

**Climate Change, Climate Justice & Mental Health
Knowledge Exchange**

Final Report

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1. Introduction

1.1 Context

Climate change (CC) is a social, economic and a political problem (Hulme, 2009). CC affects the social and environmental determinants of health, which include; access to clean air, safe drinking water, sufficient food, and secure shelter (WHO, 2018). Anthropogenic CC has resulted in warming and precipitation trends which already claim 150,000 lives annually, and a recent report from the World Health Organisation forecasts that between 2030 and 2050 CC will cause an additional 250,000 additional deaths per year (WHO, 2018). A robust evidence base of literature now exists which provides details on the different and interactive ways in which CC affects physical health (such as through altered vector transmission of infections, emergency situations following freak weather events, and through new and emerging environmental challenges such as altered UV radiation) (WHO & WMO, 2012), but little is known about how CC affects mental health, and the possible health outcomes which such effects may have. There are some models proposed within the literature which aim to explain some of these complex and interactive effects between physical environment and different health metrics (see Figure 1, below), but the evidence base around the mental health impacts is sparse.

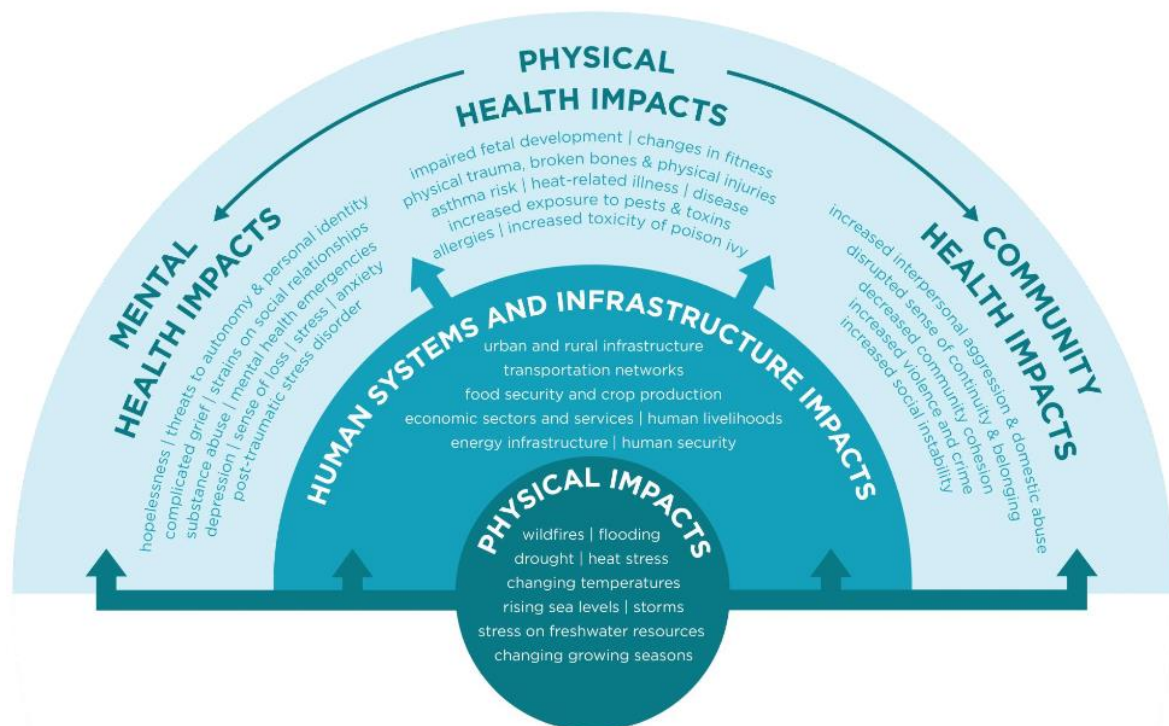


Figure 1: The Interactive Effects of Climate Change on Mental, Physical, and Community Health (from Clayton, Manning & Hodge, 2014).

1.2 Mental Health & Climate Change

Three classes of impact of CC on mental health have been identified (Doherty & Clayton, 2011; Albrecht et al., 2007; Costello et al., 2009; Page & Howard, 2010). These are:

- i) Direct (mental health injuries as a result of the acute or traumatic effects of emergency events)
- ii) Indirect (threats to wellbeing due to the observed impacts of CC, as well as the effects of living in a state of existential threat and uncertainty)
- iii) Psychosocial impacts (which relate to the community and social impacts of CC, although there does not yet appear to be any literature which explains these effects)

(Doherty & Clayton, 2011; Albrecht et al., 2007; Costello et al., 2009; Page & Howard, 2010).

Mental health outcomes following direct impacts of CC include acute stress reactions as well as high levels of acute and chronic PTSD (for survivors, first responders, and even mental health professionals treating affected individuals) (Borque & Willox, 2014; Reacher et al., 2004; Waite et al., 2017; Kessler et al., 2008; Lambert & Lawson, 2013). Indirect effects noted in the literature include increased levels of anxiety and mood disorders (including depression), increased frequencies of violence and conflicts (including spousal abuse), increased incidence of drug and alcohol abuse, an increase in suicidal thoughts and behaviours, and a decrease in sense of self and identity (via loss of place and grief reactions) (Bourque & Willox, 2014). The majority of the literature which reports on the indirect effects of CC on mental health is concerned with investigating the relationship between changing temperatures and incidence of suicide. For example, one such study reports that above 18°C; every 1°C increase in temperature is associated with a 5% increase in violent suicide (Page, Hajat, Kovats & Howard, 2012).

