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# The Role of Nurses in Addressing Climate-Driven Mental Health Challenges: A Narrative Review

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**Systematic Review**

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# Abstract

**Background:** Climate change is one of the most critical public health challenge. Exposure to extreme weather events can lead to anxiety, depression, post-traumatic stress disorder (PTSD), eco-anxiety, ecological grief, and suicidal ideation. Nurses as frontline community-based professionals, play a vital role in addressing climate-driven mental health impacts.

**Aim/Objectives:** Aims to explore the roles and challenges of nurses in addressing mental health impacts associated with climate change. The specific objectives are: (1)to identify the climate driven mental health challenges (2) to examine nursing interventions for supporting affected individuals, and (3) to identify barriers influencing nurses' ability to respond effectively.

**Methods:** The literature search was conducted using PubMed, Google Scholar, CINAHL, PsycINFO and Scopus. A purposive sampling technique was applied. Inclusion criteria were: (i) empirical studies, reviews, commentaries that reported mental health related to climate events (ii) explicit description of nurses' roles, interventions. The quality of the included studies was assessed by considering study design, clarity of objectives, and relevance to the review question. After title and abstract screening, 10 were excluded due to irrelevance. A final total of 08 articles was included based on full-text review.

**Findings:** Nurses play a central role in screening, providing psychoeducation, engaging with the community, building resilience, and advocating for patients. Barriers to effective nursing responses included limited climate- and mental-health-specific content in nursing curricula, scarce resources and staffing during climate emergencies, lack of standardized protocols and emotional burden and burnout among nurses.

**Conclusions and Recommendations:**Nurses are pivotal in mitigating climate-driven mental health challenges through early identification, holistic care, community engagement, and advocacy. Future research should focus on evaluating specific nurse-led interventions for eco-anxiety, ecological grief, and disaster-related distress.


# Background

Climate change has been associated with adverse health outcomes, both physical and mental well-being of people (Leyva, Beaman and Davidson, 2017). Although the physical health effects of climate change are urgent to address, the effects on mental health are often subtle and require assessment skills, diagnostic skills and interventions. Health professionals well address climate change-related physical health, but there is less emphasis on the impact of climate change on the mental health of people all over the world. Climate change-related mental health impacts are an emerging area of concern for health professionals to address across the health care spectrum. It can directly and indirectly affect the mental health and psychosocial well- being of humans. Mental health impacts may present as acute or chronic problems, ranging from sudden onset to long lasting effects of climate change in the world. These include anxiety, posttraumatic stress disorder (PTSD), depression, substance use disorders, phobic and

somatic impairment, suicidal ideation, and suicide. Also mental health concepts specific to climate change, which include ecoanxiety and solastalgia (Brown, White and Nicholas, 2022).

Health professionals, including nursing professionals, have an important role in managing the impact of climate change on the mental health of human beings. Nurses are well positioned to be able to meet the acute and chronic psychological needs of those impacted by climate change and its associated traumas (Hallett et al., 2023). They are frontline of healthcare professionals, and also likely carry a large share of the increased mental health burden of climate change (Usher AM et al., 2023). Understanding the assessment, evaluation, diagnostic, and intervention processes and plans of care, nurses can reduce potential mental health consequences of climate change as well (Brown, White and Nicholas, 2022). Nurses have developed core skills and responsibilities in experiencing distress and ill health due to climate change, through advocacy and maintaining therapeutic relationships to enable a safe structure for growth and healing to occur. They require necessary education to increase appropriate skills to manage, respond, and support disaster situations to provide effective care for people. Also, nurses support people to reconnect with their community, network and the environment around them and educate and empower (Hallett et al., 2023).

Nurses must advocate for research,education and policies that support disaster-resilient infrastructure and human services that allow communities across the globe to effectively mitigate the impact of climate change on human health (Liu, Potter and Zahner, 2020). Even though being prepared is very important, there are many obstacles. Nursing curricula often don’t have enough time to teach about climate change, so nurses lack proper skills. Also there are few teachers with expertise in environmental health, which delays good training. Facing repeated disasters can cause stress, burnout, and compassion fatigue among nurses, reducing their strength to cope. To overcome these problems, strong solutions are needed intraining, policies, and funding (Fallatah et al., 2024).

