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REVIEW

The Mental Health Consequences of Climate Change: A Review of the Current Evidence and Emerging Challenges

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ABSTRACT

Climate change is an increasing global threat with clear mental health implications. Its effects are manifested in both direct and indirect ways. Direct effects include post-traumatic stress, anxiety, and depression after a flood, hurricane, or fire. The indirect effects are more persistent and stem from displacement, economic insecurity, social degradation, and loss of cultural identity. This burden on mental health is not distributed equally. The low-income groups, minorities, and children are at particular risk because of existing social and health inequalities. Eco-anxiety, defined as a persistent concern about the degradation of the environment and its future damage, is increasingly reported, especially among younger populations. Peer-reviewed literature published between 2015 and 2025 was identified through a systematic search on PubMed and Google Scholar and synthesised narratively to investigate the effects of climate on mental health, differences in vulnerability, and policy and practice considerations. The review underlines the need for mental health responses that go beyond the clinical setting. The resilience of the community, equal access to services, and the social context are at the heart of effective interventions. The integration of mental health into strategies for climate adaptation and mitigation is essential to reduce the current damage and reduce future mental health distress.

Keywords: Climate Change; Mental Health; Global Health; Post-Traumatic Stress Disorder; Depression

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1. Introduction

For decades, climate change has become a major problem worldwide not just for the planet but for mental health too as many studies show a link between climate change and mental disorders. This ‘mental health consequences of climate change’ is a direct outcome of extreme weather events, environmental degradation and social disruption^[1,2]. Not addressing the mental health implications of climate change has been called a ‘global tragedy’ because we have been neglecting mental health care in the context of environmental crises.

Trauma caused by extreme weather events (hurricanes, floods, wildfires) has direct mental health consequences and can lead to complex and varied emotional responses from impacted individuals and communities^[2,3]. Long-term psychological effects have also been shown among disaster survivors, showing that the consequences go beyond just physical property and infrastructure damage. In contrast, indirect effects are driven by social and economic disruption (displacement, loss of community), which amplify mental health vulnerabilities—

especially in vulnerable populations (**Table 1**)^[4]. Eco-anxiety, defined as chronic worry about environmental catastrophe and its impact on future generations, has emerged as a significant mental health concern in the modern world^[5]. This is especially the case for younger people grappling with existential anxiety over climate change. Furthermore, the intersection of climate with pre-existing social inequalities demonstrates that low-income communities already affected by high rates of mental illness will undergo even worse implications of climate^[6,7]. While previous reviews have largely examined individual outcomes such as trauma or eco-anxiety in isolation. This article addresses a key gap by bringing these varied impacts together into a unified framework that connects mental health vulnerabilities with practical mitigation and adaptation strategies. The urgency of climate change calls for prompt action that incorporates targeted mental health interventions, and embedding these considerations across climate policy is essential for an effective response^[1,2]. Integrating such a holistic approach is essential to promoting individual resilience and community well-being, highlighting both environmental sustainability and mental health as interrelated^[4].

Table 1. Climate-Induced Mental Health Vulnerabilities Across Population Groups: Stressors, Impacts, and Support Barriers.

Population Group	Primary Climate Stressors	Mental Health Impacts	Barriers to Support	References
Children	Extreme heat, floods, displacement	Post-Traumatic Stress Disorder (PTSD), anxiety, cognitive developmental issues	Limited healthcare access, poverty, dependency on caregivers, disrupted schooling	Gamble et al. (2016), EPA (2024) ^[8,9]
Elderly	Heatwaves, social isolation	Depression, anxiety, heat-related stress	Mobility issues, lack of technology literacy, inadequate emergency planning	EPA (2024), Madani Hosseini et al. (2024) ^[9,10]
Low-Income Communities	Floods, food insecurity, urban heat islands	Chronic stress, anxiety, eco-anxiety	Financial constraints, reduced access to quality healthcare, housing instability	Madani Hosseini et al. (2024) ^[10]
Indigenous Populations	Loss of land, cultural resources	Loss of cultural identity, depression	Marginalization, historical trauma, loss of traditional healing practices	Gamble et al. (2016) ^[8]
Immigrants/Refugees	Displacement, extreme weather	PTSD, anxiety, adjustment disorders	Language barriers, legal constraints, reduced mental health services availability	Madani Hosseini et al. (2024) ^[10]

2. Review Methodology

This review employed a narrative synthesis methodology, with a systematic literature search performed in PubMed

and Google Scholar using key terms including “climate change,” “mental health,” and “eco-anxiety.” Studies published between 2015 and 2025 were included, prioritizing peer-reviewed articles and systematic reviews. The synthesis

was conducted thematically, organizing findings according to population vulnerability, direct and indirect mental health impacts, and implications for policy and practice.

