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**CLIMATE CHANGE AND
MENTAL ILL-HEALTH:
ALL IN THE MIND?**

There is no doubt that climate change will have a significant impact on human health. The interrelations between our environment and our health are increasingly understood. Yet potentially one of the most significant health impacts remains barely discussed, let alone understood. In this essay I will discuss the impact of climate change on mental illness worldwide and the role of the global health research community in addressing this link.

It may come as no surprise to readers that mental illness in the light of climate change has received little attention. Mental illness holds a low priority status in global health research. Furthermore, the link with climate change may at first seem tenuous and certainly not a priority. Indeed, recent mention of my concern regarding climate change and mental ill-health has been met with some surprised responses. Let me indicate the basis for my concern, focusing on the negative impacts of two predicted effects of climate change: extreme weather events and long-term climatic changes.

As a result of climate change, extreme weather events, such as cyclones and storms leading to flooding, are expected to increase in frequency and intensity. The mental health impacts of disasters, including natural disasters, have been demonstrated. In 2000 parts of my hometown in England were submerged by floodwater. I saw first-hand the impact that stress from those few days had on the mental health status of people. A study confirmed this observation: in Lewes, a nearby town, a four times greater prevalence of psychological distress was recorded among residents whose homes had been flooded.¹ A similar story was widely published in the press in New Orleans. Following Hurricane Katrina the prevalence of serious mental illness doubled.² The impact on mental health was sustained – surprisingly high prevalence of mental illness was reported in newspapers years after the hurricane. The overstretching of mental health services was also reported.

If this was the case in the United States of America, the nation that spends the most on health care worldwide, how could low-income countries with limited mental health systems possibly cope with the mental health impact of extreme weather events? Well, surely mental illness is unlikely to be the priority in the face of extreme weather events in, say, India? The scant evidence on this, points to a substantial but largely unrecorded burden of mental illness. For example, one year after the cyclone in Orissa, India over a third of adolescents were found to have post-traumatic stress disorder, major depressive disorder or generalized anxiety disorder.³ Clearly, further evidence is urgently required on the mental health impacts of extreme weather events in low-income settings, both on the immediate impact and on the enduring impacts months or even years later.

Let us now turn to long-term changes in climate. Drought and desertification are predicted to intensify in many parts of the world, leading to failing crops, loss of livestock, famine and impoverishment. International aid agencies are already preparing to cope with impoverishment as a result of the impact on people's livelihoods. The mental health impact of this is unknown. What is understood, however, is that poverty and falling into poverty are key risk factors for mental illness. There can be little doubt that the stress of failing crops, loss of livestock and impoverishment could have desperate mental health consequences. There is a need to develop an understanding of this relationship and the role of climate change in low-income contexts.

So why does all this matter? Mental illness can cause intense suffering at individual and household levels. There is increasing evidence that households with a person with a mental illness can become trapped in a vicious cycle of mental ill-health and poverty. On top of the economic consequences, mental illness is unbearably stigmatized in many countries and human rights abuses are far too common. Furthermore, mental illness has a profound impact on a range of physical health conditions, affecting HIV transmission, treatment adherence, infant growth and mortality among others.⁴

It will, of course, be the most vulnerable people who suffer the most. The impacts of climate change are predicted to be most extreme in the low-income areas of the world, where there is least capacity to adapt to its effects. And within these areas, it is the least well off who will be most vulnerable to events such as flood or drought. On top of this increased vulnerability, people living in poverty are more likely to develop mental illness. If they do develop mental illness, the poor are the least able to access services to help them and have the least resources to cushion the impact on the household. However, if we choose to take action there are ways to mitigate these impacts, for example through research on low-cost interventions to promote mental health, prevent mental illness and provide treatment and rehabilitation.

Despite the links discussed above, a quick review of the literature on the health impacts of climate change revealed little research on the impact on mental health in relation to other health conditions. This mirrors the overall paucity of research into global mental health. Yet depressive disorders alone are currently the fourth greatest cause of *disability-adjusted life years*⁵ worldwide and predicted to be the second cause by 2030.⁶ Why is it that the burden of mental illness worldwide is so consistently ignored?

A recent series in *The Lancet* called for action on scaling up services for mental disorders.⁷ As we increasingly document the visible impact of climatic changes on health, I call for the global health research community to document the impact of climate change on mental health and, in particular, the impact on the most vulnerable. Such knowledge should be used to advocate for and inform mental health policies and services worldwide. This knowledge and action is essential, alongside further evidence on the feasible interventions to promote, prevent, treat and provide rehabilitation for mental illness in low-income settings.

Documenting and addressing mental health needs now, and in the context of our changing climate, is a matter of health, as well as economics, social justice and human rights importance. It is time to provide evidence that this issue is not "all in the mind". Climate change is a further indication of the need to prioritize mental health on the global health research agenda.

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- 1 Reacher M et al. Health impacts of flooding in Lewes: a comparison of reported gastrointestinal and other illness and mental health in flooded and non-flooded households. *Communicable Disease and Public Health*, 2004, 7:56–63.
 - 2 Kessler RC et al. Mental illness and suicidality after hurricane Katrina. *Bulletin of the World Health Organization*, 2006, 84(11):1–12.
 - 3 Kar N, Bastia BK. Post-traumatic stress disorder, depression and generalized anxiety disorder in adolescents after a natural disaster: a study of comorbidity. *Clinical Practice and Epidemiology in Mental Health*, 2006, 2:17.
 - 4 Prince M et al. No health without mental health. *Lancet*, 2007, 370 (9590):859–877.
 - 5 Disability-adjusted life years (DALYs) for a disease are the sum of the years of life lost due to premature mortality (YLL) in the population and the years lost due to disability (YLD) for incident cases of the health condition. The DALY is a health gap measure that extends the concept of potential years of life lost due to premature death (PYLL) to include equivalent years of 'healthy' life lost in states of less than full health, broadly termed disability. One DALY represents the loss of one year of equivalent full health. (<http://www.who.int/healthinfo/boddaly/en/>)
 - 6 Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine*, 2006, 3:e442.
 - 7 Lancet Global Mental Health Group. Scale up services for mental disorders: a call for action. *Lancet*, 2007, 370 (9594):1241–1252.
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