In this narrative review, we explore and synthesize the available literature on the roles, experiences and challenges of nurses in addressing mental health impacts associated with climate change, with a focus on mental health issues, nursing interventions and the factors influencing their practice. Specifically, this review aims to identify the various mental health impacts linked to climate change that nurses frequently encounter in their practice. Furthermore, it examines the interventions and strategies nurses employ to support individuals affected by climate-related psychological distress. Additionally, this review aims to uncover the barriers and facilitators that influence nurses’ ability to respond effectively to these climate-driven mental health challenges. Through this comprehensive exploration, provide insights that can inform nursing practice, education and policy development, ultimately enhancing the capacity of nurses to mitigate the mental health impact of climate change.

## Methodology

The literature search was conducted using PubMed, Google Scholar, CINAHL, PsycINFO and Scopus. A purposive sampling technique was applied. Inclusion criteria were: (i) empirical studies, reviews,

commentaries that reported mental health related to climate events (ii) explicit description of nurses' roles, interventions. The quality of the included studies was assessed by considering study design, clarity of objectives, and relevance to the review question. After title and abstract screening, 10 were excluded due to irrelevance. A final total of 08 articles was included based on full-text review.

## Results / Key Findings

**1. Mental health impacts associated with climate change**

This section focuses on climate change's effects on mental health. Evidence on the associations between climate change and mental health in humans covers two key themes: the direct and indirect effects of climate events including anxiety, depression, PTSD, suicidal ideations, eco- anxiety, other mental health issues and the vulnerable populations that can be adversely affected

by climate change.

# A. Direct and indirect effects

**Depression & Anxiety -** Climate change affects mental health both directly and indirectly, triggering disorders such as depression and anxiety. Extreme weather events (e.g. Cyclones, floods) can lead directly to psychological stress. After a flood, 14% screened positive for depression (Leyva, Beaman & Davidson, 2017). Individuals' experiences from rural communities concluding that the threat of drought and flood is intertwined and contributes to decreased well-being from stress, anxiety, loss and fear (Charlson et al., 2021).

**Post-Traumatic Stress Disorder (PTSD) -** PTSD frequently arises after disasters such as floods and similar climate events. Older individuals show high levels of PTSD symptoms. 17% of older people reported PTSD symptoms that may require management following floods (Leyva, Beaman & Davidson, 2017). PTSD is commonly described in the health literature as a product of extreme weather events (Brown, White and Nicholas, 2022).

**Suicide -** Suicide has emerged as a significant mental health linked to climate stress. Economic instability after climate-triggered livelihood loss (e.g. farmers, natural resource-dependent workers) dramatically increases suicide risk, also affecting surviving family members (Brown, White & Nicholas, 2022). Temperature also been associated with self-harm and suicide rates. Temperature variability explained more than 60% of the total suicide variance over several decades. A large data study from the U.S. and Mexico revealed that suicide rates rise by 0.7% and 2.1% respectively for each 1°C increase in monthly average temperature (Charlson et al.,2021).

**Aggression & Violence -** Extreme heat events have been associated with a general increase in

aggressive behavior, higher rates of criminal activity and increased suicide rates (Anderko et

al., 2016). For every 1°C increase in annual temperature, there is an associated 6% average increase in homicide rates (Brown, White and Nicholas, 2022).

**Sleep Disturbances -** Temperature affects sleep quality significantly as higher night-time temperatures delay sleep onset and reduce duration especially among older adults, women and those in lower-income regions. Disrupted sleep is commonly a key symptom in climate-related conditions like anxiety, mood disturbances and PTSD (Brown, White & Nicholas, 2022).

**Eco-Anxiety & Ecological Grief -** Extended environmental stressors like resource loss and ecosystem degradation cause emotional distress in humans. Feelings of long-term loss tied to ecological change and disrupted identity cause chronic anxiety, becoming eco anxiety. Ecological grief which is likely to increase steadily in the coming years, may present as grief associated with physical ecological loss, grief associated with loss of identity and grief associated with future anticipated loss.(Brown, White and Nicholas, 2022).

