, bacteria, and other contaminants. Poor water quality and scarcity are also associated with worsening air quality, which can result in adverse health outcomes such as increased incidence of stroke, heart diseases, lung cancer, and many other acute and chronic respiratory diseases (Jay et al., 2023; WHO., 2025). A decrease in water abundance will heavily impact the general food supply and the ability to grow crops, likely contributing to a global economic crisis. The 2023 IPCC report states that “climate change has reduced food security and affected water security due to warming, changing precipitation patterns, reduction and loss of cryospheric elements, and greater frequency and intensity of climatic extremes”(IPCC, 2023).

In addition to extreme heat, drought, depleting food supply, and poor air quality, there is also a major concern regarding the impact of climate change on infectious diseases. Many diseases and pathogens thrive in warmer, humid

environments, for example, dengue, malaria, and St. Louis encephalitis (National Research Council (U.S.) Committee on Climate, Ecosystems, Infectious Diseases, and Human Health., 2001). Rising temperatures and changing precipitation patterns may greatly affect the seasonal norms and cycles of local illness and disease (Mirski, T., Bartoszcze, M., Bielawska-Drozd, A., 2011). Additionally, because of the rising temperatures across the globe, diseases that are more commonly occurring in warmer environments could begin developing in other areas of the world. Additionally, due to forced migration, climate change will cause communities afflicted by sea level rise, extreme weather events, etc., to move to areas of the world and be exposed to different diseases (Mirski, T., Bartoszcze, M., Bielawska-Drozd, A., 2011).

It is important to note that in addition to the physical health risks discussed above, there are many other risks and impacts climate change will have that should be taken into consideration. This is not to serve as a means to fear-monger or set a false narrative that all effects associated with climate change are negative and should be feared. It is in the best interests of the reader to conduct their own investigation and develop a deeper understanding of the many mechanisms of climate change and what changes will greatly impact the world around them.

## Mental Health Risks

While climate change is often associated with physical environmental changes, the mental health and well-being of the global population are also under threat. With an amplified risk to human health, uncertain economic impacts, increased social conflict, forced migration, and more, the effects of climate change on mental health are devastating (Obradovich, N., et al., 2018). Despite past and current research, there is still much to be learned about the connection between our warming climate and the effects it will continue to have on the global population's mental health.

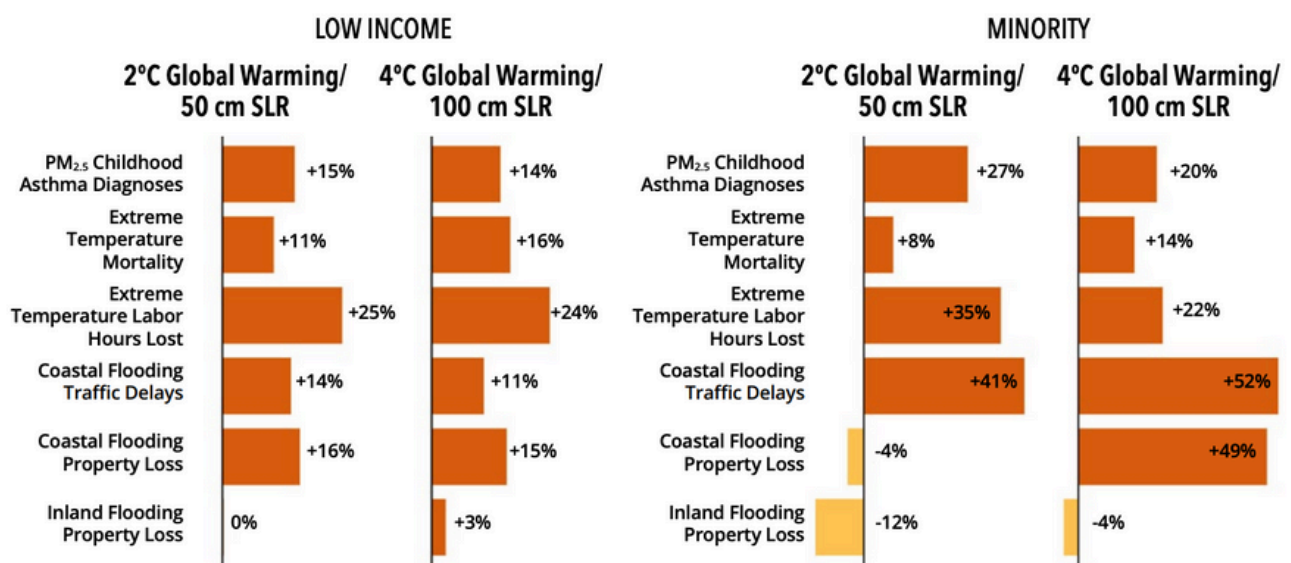
The mental well-being of the global population is of great concern, particularly with young adults, teens, and children. According to the National Alliance on Mental Illness (NAMI), 1 in 5 U.S. adults experiences mental illness each year, and 50% of all lifetime mental illnesses begin by age 14, and 75% by age 24 (NAMI., 2025). In 2023, individuals ages 15 - 24 made up 1.26 billion of the global population (UN, World Population Prospects., 2024). With this in mind, it is imperative to recognize that the mental state of teens and young adults is fragile and easily impacted by unpredictable changes and trauma. Children, teens, and young adults are far more susceptible to the challenges and tribulations