3. Climate Change and Its Psychological Impact

Climate change is increasingly recognized not only as an environmental crisis but also as a profound mental health crisis, with extensive evidence linking extreme weather events and environmental degradation to various psychological disorders. The failure to adequately invest in mental health care amidst escalating levels of mental illness has been described as a “global tragedy” reflecting a long history of neglect in this area. This recognition underscores the urgent need for integrated approaches that address both environmental and mental health dimensions of the climate crisis. The consequences of climate change on mental health can be categorized into direct and indirect impacts, each affecting individuals and communities in unique and often interconnected ways.

3.1. Direct Mental Health Consequences

Climate-related disasters—such as floods, cyclones, and wildfires—produce acute psychological distress in affected individuals and communities. Documented responses range from fear and anxiety to moments of solidarity and resilience. The growing intensity and frequency of these events create mental health crises that require timely clinical and psychosocial support. Longitudinal research after major disasters, including Hurricane Katrina, shows persistent sequelae such as PTSD. Extreme heat events also contribute to increased hospital admissions among people with pre-existing psychiatric conditions, particularly for mood and behavioral disorders^[1,7]. These patterns illustrate how climate-driven stressors can aggravate existing vulnerabilities while also precipitating new mental health problems.

Acute temperature spikes and chronic exposure to rising ambient heat operate through distinct pathways. Short-term heat waves have been linked to sharp increases in psychiatric emergencies, with some studies reporting a 9.7% rise in hospital admissions during heatwave periods^[11]. Gradual warming also exerts a cumulative toll: when monthly

temperatures exceed 30 °C, the probability of mental health difficulties increases by roughly 0.5 percentage points, and a 1 °C rise in average maximum temperatures over five years corresponds to a 2% increase in the prevalence of mental health issues^[11]. These findings suggest that long-term heat exposure imposes a sustained burden beyond day-to-day thermal stress.

Komulainen et al. further distinguish these mechanisms by showing that acute heat elevates emergency visits for substance use and mood disorders, while long-term cumulative exposure independently raises the risk of chronic mental illness—indicating separate physiological and psychological pathways^[12]. Slow-onset climate changes, including prolonged drought and the gradual loss of familiar ecosystems, generate another form of distress often described as Solastalgia. A systematic review by Burrows et al. of 57 studies reported consistent associations between these environmental changes and depression, anxiety, and general psychological distress^[13]. Their conclusions underscore the need for research frameworks that extend beyond traditional trauma-based models.

Heat also affects mental health through physiological and behavioral mechanisms. Sleep disruption is a critical pathway: a 1 °C increase in nighttime temperature anomalies has been associated with more than 14 minutes of sleep loss on nights exceeding 30 °C^[14], a pattern linked with depressive symptoms, reduced cognitive performance, and emotional instability. Heat stress may also disrupt neurotransmitter systems, including serotonin and dopamine pathways that regulate both mood and thermoregulation.

Medication-related risks further compound vulnerability. Some psychotropic agents, particularly antipsychotics and anticholinergics, can elevate core body temperature by more than 0.4 °C during heat exposure, heightening susceptibility to heat-related illness^[15]. Social consequences appear as well; thermal discomfort correlates with increased aggression, with a meta-analysis reporting a 9% rise in violent crime for every 10 °C increase in short-term mean temperature^[16].

Population-level data reveal broader impacts. Thompson et al. reported that a 1 °C increase in mean monthly temperature is associated with a 1.5% rise in suicide incidence and a 9.7% increase in heatwave-related psychiatric admissions^[17]. Similar associations have been observed for suicide risk, mental-disorder-related mortality, and PTSD severity

following extreme weather events, including cyclones^[18]. Together, these results point to a global and escalating mental health burden that necessitates proactive adaptation within public health systems.

Despite this burden, psychological responses to disasters are not uniformly negative. Studies, including the work of Rebecca Solnit, describe how moments of trauma often coexist with strong social bonds, collective action, and community resilience. Such prosocial responses highlight that climate-related psychological outcomes reflect a complex interplay of individual vulnerability, environmental stressors, and shared coping mechanisms rather than a purely pathogenic process.