**2. Nursing interventions and strategies for mental health impacts due to climate change**

## a.Awareness, screening, and follow-up monitoring

Nurses are first responders to increased presentations from extreme weather events and they identify and treat for mental health impacts of climate change (Usher AM et al., 2023). Nurses must become aware with emerging concepts like eco-anxiety and solastalgia terms describing anxiety and grief related to environmental degradation. Awareness of these enables clinicians to better identify and empathize with aff ected individuals (Brown, White and Nicholas, 2022). It is important to consider eco-anxiety nurses within mental health assessments over and above traditionally recognized mental health disorders. Nurses should give attention to eco-anxiety symptoms such as maladaptive worry, cognitive impairment and/or functional impairment in one or more domains (Usher AM et al., 2023). Screening can assist Nurses to identify individuals at a baseline higher risk for mental illness or already experiencing mental illness. Sleep disturbance may be a nearly universal manifestation of climate change-related distress and nurses should routinely assess that. Nurses should identify vulnerable populations for climate change-related mental health impacts including young children, pregnant women, Black, Indigenous and people of color communities, older adults, refugees, individuals with pre-existing chronic health needs and/or people experiencing homelessness. Nursing practitioners (NP) should consider baseline and

ongoing screening for psychiatric symptoms particularly for individuals who are known to have

experienced severe climate events. They can discuss with their clients and do a formalized assessment using validated screening tools for people both acute after an extreme weather event and ongoing throughout the care, using the validated screeners (Environmental Distress Scale is a validated tool to examine the emotional impact of climate change and environmental degradation). Also, Nurses must assess and interpret client information to determine risk for ecological grief. PTSD and other

psychological symptoms may not appear immediately following a climate event. Hence, nurses can do longitudinal follow-ups to catch late-emerging symptoms, sometimes six months or more post-event (Brown, White and Nicholas, 2022).

## b. Building resilience

Nurses can build resilient capacity by maximizing personal strength, adaptive coping strategies and personal protective behaviors. At the family and community level, building social support from family and community-based organizations is an important measure (Leyva, Beaman and Davidson, 2017). Nurses are working towards viewing people as co-subjects with nature and supporting people to work with to immerse themselves in a deeper relationship with their surroundings (Hallett et al., 2023). Nursing practitioners can work to create therapeutic relationships with affected clients through the use of empathy, open dialogue, client support systems and adaptive coping, support of clients' spiritual/family practices related to loss, and avoidance of social grief responses. NPs are well positioned to identify needs for enhanced coping and resiliency and work collaboratively with the client to identify resources for community support (Brown, White and Nicholas, 2022). Also nursing role includes supporting people to reconnect with their community, network, and the environment around them, and educating and empowering people to see the healing that the planet is able to provide, as it has done for many thousands of years (Hallett et al., 2023).

## c. Policy making

The role of the nurse is also a part of activism. The issues surrounding access to green spaces clean air and the future of the planet are inherently political and adopting a proactive stand is now paramount. It could simply start with one nurse, in one team, locating opportunities to support, educate, and lead colleagues and service users in navigating the, at times, overwhelming gravity of the global public health crisis currently being faced (Hallett et al., 2023). Promote community-level mental health initiatives that target vulnerable populations, including children and the elderly, as well as low-income populations that have limited resources to build resiliency during and after climate-change related disasters.

## d. Community education

NPs can also become involved in prevention-focused mental health care, health education, awareness and policy advocacy regarding the health considerations associated with climate change (Brown, White and Nicholas, 2022). They are balancing climate disasters' psychological effect with counseling, as well as with community interventions and training on community health education for climate resilience. Empowered communities to adopt preventive measures as well. Nurses empower vulnerable groups in learning resilience strategies. Participation of the community is necessary for population-level education on climate adaptation measures (Fallatah et al., 2024). Nurses are proficient in utilizing the skill of psychoeducation to support effective outcomes across the full range of different mental health

conditions (Hallett et al., 2023). Nurses are taking steps to increase knowledge of the effects of climate change on mental health in the public and to prepare for possible hazardous climate events in order to minimize their impact on health and well-being. Advancing mental health awareness and planning within the context of climate change is necessary and urgent (Liu, Potter and Zahner, 2020).

**3. Barriers and challenges of nurses addressing mental health impacts**

Mental Health Nurses often struggle to acknowledge and process their own climate-related distress within their professional roles. Within the profession, access to this specialized support to navigate professional and personal distress to climate anxiety and planetary health is lacking (Hallett et al., 2023). Educational constraints also pose significant obstacles. While emerging nurse practice trends demand competencies in disaster preparedness, environmental health and cultural responsiveness, many nursing curricula still fail to include climate-specific content (Fallatah et al., 2024). Highlight that dense curricula, limited teaching time and a shortage of educators with environmental health specializations hinder the integration of such vital topics. Even though the International Council of Nurses urges countries to include climate change in nursing education, it is still not widely adopted.