associated with climate change, and yet, they are often left out of the climate conversation (Ojala, M., & Bengtsson, H., 2018). Without sound mental health and the appropriate infrastructure to handle this amount of stress on a global scale, there will be a lasting and noticeable impact on current and future generations. It is advised that the impact of climate change on mental health should be studied in much greater detail.

## Vulnerable Populations

All life on Earth is subject to the changes and impacts that are associated with a warming climate. Communities of color, low-income groups, certain immigrant groups, and those with limited English proficiency are groups that have been identified by the Environmental Protection Agency (EPA) as more vulnerable to the health impacts of climate change. An individual's social determinants of health (SDOH), such as income, education, access to health care, and housing, play a major role in an individual's ability to adapt and succeed during the climate crisis (EPA., Accessed 2025). As stated in the Fifth National Climate Assessment, “health-related burdens are experienced more acutely by BIPOC and low-wealth communities that have been under-resourced and overburdened” (Jay et al., 2023). Individuals living in poverty, those who are houseless, have preexisting medical conditions, elderly individuals, pregnant women, and children are also considered higher risk due to the effects of climate change (EPA., Accessed 2025).

**Figure 1.3.** Likelihood that Those in Socially Vulnerable Groups Currently Live in Areas with the Highest Projected Impacts to their Reference Populations.



\*Source :U.S. Environmental Protection Agency., (2021)., *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts.*, U.S. Environmental Protection Agency, EPA 430-R-21-003., [www.epa.gov/cira/social-vulnerability-report](http://www.epa.gov/cira/social-vulnerability-report)

# Possible Solutions

## Behavioral Changes & Public Health Campaigns

Human behavior is a realm of science and psychology that is ever adapting and growing to encompass more variation. For an individual to make a choice, they first need to understand the risks and the benefits that are associated with it, as well as the many alternative courses of action that may be taken. Additionally, they need to grasp the limits of their own experiences and understanding regarding that choice. As discussed in *The Influence of Perception*, there are ways in which researchers and public health professionals may be able to better understand individual actions, such as using the Health Belief Model (HBM). Utilizing frameworks such as the HBM can inform and develop health-related programming that has a greater effect within a community.