3.2. Indirect Mental Health Consequences

Social, economic, and environmental disruption account for the majority of the indirect effects of climate change on mental health. In many cases, Earth's changing climate is creating the conditions for famine, civil strife and uprooted populations, which only add to the burden on mental health. Indirect impacts include the loss of a sense of community, loss of identity, and damage to cultural integrity, specifically in populations facing forced migration^[6].

Displacement significantly results in feelings of isolation and detachment, exacerbating pre-existing mental health conditions and contributing to broader psychosocial distress. Additionally, the indirect mental health impacts of climate change are particularly pronounced among vulnerable groups, especially those in low-income communities. These communities face the compounded challenges of climate change risks and social marginalization, which intensify their susceptibility to the stressors associated with climate change^[4,6].

3.3. Overarching Psychosocial Consequences

Climate change can have numerous psychosocial effects, such as persistent emotional distress caused by the awareness of environmental degradation and its possible further consequences for future generations. This distress can take the form of eco-anxiety—a chronic state of worry about environmental collapse and the planet's future which has been associated with insomnia, social withdrawal and an overwhelming sense of dread^[19-21]. The mental health im-

pact of climate change underscores the pressing demands for specific mental health responses to these new challenges, and represent critical support for both individual mental health and community resilience in the face of continued environmental destruction.

4. Current Evidence on Mental Health Consequences

4.1. Eco-Anxiety and Its Correlations

Eco-anxiety is a persistent psychological distress resulting from awareness of the decline of the environment. In recent years, extensive research has shown that this construct is consistently linked to a number of mental health outcomes. A recent systematic review, which aggregated 35 studies ($N \approx 45,667$), found a small to large positive correlation between environmental anxiety and psychological distress, depression, anxiety and symptoms of stress, measured using validated tools^[4]. The association with post-traumatic stress disorder and pathological anxiety was mixed, indicating a diversity in the way environmental anxiety manifests itself in different contexts and tools. These findings are consistent with previous DASS-21 reports which identified a positive correlation between environmental distress and stress in Europe, Oceania and North America ($r = 0.22-0.46$)^[4]. Stress remained one of the most reliable correlates when statistical models controlled for other symptoms and environmental anxiety was operated as anxiety rather than as a non-differentiated concern, tended to be more strongly correlated with general distress.

Conflicting correlations emerge in specific sub-domains of environmental anxiety. Some research reports a slight negative correlation between climate concerns and stress ($r = -0.24$) in specific samples, which may reflect adaptive coping mechanisms or the taking of meaningful measures to reduce stress under certain conditions^[4]. This pattern is supported by evidence in young adults, where environmental anxiety predicts pro-environmental behaviour but also reduced aspects of life satisfaction, showing that emotional responses to climate threats can both motivate action and impair subjective well-being^[19,20].

Demographic variables interact systematically with environmental anxiety. Population-based work shows higher rates in younger people and women, with smaller but con-

sistent associations linked to exposure to extreme weather events (e.g., floods, drought, fire). These exposures correlate with increased ecotoxicity scores, even after adjustment for other factors, although the magnitude of the effect is modest^[21]. The social and political context also shapes the prevalence of environmental anxiety: distrust of government action and frequent climate discourse in communities are associated with greater distress, while socio-economic and cultural variables change the perceived risk and importance^[22].

According to available data, eco-anxiety is neither uniform nor unidimensional. Rather, it exists along continua that are characterized by individual appraisal processes, social support resources, and personal experiences with environmental change. Although extensive information seeking and firsthand experience of climate events have both been linked to increased eco-anxiety, their effects differ by subdomain of the construct, suggesting intricate pathways of influence.

4.2. Pathological Worry

Individuals who suffer from environmental anxiety frequently experience persistent fear, are alert all the time, worry about potential threats, and feel unsafe in their surroundings. These symptoms, which persist even in the absence of a direct or likely threat, are comparable to those of traditional anxiety disorders^[4]. Most people feel increased concern that does not seriously affect their daily lives, so they fall into the subclinical range. Still, a significant number of people experience major disruptions in their daily activities, similar to the physical and mental strain seen in major depressive episodes and other mental illnesses^[4,23].

Individuals who suffer from environmental anxiety frequently experience persistent fear, are alert all the time, worry about potential threats, and feel unsafe in their surroundings. These symptoms, which persist even in the absence of a direct or likely threat, are comparable to those of traditional anxiety disorders^[20,21]. The distress often comes not from personal experience, but from media stories, scientific predictions, or worries about future generations. Because the threat is not always immediate, some people become more vulnerable to long-term fear and worry.