# Discussion

In this paper, we reviewed the evidence on the associations between climate change related mental health events and the role of nurses in addressing these impacts. Much of the evidence is based on cross-sectional and observational designs, showing correlations between climate events and pertinent mental health outcomes, highlighting the important role of nurses. The available evidence points to consistent and important findings on the associations between changes in climate and mental health impacts, focusing on nurses' roles. The findings of this review affirm that climate change poses a profound challenge to mental health, with impacts ranging from depression, anxiety, and PTSD to suicide, aggression, and eco-anxiety. These outcomes are compounded by the disproportionate vulner ability of populations such as women, children, the elderly and those living in poverty or with chronic illness. This pattern echoes international evidence that identifies climate change as a “risk multiplier” intensifying existing inequities (Charlson et al., 2021; Brown, White & Nicholas, 2022).

Within this evolving landscape, nurses hold a unique and multifaceted role. Positioned as frontline responders, they are often the first to detect psychological distress following climate disasters and can carry out preemptive screening, monitoring, and follow-up to capture late- onset symptoms such as PTSD. Their holistic caring approach further allows them to recognize newer constructs like eco-anxiety and ecological grief, broadening the scope of mental health assessment beyond traditional categories. At the community level, nurses act as educators and advocates, empowering individuals and families to build resilience and adapt to climate stressors. Through psychoeducation, policy advocacy, and community engagement, they help address both immediate psychological impacts and long-term adaptation needs. However, systemic barriers, including limited curricula on environmental health, lack

of training in climate-specific competencies and the absence of formal support for nurses coping with their own eco-anxiety, remain significant

challenges. Cross-regional comparisons suggest that while high-income countries have generated

considerable research on climate-mental health links, low- and middle-income countries (LMICs) remain underrepresented. This is concerning given their heightened vulnerability due to resource dependence, recurrent disasters, and weaker healthcare infrastructures. The scarcity of nurse-focused research further limits understanding of how nursing can be optimized to mitigate climate-related mental health impacts in such contexts.

## Recommendations

Future directions in responding to climate change and mental health must focus on strengthening both practice and policy. First, there is a need to develop and validate reliable screening tools for climate-related distress including eco-anxiety and ecological grief, with attention to cultural adaptation and application in vulnerable, resource-limited populations. Nursing education should integrate climate-focused content, such as environmental health, adaptation and disaster preparedness, across undergraduate, postgraduate and continuing professional development programs to prepare nurses as climate competent practitioners. Providing safe and reflective spaces for nurses to process their own climate-related anxieties, supported by robust leadership and regulatory bodies. At the systems level, expanding equitable access to mental health care through targeted funding, telehealth innovations and outreach in rural and underserved areas is vital for reducing climate injustice. To meet rising demand, investment in workforce capacity, counseling services and improved coordination between emergency and community mental health services will be essential. Finally, nurses should play a prominent role in global advocacy and interdisciplinary collaboration, partnering with health authorities, community agencies and international organizations to ensure equitable, climate-adapted mental health responses.

## Summary

This review brings together current evidence on the intersection of climate change and mental health, highlighting both the significant psychological impacts of climate events and the central role of nurses in addressing these challenges. Climate change has been consistently linked to a wide range of mental health issues including depression, anxiety, PTSD, suicide, aggression,sleep disturbances and emerging constructs such as eco-anxiety and ecological grief effects that are most pronounced in vulnerable groups such as children, women, older adults, individuals with chronic illness and those living in poverty. Nurses are uniquely positioned as frontline responders, holistic caregivers and advocates who can perform early screening, provide psychoeducation, build resilience and engage communities in climate adaptation.

However, systemic barriers remain including the lack of climate-specific nursing education, limited institutional support to address nurses' own eco-anxieties and insufficient research from low- and middle-income countries, where populations face the greatest risks. Addressing these gaps will require validated screening tools for cli mate-related distress, expanded nursing

curricula integrating planetary health and policies that enhance equity in access to mental healthcare, particularly for disadvantaged regions. Strengthening global advocacy, fostering interdisciplinary collaboration and expanding health system capacity will further position nurses as key agents in promoting both individual well-being and community resilience in the

face of climate change.

## Declarations

# Ethics approval and consent to participate

'Not applicable'

**Consent for publication**

'Not applicable'

# Competing interests

"The authors declare that they have no competing interests"

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# Author Contribution

R.D.Wikramaarachchi was the principle investigator and prepared title , objectives for this Narrative Review and finalized. S.N.S.Rathnayaka done a literature review and S.Siromiya prepared final report.

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# Availability of data and materials

'Not applicable'

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