Over the past decade, there have been numerous public health campaigns and interventions that target human behavior as the main mechanism for change. Many of these campaigns have run into barriers and ultimately failed, but there are others that have been rather successful. An example of a successful intervention targeting human behaviors is anti-smoking campaigns, specifically the Tips from Former Smokers (Tips) Campaign created by the Centers for Disease Control and Prevention (CDC). The Tips campaign successfully showed real people living with serious long-term health effects from smoking and secondhand smoke exposure (CDC., Accessed 2025). This brought a new sense of impact and risk associated with smoking cigarettes to the public. Between 2012 - 2018, the CDC estimates that over 16.4 million people who smoke had made an attempt to quit due to their exposure to the Tips campaign materials (CDC., Accessed 2025). Why? Because their perceived risk of dangers associated with smoking was much greater than before. They were faced with the harsh reality that smoking can harm human health and can affect anyone and everyone, which led to a shift in personal perspective and action. Individual changes are hard to prompt on a large scale, however, it is a key strategy when addressing mass issues such as smoking.

Creating interventions that target the root of the problem is an essential function of public health. When it comes to facing climate change, there are other factors that need to be considered. For example, too much exposure to the negative risks may paralyze individuals and create further avoidance. Too little exposure may create the false narrative that there is no crisis, and thus the need to address the issue is much lower and can be forgotten for the movement. All facets of climate

change needs to be addressed, the good, the bad, and the ugly. Unfortunately, fear-mongering has played a huge role in climate messaging and education. Tactics that increase fear and anxiety in a population may be effective in some situations, but in the context of climate change, this can lead to a sense of dread and, ultimately, action paralysis. The nature of behavior-based interventions is founded on the idea that change is up to the individual. Life experiences, friends, family, previous knowledge, etc., play an integral role in the behaviors presented by a person and how they make decisions. The HMB claims that individuals are more likely to engage in a health behavior if they believe the following:

1. They are susceptible to a condition.
2. The condition could have potentially serious consequences.
3. A course of action available to them could be of benefit in reducing either their susceptibility to the severity of the condition.
4. There are benefits to taking action.
5. Their perceived barriers are outweighed by the benefits and are not strong enough to prevent action. (Glanz, K., Viswanath, K., Rimer, B., (2015).

Specifically for the following section, take note of the fifth condition: *perceived barriers are outweighed by perceived benefits, and are not strong enough to prevent action*. When creating effective behavior-based interventions, the perceived benefits of an action are directly tied to the individual following through with said action. If no perceived benefit on an individual level outweighs the barriers to action, the ability to change the targeted behavior is ruled unlikely. The following section will discuss the ways in which the HBM framework can be used to help generate climate mitigation efforts for both communities and on the individual level, and how to integrate greater benefits.

## Individual & Collective Action

It would be disingenuous of this paper not to recognize the current issues and political turmoil that are occurring due to Acting U.S. President Donald Trump's re-election as of January 2025. Many of the actions taken by this current administration have directly affected how the federal government is able to handle the climate crisis, as well as the overall health and well-being of American citizens. These actions have caused a surge in political distrust and distress on a global scale, fostering an environment that adds immensely to the stress of day-to-day life. Implementing new strategies or interventions to address climate change on a federal level is likely not a viable option at this point. Continually adapting and engaging in climate mitigation on a state, local, and individual level is our best hope for the foreseeable future. With that being said, it should be noted that it is entirely possible to create meaningful and effective climate action despite these current challenges.

The presence of climate change has created an environment, both in the physical and social sense, filled with unknowns. Although scientists and researchers have a solid grasp on what is expected to change, our species has yet to experience such a complicated risk, and thus, we are unprepared. Climate change anxiety (CCA) is characterized as negative cognitive, emotional, and behavioral responses associated with concerns about climate change (Schwartz, S., et al. 2022). As discussed previously, children, teens, and young adults are the most impacted by climate change, as a number of the projected changes will occur during their lifetimes. Therefore, it is critical that strategies and interventions that target CCA are aligned with the concerns, fears, and reality of this demographic. It should be noted that although these groups of individuals are the most at risk, they are the least studied population and often left out of relevant discussions and research (Corner, A., et al. 2015). It would be advantageous to further research the implications of CCA in younger generations, as barriers associated with heightened mental health issues and CCA may become more frequent.