The debate about how to classify environmental anxiety affects how people are treated and what services they receive. If it is mostly seen as a social or philosophical issue,

those affected might not get recognized in clinical care. But if it is defined too strictly as a mental illness, there is a risk of labeling a normal reaction to real environmental problems as a disorder. Finding a balance between these views is important for creating fair guidelines and making sure people in serious distress get the help they need.

4.3. Implications for Mental Health Practice and Policy

Growing evidence shows that eco-anxiety is becoming a common psychological experience that should be considered in mental health assessments. Mental health professionals are now encouraged to ask clients about their feelings toward climate change, not just when they show obvious distress but also during regular checkups^[4,21]. These questions can help clinicians find hidden anxieties that patients might not mention on their own, either because of stigma or because they do not see ecological distress as a mental health concern.

On the policy side, the climate crisis is now seen not only as an environmental or economic problem but also as a public health issue with psychological effects. Policymakers are being encouraged to include mental health in climate mitigation and adaptation plans^[4,6]. This means preparing for more demand on mental health services after disasters, funding prevention programs, and starting public projects that help people build psychological resilience^[6]. Worries about climate change often connect with factors like income, location, and political risk, so policies should not take a one-size-fits-all approach. Making psychological support easier to access in disaster-prone areas, training community health workers, and raising mental health awareness in climate policy discussions are all ways to move forward.

4.4. Mental Health Consequences of Extreme Weather Events

The mental health effects of climate change go beyond just anxiety about the future. Extreme weather can make symptoms worse for people with existing mental health conditions, and some studies have found higher death rates after events like heatwaves, hurricanes, and floods^[5]. When people lose access to medication, support from family or friends, or emergency services, their mental health often

suffers more. New cases of psychiatric disorders have also been seen in communities hit by disasters, with large increases in posttraumatic stress disorder, anxiety, and major depression^[24].

Certain groups are at higher risk. Women, older adults, and people with low incomes are often more vulnerable to mental health problems after climate-related disasters^[3,6,25]. Disasters can make existing social inequalities worse, making it harder for people in low-income communities to recover both physically and emotionally. For many survivors, the trauma continues even after the danger is over, leading to long periods of grief, displacement, and uncertainty about the future.

These trends show why long-term support after disasters is so important. Short-term aid can help with injuries and basic needs, but mental health recovery often takes ongoing support, therapy, and rebuilding communities. Public health systems need flexible mental health plans that can quickly respond to increases in distress and trauma caused by climate events.

4.5. Vulnerability across the

Lifespan Children are among the most vulnerable to the psychological effects of climate change. Stressful environmental conditions during pregnancy or early childhood can affect development in ways that last into adulthood. Studies have found links between prenatal exposure to environmental challenges, such as natural disasters, and a higher risk of psychiatric disorders later in life^[2,24]. Disruptions during key stages of development can impact emotional control, thinking skills, and how children handle stress, raising their risk for problems throughout their lives.

Young people are also forming their sense of identity and thinking about their futures. Hearing frequent warnings about climate instability can shape how they see the world, sometimes leading to feelings of helplessness and fear about what lies ahead. These worries can grow stronger when they see governments and institutions not taking enough action, despite what scientists recommend. Early support, like mental health programs in schools, resilience training, and strong family support, can help protect young people from these

effects.

Older adults face different challenges. Many seniors have trouble adapting to disasters or long periods of heat because of physical weakness, isolation, financial struggles, and dependence on reliable infrastructure. After such events, they may experience grief over damaged communities, losing their homes, or problems accessing healthcare. Support services designed for older adults, like community monitoring and mental health programs that consider their needs, can help reduce these risks.

5. Emerging Challenges

Climate change is affecting environmental, social, and health systems in ways that add to people's psychological stress. These effects are widespread, shaping daily emotions, economic stability, identity, and how people see their future. As extreme weather becomes more common, mental health services are seeing new types of distress that do not fit current clinical categories. People with existing mental health conditions may see their symptoms get worse, while others develop new problems linked to environmental instability. One clear trend is the rise in climate change distress among young people, who often feel fear and uncertainty about their future in a changing world^[26]. Their struggles are not just emotional—they also face real losses like food insecurity, displacement, loss of cultural identity, and difficulty meeting basic needs.