Vulnerable populations are the most susceptible to the mental health impacts of CC (Doherty & Clayton, 2011). This observation is in line with evidence concerned with other effects of CC, and forms the basis of the concept of climate justice: that those who have contributed the least to climate change and global warming are often the most vulnerable to the effects, and therefore require greater support from those who are most resilient to the impacts (Meikle, Wilson & Jafry, 2016). Individuals with pre-existing mental health conditions, for example, will likely be some of the most susceptible and presently there are an estimated 450 million people living with a diagnosed

mental illness, globally (Doherty & Clayton, 2011). Children represent another population likely to be the most vulnerable to the impacts. Learning about CC is – in itself – an emotional experience, and environmental changes and exposure to CC via the media represent powerful sources of stress for both children and adults (Dodgen et al., 2016). There is some emerging evidence which provides hints as to the mental health impacts for children specifically, with 25% of Australian children surveyed in one study reporting that they “honestly believe that [the world] will come to an end before they get older” (Tucci, Mitchell & Goddard, 2007, p.7). This alarming statistic is further echoed in research from Germany, where many young people were reported as believing that the world may end during their lifetime due to CC and other global threats (Albert, Hurrelmann & Quenzel, 2010; Tucci, Mitchell & Goddard, 2007). These converging streams of evidence suggest effects which are cross-cultural, and may have the potential to have severe and enduring impacts on the mental and physical health of individuals, particularly in light of the physical brain changes which can result as a consequence of chronic depression and PTSD in childhood and adolescence – which, in turn, affect cognitive functions such as emotional regulation, memory capacity, threat processing, and vulnerability to recurrence (Weir, Zakama & Rao, 2013; Herringa, 2017).

1.3 Knowledge Gaps

Most of the literature presently available on the impacts of CC on mental health have reported on the direct affects, and these studies consistently demonstrate high levels of PTSD and chronic psychological trauma (Reacher et al., 2004; Waite et al., 2017; Kessler et al., 2008; Lambert & Lawson, 2013). Very few studies have addressed the indirect effects of CC on mental health. Those which do address these effects are typically concerned with the relationship between changing temperature and incidence of suicide (Page, Hajat & Kovats, 2007; Tőro et al., 2009). No studies are available on the effects of CC on mental health for the Global South, and *no studies are available on the effects in Scotland*. Therefore, in terms of climate justice, there is an urgent need for research on these effects. The literature on the relationship between CC and mental health is in its infancy, therefore knowledge gaps are vast and numerous. It was with this back drop that the Mental Health & Climate Justice Knowledge Exchange Event was held; to initiate discussion and foster the exchange of ideas on how to bridge the gap in knowledge. In saying that, some of the most urgent areas which have been identified through review of the available literature have been consolidated and is reported in Section 3.1. A full review of the literature is provide in Annex 7.1.

2. Mental Health & Climate Justice: Knowledge Exchange Event

The aims of the ‘Mental Health & Climate Justice: Knowledge Exchange Event’ (henceforth referred to as ‘the Event’) were the following;

- To identify knowledge gaps and to generate ideas for further research
- To seek collaborations by creation of a new network of CC professionals whose expertise/experience is relevant to CC and mental health

Table 1 provides an overview of the structure of the Event, as well as the programme of speakers.

Session	Speaker(s) & Affiliation	Presentation Title
Session 1: The Psychology of Climate Change	Prof. Tahseen Jafry, Director of The Centre for Climate Justice	Opening remarks.
	Ailsa Mackay, National Centre for Resilience	Introduction to the National Centre for Resilience.
	Dr. Harriet Ingle, Climate Psychologist at The Centre for Climate Justice	The Relationship Between Climate Change & Mental Health.
	Paul Hendry, Scottish Flood Forum	You don’t have to die to lose your life.
	Panel discussion with Prof. Tahseen Jafry, Ailsa Mackay, Dr. Harriet Ingle & Paul Hendry	
Session 2: Mental Health Service Provision in a Local and Global Context	Gladys Ngwira, Registered Mental Health Nurse, Greater Glasgow & Clyde NHS Trust	Climate Injustice and Mental Health Implications.
	Video interview with a mental health practitioner from Malawi	Voices from Malawi.
	Dr. Russell Jones, Public Health Programme Manager at the Glasgow Centre for Population Health	Designing Spaces for Mental Health.
Session 3: Collaborative Discussion – Building Resilience and Enhancing Mental Health Service Provision	Interactive workshop with all attendees.	
	Prof. Tahseen Jafry, Director of The Centre for Climate Justice	Closing remarks.

Table 1: Event Programme

Copies of each presentation are provided in Annexes 7.4 – 7.6, as well as a transcription of the panel discussion (Annex 7.2).

The workshop was focussed around generating ideas and inputs from attendees on the following key questions/themes:

- From your perspective, who is likely to be affected the most by the effects of climate change in the context of mental health?
- How do we bridge the knowledge gap?
 - What form does adaptation take?
 - How do we build resilience?
 - How do we address the issues?
 - Who needs to be part of this conversation?