Reducing anxiety on a global scale is a public health endeavor that is unlikely. However, focusing on local-level interventions to address general anxiety and climate-specific anxiety is tangible. Having a negative response to a crisis of this magnitude is both understandable and expected. Therefore, finding ways to reduce these negative emotions on a local level is imperative to the health of future generations.

Further education is highly encouraged; creating a broad baseline of knowledge will provide better grounds to make informed thoughts and decisions regarding the climate crisis. However, disseminating information about climate change is not enough to increase engagement on a national scale (Corner et al., 2015). Utilizing community-influenced climate adaptation and locally informed programming should be prioritized.

Referring back to the HBM, creating incentives surrounding climate action and breaking down identified barriers is crucial. The barriers may be identified through surveys, local meetings, individual discussions, etc. If the barriers to action outweigh the perceived benefits, the program risks being unsuccessful. Appealing to a community as a whole is more realistic than for specific individuals. This requires strong ties to a community. It is highly advised that public health and medical professionals expand their outreach and connections to numerous individuals in their community. It has been discussed previously that trust is lacking in the US, and after what happened during the COVID-19 epidemic, the relationships between people and medicine have been altered. Establishing trust both on an individual and local level is a top priority.

# Recommendations

## Integrating Climate Adaptation & Mitigation into Public Health Planning

This paper has covered several issues and health risks associated with climate change, but there is much more to the problem than can be thoroughly covered in this paper alone. Because of this, the recommended actions target the issues previously covered using a systems thinking approach. Note that both adaptation and mitigation are central to these recommendations, as both efforts to reduce risk and adjust to future conditions are necessary. As mentioned earlier, utilizing federal action to help in climate mitigation is unlikely. However, advocating for federal-level adaptation should continue regardless of who currently holds office.

### **Recommendation #1: Facilitate approaches to climate change that break down adaptation and mitigation into manageable steps.**

Climate change is complicated, even more so for individuals who may not be heavily involved in a career or lifestyle that is climate-oriented. Therefore, approaching climate change in a manner that is more accessible to the general public while also offering realistic steps towards mitigation is recommended. All adaptation and mitigation efforts proposed should be specific for the target community and be created with the knowledge and understanding of the HBM framework.

To better understand the critical perceptions within the target community, it is advised that an assessment be completed before any adaptations are made. Utilizing the HMB framework, the entity implementing these recommended actions should assess perceived risks, benefits, and barriers to action. Once the assessment has been completed, all identified stakeholders and local participating entities, as well as interested community members, will work as an interdisciplinary team to develop clear, specific, and measurable actions that break down climate mitigation into manageable steps. All proposed adaptations should be informed by the previous assessment.

These actions will range from those that may be undertaken immediately to those that may be undertaken over the next 5-10 years. It is highly likely that changes will need to be made after implementation; therefore, long-term adaptation plans



may be created after several years following the inclusion of the first adaptations within the community. These actions should be both manageable and realistic given the available resources within the community. Contributors should consider using the SMART goal framework (Figure 1.4) or a similar framework when creating adaptation plans and goals for the target community. Using a common and accessible framework for goal development may help streamline the process while fostering clear communication on a multidisciplinary team. Clarity allows not only the community to develop a better understanding of the adaptation process, but also sets the standards and expectations moving forward throughout development and implementation.

Consistent evaluation is an important part of this process, as well as the entire community's inclusion. Adaptation steps must be obtainable for the vast majority of the community. When creating these adaptations, it is highly encouraged that communities utilize existing plans and previous successes to guide their decisions. Following the initial assessment of perceived risks, benefits, and barriers, every community should be evaluated by its local public health department/related personnel to create a baseline of knowledge regarding climate change. With this information, educational material will be made targeting the specified gaps.

**Figure 1.4** SMART Goals

<b>S</b>	Specific	The details! Who, what, when, where, and why?
<b>M</b>	Measurable	What data will be used to determine success?
<b>A</b>	Achievable	Is this goal realistic? Do you have the necessary skills and resources?
<b>R</b>	Relevant	Does this goal align with the defined vision of the project?
<b>T</b>	Time-Bound	What is the projected timeline of this goal being accomplished?