This situation is made worse when people's basic needs for safety, shelter, and resources are not met, especially in humanitarian settings where new environmental problems add more physical and mental stress^[27]. The links between climate impacts and mental health are complicated. They include stress on the body, changes to daily routines, weaker community ties, and the mental effects of ongoing environmental threats. **Figure 1** illustrates how environmental damage can simultaneously harm physical health, weaken community cohesion, and heighten emotional stress. It also highlights four key challenges to effective action: unequal vulnerability across groups, weak integration of mental health into climate policy, limited community-based responses, and significant gaps in research.

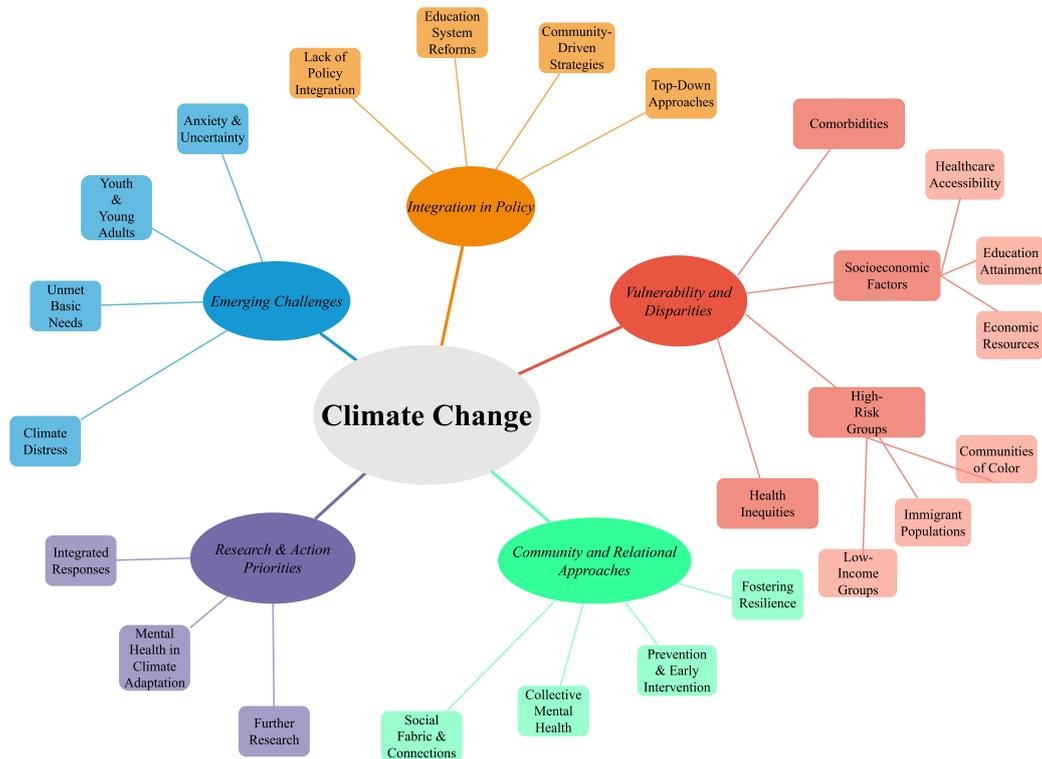


Figure 1. Schematic representation of the multidimensional pathways linking climate change, socio-environmental stressors, and mental health outcomes, emphasizing vulnerability gradients, systemic disparities, and evidence-based adaptive strategies.

5.1. Vulnerability and Disparities

The psychological and emotional effects of climate change do not fall evenly across society. They are shaped by social position, economic resources, geographic location, educational opportunity, and access to healthcare. People with higher incomes and better access to mental health services often have more capacity to recover after environmental disruptions. By contrast, populations with limited socioeconomic resources tend to live in areas that are most exposed to environmental risk, such as flood-prone neighborhoods, regions with inadequate cooling during heatwaves, or urban zones with lower air quality^[7]. These communities may also enter environmental crises with a heavier burden of chronic conditions that worsen under heat stress, air pollution, or infectious disease outbreaks tied to environmental shifts.

Communities of color, migrants, refugees, Indigenous groups, and low-income households often face multiple intersecting barriers—structural racism, limited medical access, language obstacles, less political representation, and fewer material resources for recovery^[7]. For example, an evacuation order during a climate-driven emergency does not mean the same thing for everyone. A family with private

transportation and stable income may be able to relocate quickly, while a low-income household may lack transportation, childcare, or even a safe destination. When government response systems fail to account for these disparities, mental health consequences can intensify. The sense of being trapped or abandoned has deep emotional repercussions.

