Rapidly increasing climate change poses a rising threat to mental health, says IPCC

March 1 2022, by Ashlee Cunsolo, Breanne Aylward, Sherilee Harper
Climate change impacts on mental health and adaptation responses in North America

1. Hazard
   - Acute events
     - (e.g., storms, floods, heat events, wildfires)
   - Chronic changes
     - (e.g., heat events, drought, changing seasonal and environmental norms)

2. Vulnerability
   - Socio-economic inequalities
   - Indigenous identity
   - Pre-existing health conditions
     - (e.g., chronic physical and mental health outcomes)
   - Occupation
     - (e.g., farmers, indigenous livelihoods, fishers)
   - Gender
     - (genders differentially affected)
   - Age
     - (e.g., youth and elders particularly at risk)

3. Exposure
   - Direct exposure(s)
     - (e.g., experiencing acute or chronic hazard events)
   - Indirect exposure(s)
     - (e.g., disruption to food systems, cultural activities, place-based knowledge sharing and livelihoods, displacement and relocation)
   - Vicious exposure(s)
     - (e.g., seeing friends and family suffer, mediated experiences of climate change, anticipating future changes)

4. Key adaptation responses
   - Scale of adaptation
   - Institutional
     - State and state-level actions: enhanced locally-based and culturally-relevant mental health services, informed policies, early intervention
   - Community
     - Community planning and design for current and future climate risks, increased climate-informed wellness programming, climate-focused training for health providers
   - Individuals
     - Awareness, validation, preparedness, mental health supports, land-based programming and nature therapy

5. Climate change risks to mental health and wellbeing
   - Mental illness
     - (e.g., PTSD, depression, suicide)
   - Diminished wellbeing
     - (e.g., stress, sadness, climate-related grief and anxiety, impaired mental functioning)
   - Diminished social relations
     - (e.g., domestic violence, loss of culture, reduced social capital)
Climate change poses serious risks to mental well-being. For the first time, a new climate report by the Intergovernmental Panel on Climate Change (IPCC) has assessed how climate change is having widespread and cumulative effects on mental health globally.

Over the past decade, research and public interest on the effects of climate change on mental health have been increasing, as the number of individuals and communities exposed and vulnerable to climate change hazards grows.

Weather and climate extremes such as storms, floods, droughts, heat events and wildfires can be traumatic and have immediate impacts on mental health. Slow onset events like changing seasonal and environmental norms, sea level rise and ice patterns can also affect people's mental well-being.

Growing evidence confirms that the consequences of rapid, widespread and pervasive climate events may include anxiety, PTSD, higher rates of suicide, a diminished sense of well-being (stress, sadness), ecological grief, a rise in domestic violence, cultural erosion and diminished social capital and social relations.

As scientists who contributed to the latest IPCC report Climate Change 2022: Impacts, Adaptation and Vulnerability, we are pleased that this Sixth Assessment Report (AR6) assesses climate change impacts on mental health for the first time in detail, representing a major advancement and new contribution.
Significant threats

The Earth will likely reach 1.5 °C of warming above pre-industrial levels by 2040 under intermediate and high greenhouse gas emissions scenarios, bringing with it higher temperatures on land and in the ocean, declining sea ice, more heat waves, more rainfall in some regions and a greater chance of drought in others.

With increasing exposures to these hazards comes greater incidences of negative mental health outcomes. The findings outlined in the report confirm the depth, breadth and significance of the ways climate change impacts mental health. This synthesis of global research indicates that these negative mental health outcomes are on the rise and unequally distributed due to climate change.

Here are three things that the latest IPCC report tells us about climate change and mental health in North America.

1. There is greater scientific understanding about the ways that climate change negatively impacts mental health.

When the IPCC Fifth Assessment Report (AR5) was published in 2014, there was emerging yet limited research on mental health outcomes. The report mentioned that climate change could affect mental health, but there wasn't enough published research available then to fully assess its impacts.