Attendees were seated in small groups around tables and invited to use sticky notes and a desktop whiteboard to record their responses. Following this, a representative from each table shared a feedback of their responses. Annex 7.3 provides a full transcription of all responses, as well as additional comments and feedback about the Event. A summary of these key responses to each question/theme are provided in Section 3.2.

3. Key Findings

3.1 Desk-based Literature Review

Seven key themes have been identified as priority areas requiring further action research. These are;

1. Measuring the mental health impacts of climate change
2. Investigations into what the psychosocial impacts of CC on mental health are and the consequences
3. Research investigating the impact and burden to healthcare systems globally
4. Educational research to identify the most ethical and effective way to teach about CC
5. Identification of the barriers to public engagement with CC and how these may be broken down
6. Research investigating the mental health impacts in Scotland
7. Research investigating the mental health impacts in the Global South

Table 2, below, provides a summary of each of these areas

Key Area	Specific Area for Further Research	Justification
Methodology/Measuring impacts	Specificity and reliability of current scales, and development of new measures	Existing scales and tools used to measure mental health outcomes such as anxiety and depression may not be specific enough to accurately capture the forms of these disorders which may result as a consequence of CC. CC-related mental health impacts may be distinct from typical expressions of these disorders, therefore research is required to develop new measures.
Psychosocial impacts	Community and social effects of CC on mental health	These effects are alluded to within the literature, but as yet – no research was identified which identifies and explains what these effects are.
Healthcare/service provision	Burden to healthcare systems, forecasting of likely impacts, and adaptation of mental health care provision	CC is already affecting the mental health of people across the world, and the literature suggests that these impacts are going to worsen. With increasing incidences of disaster events, and with the indirect mental health impacts in mind; research which identifies what the burden will be to healthcare systems globally, as well as accurate forecasting of the likely impacts and models of how best to adapt service provision to meet these needs is urgently required.
Education	Ethical and effective education	Learning about CC is a stressful experience. The way that CC information is received has a direct impact on the type of coping behaviour which an individual engages in. Therefore, research is urgently required to identify the most ethical way to educate children about CC, and the most effective way (in order to engender the most productive form of coping, which in turn leads to action competence).

Public awareness	Barriers to engagement	Research is required to identify what the barriers to engagement with CC-related information are, and how best to penetrate these barriers. This research would then inform how CC information is communicated across all mediums.
Mental health impacts: Global South	Identifying impacts	Research is required which identifies what the direct, indirect, and psychosocial mental health impacts are for countries in the Global South.
Mental health impacts: Scotland	Identifying impacts	Research is required which identifies the direct, indirect, and psychosocial impacts of CC on mental health in Scotland.

Table 2: Suggested Areas for Further Research

3.2 Engagement Workshop

Table 3 presents a summary of the main responses which emerged from the engagement workshop for each of the key questions/themes.

Key Question/Theme	Summary of Main Responses
From your perspective, who is likely to be affected the most by the effects of climate change in the context of mental health?	<ul style="list-style-type: none"> • Children & young people • People in hospitals and care homes • Disadvantaged people • People without existing support • People not yet known to services (also note relation to workshop comment over not making assumptions about vulnerability) • Men (due to existing stigma/conditioning regarding access to mental health support) • BME community • Climate practitioners (note that 'burn out' is common)
How do we bridge the knowledge gap.?	
What form does adaptation take?	<ul style="list-style-type: none"> • Use of training • Identify and use available services • Use networking to identify partnerships & cross-collaboration • Use of art to activate knowledge (using art as an alternative way to present a narrative)

How do we build resilience?	<ul style="list-style-type: none"> • Communities (mapping and using assets, groups, engagement, as well as integration of different communities) • Proactive, collaborative positive action initiatives • Small, achievable challenges (e.g. live plastic-free for a week) based around compassion, narrative building, and imagery, in order to then showcase the success (via media channels) and then to promote and upscale these projects • Use of media platforms to promote open, supportive narrative around behavioural change. • Promote collaboration (move from 'I' to 'we')
How do we address the issues?	<ul style="list-style-type: none"> • The media need to be held accountable for the messages that are being broadcast, possibility of adapting these to 'debrief' content viewers and promote climate action messages • Framing is an issue, the rhetoric needs to be changed • Move away from the 'blame game' and instead focus on solutions rather than problems • Go in to communities and listen to the issues which they identify • Authentic and diverse leaders are required to allow minority voices a platform to be heard. • More transparency is called for from Government and authorities • The use of community groups (e.g. place-based), research on the differences of perception on CC from different communities, as well as a practical application of research knowledge • The use of the arts in order to engage with people and communities further • Research required to identify the psychological impacts on children
Who needs to be part of this conversation?	<ul style="list-style-type: none"> • NCR, environmental activists, and front-line mental health workers such as GPs • Listen to communities, let them identify the issues for themselves

Table 3: Summary of Workshop Responses

4. Recommendations

It is clear that very little evidence-based research has been conducted on understanding the inter-relationship between climate change, mental health and climate justice. The fragmented nature of what does exist has led to the development of key recommendations to enhance our knowledge base, promote transformative action and community-based approaches to building resilience, supporting communities and developing healthcare service provision. These are based on the

literature review that has been conducted and feedback from the knowledge exchange event held on 19th March at Glasgow Caledonian University. The recommendations are, as follows;

- Policy analysis

Conduct a critical analysis of what exists in terms of national policies and international policies on climate change and mental health. This should include information on what national policies exist or which national policies could be fitting/appropriate/adapted to include climate change and mental health. An overview of the international frameworks is important to provide a wider framework e.g. Universal Declaration of Human Rights and the Sustainable Development Goals.