Climate hazards also magnify preexisting mental health concerns. Many people in lower-resource communities already deal with stressful working conditions, discrimination, unsafe housing, or food insecurity. When environmental stressors are added on top of these daily pressures, the cumulative psychological load increases sharply. Such conditions demonstrate why mental health policy needs to look beyond individual diagnosis and instead take the ways that housing, employment, transportation, and public infrastructure influence emotional well-being. Scholars have argued for the development of approaches that are capable of understanding emotional distress as the outcome of environmental exposure combined with structural inequality^[28]. Without a broad and comprehensive framework, responses to climate-related mental health challenges will continue to fall short of the needs of the most affected groups.

5.2. Integration of Climate Change in Policy

Although awareness about the psychological consequences of climate change is increasing, many national and regional policies still treat climate matters as environmental or economic issues rather than mental health priorities. Education systems and public health policies often operate in separate spheres, with climate initiatives focusing on emissions, energy systems, agriculture, or disaster response, while mental health policies concentrate primarily on traditional psychiatric disorders. This disconnect leaves a critical gap.

Countries such as Pakistan illustrate this need clearly. There has been repeated emphasis on integrating climate adaptation and environmental awareness into the basic education curriculum, helping young people understand not only the environmental science but also the emotional resilience needed to cope with uncertain ecological futures^[6,21]. Curriculum-level interventions encourage students to gain knowledge early in life, increasing their ability to recognize psychological strain related to environmental change.

National strategies have often relied heavily on top-down planning, in which experts create broad climate response policies without sufficiently consulting the communities most affected^[29]. Such systems may implement large-scale environmental reforms successfully while ignoring the emotional and psychological dimensions of those changes. When mental health does not appear in policy documents or funding frameworks, local healthcare providers are left without guidance or resources for addressing climate-related anxiety, trauma, or fear. A shift toward approaches that recognize lived experiences, localized needs, and community-generated solutions is needed to make policies more responsive and practical.

5.3. Community and Relational Approaches

A significant issue is that many mental health systems prioritize treatment over prevention. There is less money for early intervention, community education, or resilience building because the majority of the budget is allocated to treating serious illnesses, hospital stays, medication, and emergency care^[29]. Climate-related emotional strain often builds up slowly, through ongoing stress, environmental decline, loss of jobs, or repeated climate disasters. This makes prevention especially important.

Communities with strong social connections, cooperation between households, and a shared identity often recover better after environmental shocks^[8]. Formal healthcare may not always provide emotional stability, but support from neighbors, family, schools, local organizations, and religious communities can. People can feel more in control and connected by participating in programs like neighborhood preparedness groups, community workshops, group counseling, or local support circles.

If we see mental health only as a personal issue, we miss how much our surroundings shape our feelings. People are rarely alone in their struggles; their distress is shaped by the world around them. When climate change affects jobs, food, or community identity, emotional suffering gets worse. Programs that rebuild trust, bring back cultural traditions, and let communities have a say in decisions help with both practical and emotional needs. These efforts support clinical care by tackling stress where people really feel it: in their families, workplaces, and communities.

5.4. The Need for Further Research

Although research on climate change and mental health has expanded considerably over the last decade, the field remains young. There is no universal clinical framework for assessing or diagnosing climate-related anxiety, grief, or trauma. Many studies rely on self-report scales, which can capture general emotional distress but may not distinguish climate-specific causes accurately. Clearer measurement tools and standardized definitions would help policymakers, healthcare systems, and researchers identify patterns and respond more effectively^[30].

The existing literature suggests that emotional responses to climate change should not be dismissed as exaggeration or a niche psychological concern. People experiencing climate anxiety are often reacting to genuine environmental instability, and their emotional responses carry meaningful information about the health of communities and ecosystems. Growing climate uncertainty means that mental health services, primary care systems, emergency relief agencies, and schools will all need structured guidance on how to identify environmental distress and how to intervene early. Stronger evidence is needed to explore why some people facing severe climate impacts do not develop long-term psychological conditions. Understanding resilience, cultural support, coping

strategies, and community cohesion can guide interventions integrating mental health into climate adaptation.

The methodological challenges in the current research are particularly geographical, as individuals in regions with higher ambient temperatures often differ in socio-economic status, access to healthcare and other environmental exposures. This makes it difficult to isolate a specific effect of temperature on mental health. Future studies should use robust methodological approaches such as in-subject design, multilevel modelling and the integration of large data sets to minimise confounding and to provide more robust estimates of the real impact of climate change on mental health.