*\*Adapted from: University of California., (2016-2017)., SMART Goals, A How to Guide., [https://www.ucop.edu/local-human-resources/\\_files/performance-appraisal/How+to+write+SMART+Goals+v2.pdf](https://www.ucop.edu/local-human-resources/_files/performance-appraisal/How+to+write+SMART+Goals+v2.pdf)*

**Recommendation #2: Create opportunities for local climate action, emphasizing cross-sectoral solutions.**



Considering the previous recommendation as well as the information presented throughout this paper, there is a distinct need for accessible climate action, not only to current health professionals but to all demographics. With the threat of increasing warming, adaptation and locally led climate action will likely become more constrained and less effective. Increasing action, specifically of a cross-sectoral nature, would likely increase the effectiveness of adaptation.

Similar to the first recommendation, both the HBM and the SMART goal framework are applicable in this scenario. However, this recommendation's focus is on hands-on community involvement rather than community-wide adaptation. Creating opportunities of this nature requires an immense amount of communication and harmony across multiple sectors. Some of these sectors may include local businesses, hospitals, nonprofits, local governing agencies, and local schools. Using a cross-sectoral approach also requires that the current political nature of climate change be dismantled. Climate change is not a political statement, but a global crisis. So far, there have been great successes in small-scale action, but not on a broad enough spectrum to slow the warming climate at a significant rate.

Currently, the U.S. is not lacking in the availability of climate action; rather, the available action lacks accessibility and inclusion. Many factors may affect an individual's capacity to participate in climate mitigation, including their work schedule, where they live, what transportation is available, income level, medical conditions, and/or disabilities, and so on. Approaching future projects via a cross-sectoral approach could help bridge the current gaps in action efforts.

This should be a community-led process, based on the communities' expressed priorities, needs, knowledge, and capacities. The overarching goal of this recommendation is to empower communities to plan for and cope with the impacts of climate change in a way that is meaningful to them. Consider utilizing community and environmental engagement as a physical tool for coping with forms of environmental and climate-related anxiety. The combination of building environmental awareness and putting this knowledge into action could be highly beneficial to individuals currently struggling with the climate crisis, especially in younger demographics.

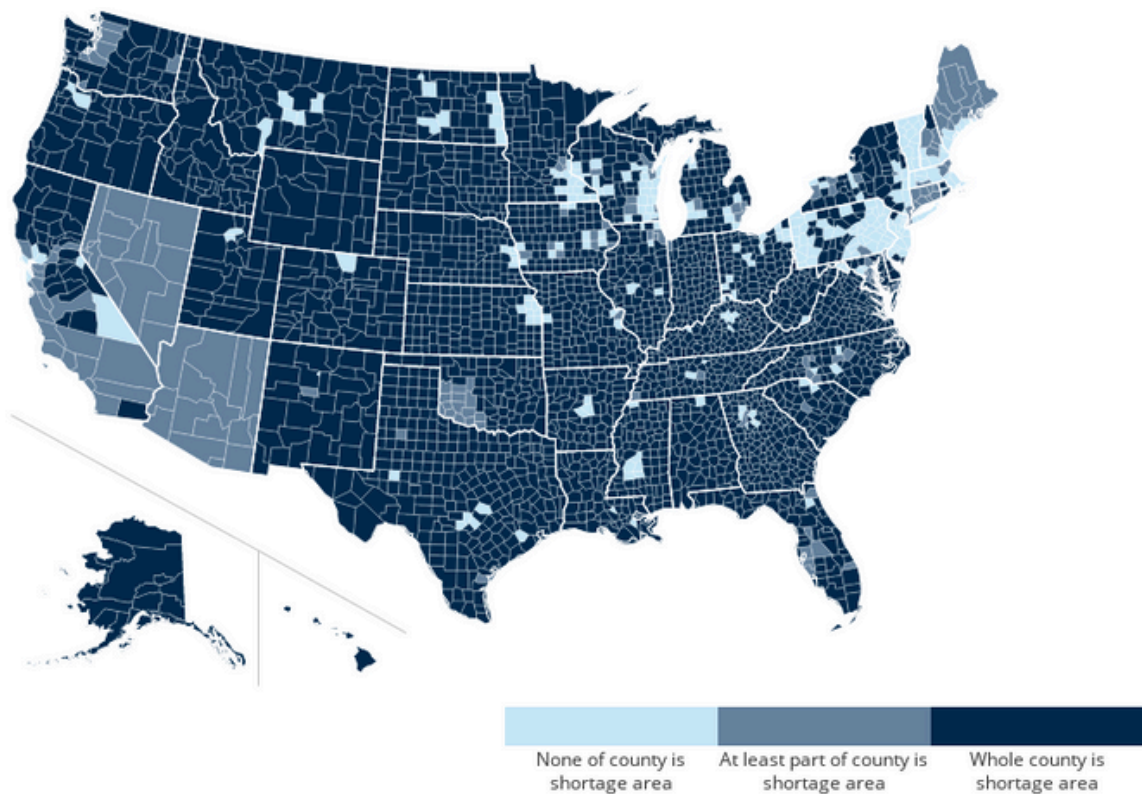
### **Recommendation #3: Utilize existing health systems and resources to improve overall access to mental health services.**