- Institutional mapping exercise

To conduct an overview of institutions addressing issues climate change, mental health and climate justice. This will provide a snap-shot (mapping exercise) of who is doing what on climate change and mental health giving an overview of the institutions/stakeholders who have key strengths in the area, and also where there are weaknesses which require underpinning and support.

- Stakeholder and social actor analysis

Conduct a stakeholder analysis to determine interests, identify synergies in programmes of work and possible input to developing action plans to mobilise support for community based health care provision. This should be followed by a social actor analysis with key stakeholders to enable the identification of existing knowledge, information and impact pathways that exist between stakeholders.

5. Next Steps

In terms of next steps, it is clear that developing good quality, effective, and impactful research will require continuing collaborations with relevant stakeholders. The National Centre for Resilience is central to this and has a fundamental role to play in the roll out of this programme of work. Since the launch of the knowledge exchange event, The Centre for Climate Justice has experienced considerable interest from individuals and organisations who were not able to attend the Knowledge Exchange Event from Scotland and overseas. The Centre has already compiled a database of

interested parties. This database/network will lend itself to supporting and underpinning this area of work. Additionally, effective communication and planned use of social media as a platform are important to consolidate the emerging growing interest.

Worthy of note is that this area of work will be highlighted at the forthcoming Elsevier World Forum on Climate Justice with a Key Note Speaker Professor Kristie L. Ebi (Department of Global Health, School of Public Health, University of Washington, Seattle (WA)). Professor Ebi will be raising the profile of the need to address climate change and mental health. We would suggest that this initial piece of work with the NCR also be presented at the World Forum.

Multidisciplinary collaboration will be vital component of taking forward this research within this field, given the nebulous impacts of CC on mental health and the multiple areas which warrant further investigation.

6. References

- Albert, M., Hurrelmann, K. & Quenzel, G. (2010). Shell Jugendstudie. Jugend 2010. Germany: Shell.
- Albrecht, G., Satore, G., Connor, L., Higginbotham, N., Freeman, S., Kelly, B., Stain, H., Tonna, A. & Pollard, G. (2007). Solastalgia: The distress caused by environmental change. *Australasian Psychiatry*, 15: S95-S98.
- Bourque, F. & Willox, A. C. (2014). Climate change: The next challenge for public mental health? *International Review of Psychiatry*, 26(4): 415-422.
- Clayton, S., Manning, C. M., Krygsman, K., & Speiser, M. (2017). *Mental Health and Our Changing Climate: Impacts, Implications, and Guidance*. Washington, D.C.: American Psychological Association, and ecoAmerica.
- Costello, A., Abbas, M., Allen, A., Ball, S., Bellamy, R., Friel, S., Groce, N., Johnson, A., Kett, M., Lee, M., Levy, C., Maslin, M., McCoy, D., McGuire, B., Montgomery, H., Napier, D., Pagel, C., Patel, J., de Oliveira, J. A., Redclift, N., Rees, H., Rogger, D., Stevenson, S. J., Twigg, J., Wolff, J. & Paterson, C. (2009). Managing the health effects of climate change; Lancet and University College London Institute for Global Health Commission. *Lancet*, 16(373): 1693-1733.
- Dodgen, D., Donato, D., Kelly, N., La Greca, A., Morganstein, J., Reser, J., Ruzek, J., Schweitzer, S., Shimamoto, M. M., Tart, K. T. & Ursano, R. (2016). "Ch. 8: Mental Health and Well-Being" in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. Crimmins, A., Balbus, J., Gamble, L. J., Beard, C. B., Bell, J. E., Dodgen, D., Eisen, R. J., Fann, N., Hawkins, M. D., herring, S. C., Jantarasami, I., Mills, D. M., Saha, S., Sarofim, M. C., Trtanj, J. & Ziska, I. (Eds.) (p.217-246). Washington, DC: USA.
- Doherty, T. J. & Clayton, S. (2011). The psychological impacts of global climate change. *American Psychologist*, 66(4): 265-276.
- Herringa, R. J. (2017). Trauma, PTSD and the Developing Brain. *Current Psychiatry Reports*, 19(10): 69.
- Hulme, M. (2009). *Why We Disagree About Climate Change: Understanding controversy, inaction and opportunity*. Cambridge: Cambridge University Press.
- Kessler, R. C., Galea, S., Gruber, M. J., Sampson, N. A., Ursano, R. J. & Wessely, S. (2008). Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry*, 13(4): 374-384.
- Lambert, S. F. & Lawson, G. (2012). Resilience of Professional Counselors Following Hurricanes Katrina and Rita. *Journal of counselling and development*, 91(3): 261-268.
- Meikle, M., Wilson, J. & Jafry, T. (2016). Climate justice: between Mammon and Mother Earth. *International Journal of Climate Change Strategies and Management*, 8(4): 488-504.
- Page, L. A., Hajat, S., Kovats, R. S. & Howard, L. M. (2012). Temperature-related deaths in people with psychosis, dementia and substance misuse. *The British Journal of Psychiatry*, 200(6): 485-490.
- Page, L. A. & Howard, L. M. (2010). The impact of climate change on mental health (but will mental health be discussed at Copenhagen?). *Psychological Medicine*, 40: 177-180.
- Reacher, M., McKenzie, K., Lane, C., Nichols, T., Kedge, I., Iversen, A., Hepple, P., Walter, T., Laxton, C., Simpson, J. & Lewes Flood Action Recovery Team. (2004). 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*, 7(1): 39-46.
- Tőro, K., Dunay, G., Bartholy, J., Pongrácz, R., Kis, Z. & Keller, E. (2009). Relationship between suicidal cases and meteorological conditions. *Journal of Forensic and Legal Medicine*, 16: 277-279.
- Tucci, J., Mitchell, J. & Goddard, C. (2007). *Children's fears, hopes and heroes*. Australia: Australian Childhood Foundation.
- Weir, J. M., Zakama, A., & Rao, U. (2013). Developmental Risk I: Depression and the Developing Brain. *Child and Adolescent Psychiatric Clinics of North America*, 21(2): 237-259.