As the volume of research on climate change and mental health has grown, this new report is now able to assess its impact. Researchers have been able to examine how both climate and weather extremes such as storms, floods, droughts and fires and slower-onset climate changes such as warming temperatures and changing environmental norms interact with people's vulnerabilities such as socio-economic inequities, age,
gender, identity, occupation and health and lead to a diverse range of negative mental health outcomes.

For example, a synthesis of global literature found that those exposed to flooding events—such as the floods in southern British Columbia in 2021, in Ottawa in 2019 and Alberta in 2013—experience PTSD, depression and anxiety in the short term and have elevated risks for these mental health outcomes in the long term. Similar mental health outcomes were found for those exposed to wildfires and related smoke, such as the wildfires in the Northwest Territories in 2014, Fort McMurray, Alta., in 2016 and Lytton, B.C., in 2021.

Our own work with Inuit in Nunatsiavut, Labrador, demonstrates the ways in which slower, cumulative impacts from rising temperatures, declining sea ice and changing seasonal, animal and plant patterns disrupt land-based activities and livelihoods, leading to negative consequences for mental and emotional well-being. This includes strong emotional reactions (stress, anger, fear and distress), ecological grief and loss, expressions of anxiety and depression and loss of cultural knowledge and place-based identities and connections.

2. The mental health impacts of climate change are unequally distributed.

Climate change works across intersecting social determinants of health—factors such as age or gender that influence health and how people live—to disproportionally affect certain groups.

For example, AR6 demonstrates that some people and communities are most at risk for increasingly worsening mental health outcomes, due to their proximity to the hazard, their reliance on the environment for livelihood and culture and their socio-economic status:
Agricultural communities already experiencing drought or changing environmental conditions. People living in areas exposed to wildfires and floods. Indigenous Peoples and those closely dependent on the natural environment for livelihoods and culture Women, the elderly, children and young people and those already experiencing chronic physical and mental health issues.

3. It's not too late to promote resilience.

Climate change is not a distant threat. It's a growing reality. Urgent action is needed to protect the mental health of individuals, communities and health systems under rapid climate change and support individual and community resilience and well-being. Resilience can be enhanced through climate-specific mental health outcomes training and policy action, which support health systems to enhance individual and community mental health and well-being.

For example, the American Psychological Association outlines strategies to build personal resilience, including building belief in one's own resilience, fostering optimism, cultivating coping strategies, finding sources of personal meaning, finding social support networks (family, friends, organized groups), fostering and upholding a connection to place and maintaining connections to one's culture.

Incorporating climate-specific training in education and for physicians, nurses, psychologists, psychiatrists, counselors and allied health professionals, is essential for building climate-literate health professionals capable of supporting individual and community resilience and for preparing health systems to better serve those experiencing climate-sensitive mental health challenges.

Finally, health systems and health authorities must take measures to assess and enhance health system readiness to deal with growing mental
health needs and increase disaster planning and training, to further support individual and community resilience to climate change.

**Moving forward**

Based on the available evidence, the mental health impacts from climate change are already widespread and likely to worsen. Even with immediate and strong action towards mitigation and adaptation, climate change will continue to be a serious threat. It is critical that we understand the serious risks that climate change poses to mental well-being and take urgent action to support health systems and enhance individual and community mental health and resilience within a changing climate.

Although more evidence is needed to determine the most effective programs and policies to reduce negative mental health outcomes from climate change, the effectiveness of individual and group therapy, place-specific and culturally responsive mental health infrastructure and nature-based therapies have been well-proven in other areas, and show promise.

Protecting individual and community mental health and well-being requires action from all levels of government and health authorities and integrating a mental health lens and a "Health in All Policies" approach. Major co-benefits for health and well-being in general, and mental health in particular, can arise when decision-makers in all sectors consider and promote health and health equity through adaptation strategies, while taking urgent measures to mitigate greenhouse gas emissions and limit global warming to 1.5 C.

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