6. Mitigation and Adaptation Strategies

6.1. Mitigation Strategies

Mitigation strategies attempt to lower the amount of greenhouse gases in the atmosphere, and they include reducing emissions, increasing energy efficiency, and enhancing natural carbon sequestration, such as forests and wetlands^[31]. Several priority areas for action have been identified by international scientific and policy organizations: increase renewable energy production, redesign cities to reduce energy waste, reduce transportation fuel use, and improve agricultural practices to reduce methane and nitrous oxide emissions^[1]. These actions, often described in technical or economic terms, have mental health implications as well: fewer traumatic events associated with climate change (fewer environmental disasters, or less severe ones) mean fewer people experiencing lasting psychological effects, such as fear, trouble sleeping, grief, and vulnerability^[3]. Mental health challenges associated with disasters are eased by reducing or preventing environmental disasters.

The reduction of disasters is not the only mental health benefit that comes with expanding renewable energy; moving away from fossil fuels can also generate jobs, cleaner air, less pollution, and a sense of a society working toward a safer future, which all contribute to physical and emotional health^[32]. For example, research has shown that reduced air pollution is associated with lower rates of depression and anxiety and a slower rate of cognitive decline. A large review reported consistent associations between PM_{2.5} and other pollutants and internalizing symptoms like depression

and anxiety^[33]. Long-term exposure studies also link ozone to increased anxiety and depressive symptoms^[34]. Meanwhile, cohorts in China have found that less exposure to PM_{2.5}, PM₁₀, and NO₂ predict better cognitive performance over time^[35]. In older adults, indoor air pollutants from cooking fuel and second-hand smoke were found to worsen depression and lead to greater cognitive decline, mediated through poorer sleep^[36]. These findings structure a clear link from environmental improvement to both physical and emotional health.

Community involvement in mitigation is also important. Many people feel powerless or hopeless when facing global environmental problems. Getting individuals and neighborhoods involved in local conservation efforts can help change these feelings. Activities like tree planting, citizen science, water protection, recycling, and climate education give people a real way to take action. Research indicates that feeling empowered to make a difference reduces despair and enhances resilience. Celebrating small achievements fosters progress and strengthens social bonds crucial in facing community challenges.

Mitigation also helps mental health by easing the long-term uncertainty that causes climate anxiety. Many young people worry that their future will be affected by ongoing environmental decline. When governments and communities show they are committed to cutting emissions, young people see that society cares about their future and is willing to protect it. This shared commitment is important for emotional stability, especially for those who see climate change as a personal threat to their lives, jobs, and ability to build a secure family or community (**Figure 2**).

6.2. Adaptation Strategies

Adaptation strategies recognize that climate impacts are already happening and will continue for years, no matter how quickly emissions drop. Adaptation means getting infrastructure, institutions, and communities ready to handle environmental stress. For example, health systems need to treat heatstroke during heat waves, provide trauma care after floods, and manage breathing problems caused by wildfire smoke. Many areas also need to redesign schools, plan evacuations, strengthen housing, improve cooling, and update water systems to handle seasonal shortages^[6,37]. These actions also affect emotional well-being. When people know

their environment is built to protect them, they tend to feel less ongoing stress and worry.