- Waite, T. D., Chaintarali, K., Beck, C. R., Bone, A., Amlôt, R., Kovats, S., Reacher, M., Armstrong, B., Leonardi, G., Rubin, G. J. & Oliver, I. (2017). The English national cohort study of flooding and health: cross-sectional analysis of mental health outcomes at one year. *BMC Public Health*, 17: 129.
- World Health Organisation. (February 2018). *Climate change and health* (fact sheet). Retrieved from <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health> in March, 2019.
- World Health Organisation & World Meteorological Organisation. (2012). *Atlas of Health and Climate*. Geneva, Switzerland: WHO Press.

7. Annex

7.1 Literature Review

Resilience, mental health and climate justice

Global knowledge

A significant body of research exists on the link between mental health, and acute and chronic environmental stressors (Fritze et al 2008, Lambert and Lawson 2012, Kemp and Palinkas 2015, Doherty 2018, Manning and Clayton 2018). In terms of acute stressors, there are historical examples of negative psychological symptoms, such as Post-Traumatic Stress Disorder (PTSD), following flood events in the UK and Australia in 1968 and 1974, respectfully (Bennet 1970 and Abrahams et al 1976). Similarly for chronic stressors, the relationship between psychological well-being and connection to the natural environment and green spaces, particularly in urban areas, has a long and rich body of research (James 1892, Kaplan et al 1972, Parry-Jones 1990, Davis 1998, Kuo 2001, Lee and Maheswari 2010, Okvat and Zautra 2011, Tsai et al 2018).

In the United States, the focus on consequences for mental health of people affected by climatic events was renewed following devastating hurricanes such as Katrina, Rita and Gustav; 15% of people directly affected by Hurricane Katrina developed PTSD after 5 to 7 months (Galea et al 2007) and 49% of those in the affected area developed some form of mood disorder (Kessler et al 2008). Weems and Banks (2015) found young people exposed to high levels of trauma following Hurricanes Katrina and Gustav remained with long-term PTSD and depression as long as 3 years after the trauma. Lambert and Lawson (2012) even found professional counsellors who serviced those affected by Hurricanes Katrina and Rita had suffered posttraumatic outcomes from their personal experiences as well as 'compassion fatigue' from treating evacuees.

In recent years, research on acute and chronic and indirect impacts on mental health stemming from environmental stressors has broadened to consider the influence of climate change. American researchers Manning and Clayton (2018) in a review of literature found acute climate-related events in the form of extreme and sudden weather events can cause severe psychological trauma as a result of injury, death/injury of loved ones, loss of property and shock. A study by Bryant et al (2014) of bushfires in Australia in 2009, which resulted in 173 deaths and 3500 buildings destroyed, found as many as 15.6% of a high-affected community showed symptoms of PTSD. Studies on acute climate-related events on mental health, such as flooding and hurricanes, dominate the literature on the relationship between climate change and mental health.

Chronic climate-related events are less studied, but a sizeable body of work is still available. Manning and Clayton (2018) found slow-moving changes in the form of high temperatures, droughts, forced migrations, loss of landscapes and worry of loss can have a cumulative effect on mental health;

- High temperatures have been linked to increased suicides, violence and murder (Preti et al 2007, Ranson 2012, Levy et al 2017), particularly among those psychologically fragile and unable to cope with additional stress brought on by high temperatures.
- Similarly, droughts are known to cause negative mental health outcomes across the globe through the threat of food insecurity (Jones 2017). Two studies in Australia found drought

lead to financial loss in agricultural activities which caused emotional distress (O'Brien 2014) and lead to higher rates of suicide among farmers (Hanigan et al 2012).

- Those forced to migrate or are displaced by climatic events are more likely to develop negative psychological conditions in the long-term due to the trauma of losing their home, burdens and stresses of relocation and loss of belonging to a society and culture (Ingleby 2004, Adger et al 2013).
- The feeling of ambiguous loss owing to losses of place, identity and way of life that are embedded within changing landscapes and disruption of livelihoods from climate change are also challenges to mental health (Boss 2016). Loss of this type is often accompanied by feelings of helplessness, hopelessness, anxiety and immobilization.

Many of these studies by researchers from the United States and Australia found climatic impacts on mental health were unevenly distributed among vulnerable groups such as children, the elderly, women, indigenous and minority groups, people with pre-existing mental conditions and the poor (Seidel and Bell 2014, Clayton et al 2017, American Public Health Association 2018, Manning and Clayton 2018).