Many communities across the U.S. are located in mental health care deserts. The map below (Figure 1.5) depicts the shortage of mental health professionals on a

national scale. As represented by the map, a vast majority of the U.S. is severely lacking in mental health professional personnel, and with them, the necessary mental health services to serve the majority of the U.S. population. Although this may be discouraging, with the usage and availability of online and tele-mental health services, now more than ever, there are ways in which a greater number of the population can be reached.

Although primary care providers are well-versed in medicine and medical practices, this recommendation further pushes these providers to continually advocate for and help address the current lack of mental health services in the nation. Integrating mental health screenings and evaluation into general checkups, annual doctors' visits, and in-school settings is highly recommended. Reaching all age demographics is critical, especially for teens and young adults. Similarly, providing multiple different ways in which individuals may receive a mental health screening, such as through community health centers and general clinics, would help create better opportunities for individuals to access mental health care.

**Figure 1.5** Health Professional Shortage Areas: Mental Health, by County, Across the U.S., April 2025



*\*Source Info: Rural Health Information Hub., (2025)., <https://www.ruralhealthinfo.org/data-explorer?id=209>*

An important aspect of this recommendation is the need for greater interpersonal and interprofessional teamwork. Community-based mental health

support utilizes community health workers, social workers, peer counselors, public health professionals, and more to provide basic mental health support and assist in referring individuals to the appropriate resources, as well as to specialized care when required. This process demands time, resources, and training. All of which are necessary for successful implementation. This includes training and educating all personnel involved in implementation. Training would include educating all personnel on climate change, the associated risks, and vulnerable populations, including the prevalence of CCA in younger generations. This knowledge is vital when combating the climate crisis.

Not only are these interprofessional teams better equipped to handle the high demand of mental health services, but the relationships these workers form within the community, and on personal levels, can help reduce the stigma and lack of trust in mental health and medical services in the U.S. This includes creating relationships with individuals within a younger demographic. Reaching children, teens, and young adults regarding their mental health is essential. Without them, the severe gap in current research will continue to contribute to the climate anxiety that is being perpetuated throughout younger generations. The relationships built between the community and essential personnel foster a greater capacity for culturally competent care ethics and practices within the community.

A facet of this recommendation that requires greater review is the use of tele-health services regarding mental health, specifically in rural areas. When addressing rural and small communities, there may not be a large capacity for the use of online resources. All aspects of a community should be taken into consideration when managing the mental health care of the population. In-person communication, in some capacity, is essential in forming well-rounded relationships. Relying on tele-health platforms alone is not a viable option in this scenario. However, when these services are available and well-received, they should be implemented. In addition to the use of tele-health, it is advised that social media platforms be used to promote mental health programs, current initiatives, support groups, etc, should be considered to reach a younger and overall more expansive audience.