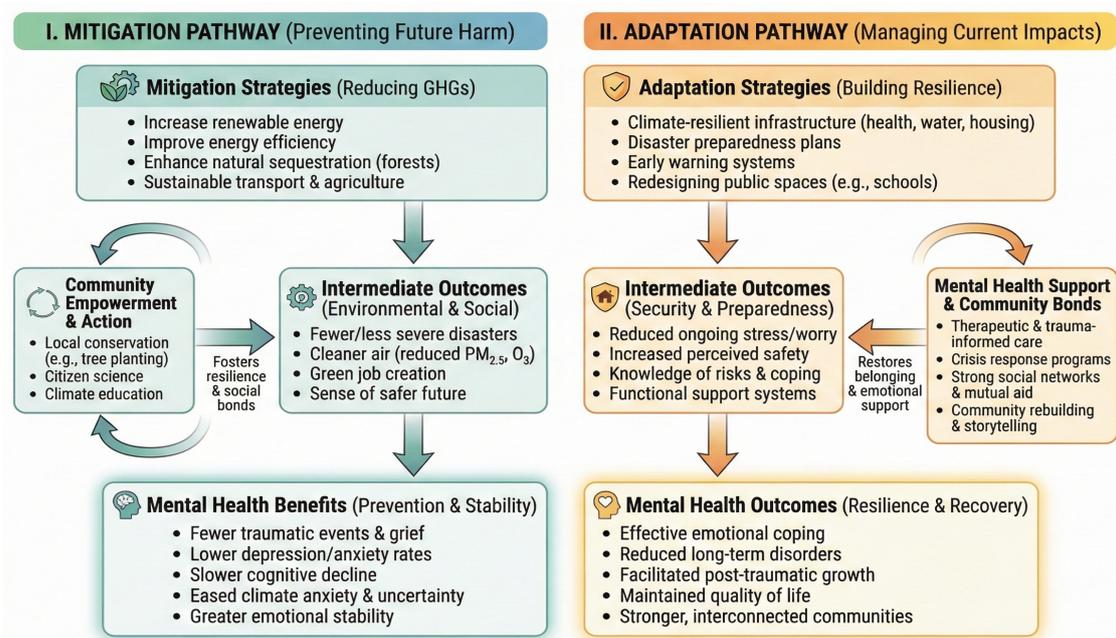


Figure 2. Climate Action Pathways Linking Mitigation and Adaptation Strategies to Mental Health Outcomes.

Mental health adaptation includes a wide range of interventions designed to help individuals manage emotional responses to environmental change. A key component is therapeutic support, which includes crisis response programs, group interventions, counseling services, and methods based on community psychology (Figure 2). These services assist people in coping with lifestyle disruption, managing fear during recurrent climate disasters, and processing grief related to ecosystem loss. Experiences such as loss of livelihood, permanent relocation, cultural fragmentation, and the death of family or neighbors require trauma-informed care. Without such support, emotional wounds can deepen into long-term disorders that interfere with functioning and reduce overall quality of life^[38].

Education is also important for helping people adapt mentally. When communities know about climate risks, they can make better choices, feel less helpless, and get their families ready. Schools, universities, and public campaigns can teach both environmental science and ways to cope, manage stress, and accept normal feelings about climate change. Many people feel ashamed or avoid talking about climate anxiety, but awareness campaigns can help by showing these feelings are normal responses to real threats.

Community bonds are key to emotional recovery after disasters. When storms, fires, or floods happen, people often turn first to neighbors, friends, and local leaders before outside help arrives. Strong networks make it easier to get emotional support, share resources, and solve problems together^[6]. After a crisis, programs that rebuild community identity—like memorials, local rebuilding, cultural events, storytelling, or mutual aid—can help ease pain and restore a sense of belonging. For many, the hardest part of environmental trauma is feeling alone or ignored. Community-focused adaptation helps by making sure no one faces these challenges by themselves.

International agreements highlight the need to include mental health in climate action. Documents like the Sustainable Development Goals and the Sendai Framework call for responses that see environmental crises as connected to disaster resilience, public health, and climate readiness^[1,2]. Societies can assist individuals prior to, during, and following environmental changes when mental health is a key component of adaptation planning. In addition to preventing harm, the goal is to support communities in growing stronger, more self-assured, and more interconnected.

7. Conclusions

The mental health consequences of climate change represent a profound and multifaceted challenge, intertwining environmental, social, and psychological dimensions. Climate change directly impacts mental health through extreme weather events and indirectly through social and economic disruptions, disproportionately affecting vulnerable populations such as low-income communities, children, and indigenous groups. Eco-anxiety and pathological worry have emerged as significant psychological phenomena, reflecting broader societal concerns about environmental sustainability and future uncertainties. Moreover, the trauma and displacement caused by climate change highlight the critical necessity for specific mental health support and policy measures. It is essential to incorporate mental health aspects into strategies for climate adaptation and mitigation, as these initiatives are vital for enhancing resilience in individuals and communities alike.

Despite an increasing awareness of the problem, our comprehension of the long-term mental health effects of climate change, especially in low- and middle-income nations, remains lacking. Closing these gaps calls for a holistic strategy that integrates research, innovative policy-making, and initiatives led by communities. By emphasizing mental health within the wider context of climate action, communities can strive to enhance resilience and foster well-being amid an unpredictable environmental future.

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Institutional Review Board Statement

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Informed Consent Statement

Not applicable. This study did not involve human participants, and informed consent was not required.

Data Availability Statement

No new data were created or analyzed in this study.

Conflicts of Interest

The author declares no conflict of interest. The author used artificial intelligence tools solely to assist with language editing, grammar improvement, and formatting. The author reviewed and take full responsibility for the accuracy and integrity of all content in the manuscript.

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