In this respect, concepts of social and climate justice have been suggested as a function of resilience against climatic impacts on mental health and well-being (Doherty 2018, Hayes 2018, International Transformational Resilience Coalition 2018). There is recognition among social workers in the United States that psychosocial impacts of climate change and subsequent environmental challenges require greater attention if the profession is to **“to assist communities and societies to prevent, anticipate, and respond to the human impacts of these changes in a just, equitable, inclusive, and culturally responsive manner”** (American Academy of Social Work & Social Welfare 2015, p.21).

Research from the UK and Scotland

The available literature for the UK and Scotland broadly mirrors research being done globally. In 2004, the UK government published a report that projected 2.3 to 3.6 million people will be at high risk of coastal or river floods by 2080 (Parliamentary Office of Science & Technology 2004). In addition to physical threats, this report also found increased risk to floods posed a threat to mental health and would affect the socially-disadvantaged the most. Studies on mental health following floods in England in 1998, 2000 and 2005 found significant rises in the cases of psychological distress, even four years after the event (Reacher et al 2004, Tapsell and Tinstall 2008, Carroll et al 2009). A study by Thrush et al (2005) also found vulnerable groups were less likely to receive and be able to respond to flood warnings. Years later, studies of flooding in southern England in 2013/14 found many of the interviewed flood victims had depression (20.1%), anxiety (28.3%) and PTSD (36.2%) (Waite et al 2017).

Following these events, recognition of the social vulnerability to acute environment stressors in the form of physical and mental was acknowledged in a government report – although without defining ‘social vulnerability’ (Defra 2012). A year later, Defra (2013) recommended psychological support for communities affected by extreme weather events (i.e. heatwaves and flooding) as a component of building resilience to the impacts of climate change. Around this time, literature exploring inequalities and vulnerabilities from the impact of climate change in UK and social dimensions of psychological health received more attention (Lindley et al 2011, Brisley et al 2013, Bourgue and

Wilcox 2014). And within the last year, British psychology journal 'The Lancet' published a report which argued for a reframing of mental health beyond clinical definitions to include broader issues, including social justice and affording the right to good mental health for the most vulnerable (Patel et al 2018).

Whereas, studies on this topic in Scotland are less numerous, but touch on similar themes. A study by Werritty et al (2007) on seven locations in Scotland affected by flooding found psychological trauma was disproportionately felt by the elderly and most vulnerable. A few years later, a case study on the Highlands by Brisley et al (2012) found older people, people with chronic and mental illnesses and disabilities, people with place-based occupations, the homeless, people living in remote and rural areas, and people on low-comes were more susceptible to physical and mental health impacts of climate change. Although, the study only briefly touched on mental health and indicated there was limited research in the UK.

More recently, however, a statement by the Scottish Directors of Public Health (2018, p.1) stated extreme weather events are the greatest anticipated threat to health and **"post storm/flood depression, anxiety and stress are predicted to present the biggest burden"**. An adaptation assessment report for the Scottish Parliament also found that mental health impacts from extreme weather events, namely flooding, were a predicted risk of climate change (Committee on Climate Change 2016).

One recent study conducted in the Scottish Borders found mental health among the most disadvantaged is affected by climate shocks and stresses and concluded this represented a climate justice issue (Ioan et al 2017). The authors also suggested that mental health functioned as an aspect of resilience of communities to climatic impacts. That said, Ioan et al (2017) recognised a key limitation; their project had limited engagement with the most disadvantaged (instead engaging with groups who work are connected with disadvantaged groups) and that different methodologies would need to be developed to access this group.

Conclusion

In comparison to global research efforts, the relationship between climate change and mental health in the UK is less well-studied and fewer studies exist with a focus on Scotland. Similarly, while social dimensions of climate change are emerging in mental health literature in the United States, the concept of social and climate justice is often implied rather than argued across much of the literature found for the UK and Scotland. Where research exists, literature found for UK and Scotland finds similar themes to global research in relation to mental health impacts on the most vulnerable from acute climate-related events. Although, literature concerning impacts from chronic climate conditions were missing from the limited studies and policy documents, instead choosing to focus on acute events such as flooding and heatwaves.

Concepts of social and climate justice are implied in much of the literature by authors identifying vulnerable groups whose mental health is disproportionately impacted by climate change. But these implications often do not proceed to discussions regarding building resilience and adapting to climatic impacts. While mental health is argued as a function of resilience (as well as vulnerable) to climate change, the social dimension of climate change and targeting resilience building among the most vulnerable in line with principles of social and climate justice are only recently emerging among literature for the UK, Scotland and globally.

Framing the debate

The consequences of climate change are unevenly distributed across societies and nations, as inequality affects the ability of the poorest and most vulnerable to adapt and build resilience to climatic impacts. This injustice equally implies threats to mental health from sudden and slowly moving climatic events.

Globally, there is considerable research linking psychological trauma and illness to those suffering loss and injury following climatic events such as hurricanes, flooding, heatwaves and drought. Much of this research found that those suffering the most are the poor, the elderly, children, indigenous and minority groups and those already suffering mental illness. And while there are programmes and efforts to build physical and mental resilience among communities to adapt to these impacts, a focus on the most vulnerable and addressing the root causes of this vulnerability are only just emerging.