As addressed previously throughout this paper, addressing mental health in the face of the climate crisis is a top priority. Without sound mental health, solutions will not be created, people will suffer greatly, and the impact on overall well-being will be catastrophic. Although mental health has not always been a high priority in the U.S., it is an essential aspect of humanity and should be treated as such.

# Implications for Future Research & Action

Many of the consequences of a warming climate are now unavoidable. It is still possible to avoid extreme threats, but there is a substantial lack of climate mitigation happening on the global level, especially in the United States. The focus needs to turn to state and local action to make a difference. This is a big ask, and a massive burden on communities across the nation, but it is necessary.

Community and state-level interventions must be adapted to best suit the needs of their population. The gap in knowledge and education must be addressed via state and local efforts. This includes educating medical personnel, local health departments, businesses, schools, etc, about climate change. Education does not always lead to action, but it is a fundamental step towards implementing new ideas and building a common understanding. All individuals should strive to communicate in an appropriate and broadly understandable manner. Additionally, consistently working towards eliminating the political barriers that surround this issue should be a priority for all health professionals. Climate change is not only a risk to those who are aware of its presence, but a critical risk to the entirety of the planet. Developing ties within communities and on an individual level is a necessity. Change is built on trust and respect. The ultimate goal should be maintaining human health and well-being for everyone, which includes placing more value on the surrounding environment, natural resources, and life itself. Understand that differing opinions exist and hold just as much value; there is not just one correct way to address climate change.

It is recommended that future research regarding risk perception, mental health impacts of climate change, and behavioral health campaigns be specifically created and founded on the needs and perceptions of younger demographics. Conducting further research that includes younger individuals will greatly impact future understanding of living in the presence of climate change. Shifting to focus on specific climate-related anxiety, depression, and distress will likely have a significant impact on how and what kinds of health-related interventions and programs are needed in the future. Additionally, the impact that human behavior and individual choices have on the climate crisis should be a focal point in future climate research.

# Summary

Human behavior is a main driver of climate change, but also of climate mitigation. An individual's capacity to act and make decisions is determined by a vast collection of lived experiences, preferences, emotional consciousness, and ultimately, their perception. The Health Belief Model helps explain the aspects of perception that impact an individual's ability and willingness to take action regarding a health-related behavior. Developing a better understanding of basic human behavior and what drives our choices can greatly affect the future of climate mitigation efforts.

Climate change is a challenge we will continue to face unless drastic measures are taken on a global scale. Until then, health professionals of all skill sets must facilitate approaches to climate change that break down adaptation and mitigation into manageable steps. This encompasses utilizing the existing health systems and resources to improve overall access to mental health services, creating opportunities for local climate action, and emphasizing cross-sectoral solutions. The mental health and well-being of the global population are directly tied to the risks created by climate change. Without addressing the current gaps in mental health care and distribution, the capacity for individuals to participate in climate action will continue to decline. Regardless of the current U.S. political standing, there is still much that can be done to aid in climate mitigation efforts on the state and local level.

The knowledge of what is at stake for the current and future generations should be shared in a way that seeks to avoid fear tactics, but also does not circumvent the hard truth. Human health, both on a physical and mental level, is at great risk and will continue to be threatened as long as the global temperature continues to rise. The world in which we live is changing drastically, and this information is critical in building a better future. Integrating climate adaptation and action within a community must be attainable and seen as a benefit to the community as a whole in order to have a successful outcome; grand ideas and wishful thinking only go so far.

The three recommendations this paper provides are not novel ideas. They are, however, crafted on the knowledge and hope that communities will take charge in the era of climate change. Relying on large corporations and governments to make drastic changes is setting the entire global population up for failure. These recommendations are realistic, community-based, and wholly obtainable. Creating change is possible, and we can begin at any time.

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