The concept of climate justice recognises the poorest and most vulnerable are disproportionately impacted by climate change, whilst contributing least to the causes, and seeks transformative approaches to address this inequality. In this regard, climate justice seeks to reframe the debate around mental health by bridging the gap between known psychological impacts of climatic events, community resilience and the inequalities which create a barrier to realization of everyone's right to physical and mental health.

By bringing together mental health practitioners, policy makers, academics, activists and individuals from affected communities, we can identify areas of common understanding on this complex issue and seek collaborations where understanding is limited. This is an opportunity to share the most recent research findings from Scotland and around the world, and provoke discussion from a variety of professions and perspectives on new ideas and approaches to this emerging body of multidisciplinary research.

7.2 Panel Discussion Summary

This document provides a summary of the Event's morning panel discussion session.

Chair:

Prof. Tahseen Jafry (TJ) (Director of The Centre for Climate Justice, Glasgow Caledonian University)

Panel members:

Ailsa Mackay (AM) (Business Development Manager, National Centre for Resilience)

Dr. Harriet Ingle (HI) (Postdoctoral Researcher in Climate Psychology, The Centre for Climate Justice)

Paul Hendy (PH) (Community Support and Recovery Manager, The Scottish Flood Forum)

1. **TJ:** What are the differences between different communities in terms of response to disaster events?

PH: In Hull they had to use 20,000 caravans as alternative accommodation. This led to a huge increase in stress due to 'inadequate' relocation. Individuals ended up sleeping in their homes (on the upper floor) rather than in the caravans as a way to cope with this. This was dangerous and risked lives due to the effect of the natural springs under Hull continuing to compromise the integrity of the houses' floors following the flood. PH notes that Hull is a particularly extreme example.

2. **TJ:** Whose responsibility is it?

AM: The onus is on everyone. Research must be brought to the attention of Government & policymakers so that it is considered.

HI: Agreed with AM's statement. Notes that research communication to Government & policymakers must improve. We must ensure that everyone has the opportunity to see these research outcomes, so that the chances of them landing in the hands of someone who can action them will be increased.

PH: Identifies it as a community issue; we need to re-evaluate communities. Government should be involved, but research & evaluation must accompany it. How do we make resilience happen before these disaster events? Proactive versus reactive: a change of mindset is required.

AM: Identifies two things; firstly we need to close the gap in the research. Secondly, we need to gather the practical issues (and these two things should be married together). From an NCR perspective: we need to attempt to close the research gap.

HI: Starting at the community level to identify the areas that require researching, then research will hopefully build into a more comprehensive portfolio.

TJ: This is the opening of a much wider conversation, and this needs to be “put under the nose of policymakers”.

3. **TJ:** Which part of the Scottish Government does this research need to be delivered to?
(Question over ownership of responsibility)

From the floor, **Nadine Andrews** (social researcher – based in housing – for the Scottish Government): ‘Adaptation’ is one area (the focus has mainly been infrastructure), as are the ‘Health Directorate’, ‘Resilient Communities’, ‘Climate Change Division’, as well as housing communities and local government. The organisation is hierarchical, but input can come from different places. The CCC will respond to the paper published by the ICCC. There may be an opportunity for a CCC response.

AM: There are a lot of departments in the Scottish Government that this would be relevant to, but there is not a collective view. There needs to be a singular view on adaptation to the mental health impacts of climate change. This discussion is a first step. A stakeholder analysis is needed to identify who this research is most relevant to.

HI: Targeting many people/agencies is what is needed, rather than focusing on one individual person or organisation. The most important thing is getting the message out there.

PH: Everyone’s concept of recovery is different. The issue is that the recovery process is different depending on where you are. Government takes too long or gets lost. Time is not a luxury. Mental health has a bearing on many aspects of recovery, but there are underlying causes that require more than government or clinics can provide. These partnerships [GCU&NRC] are a great first step. The Scottish Flood Forum use local community groups to help with recovery. Groups like faith groups as well as local rotary clubs etc. are good places to start. The question is over how we engage with them and then scale up.

4. **TJ:** How do we reach the most vulnerable?

From the floor, **Benjamin Carey** (tourism consultant specialising in disaster recovered areas): additionally asks what is unique about climate change impacts in the context of mental health?

HI: This is something we need to research. For example, what is the impact of parental stress on children witnessing this stress? We don’t yet know if we can apply the same responses/measures as we normally would in these situations. We probably can, but they may not represent the best responses/measures. We are underprepared for what is to come.

PH: GPs are underprepared and don’t understand the complexity of the trauma at times, offering only medications to help, at times. Suggests the National Trauma Training Framework as well as the Scottish Recovery Network.

From the floor, **Zarina Ahmad** (Cemvo Scotland): Works with communities directly and has noticed that the suicide rates are very high for young people: a lot of apathy (feeling like they can’t do anything to fix this situation, so why bother), and worry and concern that there will be no planet to

live on in their future. Notes the impact of 'burnout' for practitioners within climate change-related fields.

From the floor, **David Somervell** (Transition Edinburgh): Notes the Climate Psychology Alliance (CPA) have come up with a few different ways of framing the issue, and it's wonderful that "climate justice" is being talk about and taking this discussion to a different place. "Climate change" might not be a great term, as it does not inspire urgency. "Climate disruption" might be better. The ISM toolkit is a good tool to frame and raise awareness, and battle deniers. Groups like the CPA are a way to bring people together, and a way to demystify the issues. This toolkit may offer a way to avoid contradicting messages. We need to go beyond the individual level and provide the context for doing so. Notes that Greta Thurnberg was mute for around 3 years because she was so anxious about the state of the world as a result of CC.

HI: Natural caution in scientific language may have made it so that people don't realise the severity. Education on CC must be conducted very carefully, as we know that the way you learn about something – the type of language and message delivered – will directly influence the kinds of behaviours the learner engages in afterwards. Education is key to resilience.

AM: NCR have links to education, so this can be put on the agenda.

PH: Terminology is extremely important.

TJ: "Compassion fatigue" is happening. We need to deal with the communities, but also with the people who help.

5. **TJ:** We need to prevent people from switching off: what positive frame can we use?

From the floor, **David Somervell** (Transition Edinburgh): notes 'climate outreach', and refers to the writings by George Marshall for guidance.

From the floor, **Beverley Searle** (University of Dundee): We need to tackle wellbeing first: build self-esteem, self-worth etc. as a means to create resilience and awareness of structural issues. The problem is the system.

PH: We mustn't lose sight of those who are affected. They become affected by issues beyond their control; giving real and tangible hope is necessary. We must promote more than simply clinical wellbeing.

HI: We need to help young people develop coping strategies. Building resilience is also very important before the disaster strikes.

TJ: Collecting the right evidence is key. We need to prioritise, and to connect all this to what is happening in the Global South (e.g. Malawi). Lack of climate awareness as a case of climate injustice.

6. **TJ:** How best can we make communities resilient? Why do we need to wait for communities to be affected?

AM: We need to bring knowledge base and practical considerations together. But this is a huge amount of work, and would require more hands.

HI: We need to hear from the communities, build a portfolio on the challenges, as it there are likely similarities between communities when it comes to this issue.

PH: It's about getting the balance right. People in these communities are "victims of their circumstance", although SFF would not use the word "victim". We need to give communities hope. That's needed for wellbeing, not so much clinical interventions.

7. Question from the floor, **Benjamin Carey** (tourism consultant specialising in disaster recovered areas): How do you apply a recovery programme to Grenfell, is the threat from climate change unique to mental health impacts?

HI: We need to discover this. There is little research to say either way, but what is available, suggests the potential mental health impacts will be different.

PH: The main cause of stress is getting their homes back to normal. Rarely a mention of the flood. There are underlying issues that cause the trouble in recovery.

TJ then concluded:

- Need for framing
- Building evidence base (developing the methods and partners)
- Getting the "right" evidence doesn't necessarily mean the highest quality
- Connecting conversations are required (Scotland, UK, and globally)

7.3 Collated Workshop Responses

Below are collated responses from the interactive afternoon workshop session. Attendees were invited to participate in group discussion / idea generation around questions 1 and 2, below.

Further comments, as well as general event feedback, are provided in points 3 and 4.

1. From your perspective, who is likely to be affected the most by the effects of climate change in the context of mental health?

Young people, due to the existential threat that currently exists. Young people already experience low levels of aspiration; climate change (CC) is exacerbating this.

Children living in poverty suffer from very low aspiration. Especially when knowledgeable about future climate issues.

Temperature likely to affect everyone, especially those in **hospitals & care homes** (including **children and young people**). Challenging future for the young.

Certain characteristics are associated with vulnerability (such as the elderly, or young children), but maybe we should **not make assumptions about who is vulnerable?**

Trauma/mental health will affect all groups, and inequalities/differences will arise from **disadvantaged groups without support**.

Vulnerable people are not always who you think they are, e.g. **people not in services**.

Those who are commonly identified as vulnerable often have existing support networks. The CC events themselves create new vulnerable groups. **Vulnerability is a fluid notion**.

The **BME community** are underrepresented at local government and council level. They are also underrepresented at community council level, so are not in the know.

In terms of the unknown vulnerable people: a lot of (working class) **men** (highest suicide rate); access to support still often seems to be denied due to conditioning/stigma around mental health (limited communication skills).

Climate practitioners both in community & environmental agencies have 'burn out'.

Correlation between **vulnerable people & those living in vulnerable areas** with regards to facilities present in the area.

"Climate change is going to impact other countries & not have an impact on the UK" – 77% disagree.

SUMMARY:

Children & young people

People in hospitals and care homes

Disadvantaged people

People without existing support

People not yet known to services (also note relation to workshop comment over not making assumptions about vulnerability)

Men (due to existing stigma/conditioning regarding access to mental health support)

BME community

Climate practitioners ('burn out')

2. How do we bridge the knowledge gap...

A. What form does adaptation take?

Training: find ways to share insights about wellbeing and mental health aspects.

Services, networking & partnerships.

Social media has been fundamental in creating a knowledge base. Need to have a **uniform agreement** towards resolving pollution issues globally.

Art communication as '**activating knowledge**'.

SUMMARY:

Use of training

Identify and use available services

Use networking to identify partnerships & cross-collaboration

Use of art to activate knowledge (using art as an alternative way to present a narrative)

B. How do we build resilience?

Providing support in different ways – building a sense of care e.g. community gardens/shared spaces. Take alternative care meanings to demonstrate to the individuals that their communities value and care about them. **Recognise and map community assets** (e.g. art/gardens).

Community groups – offer training on resilience skills. There are groups out there already that offer skills training in other, related, areas – and can promote other ways to help. Note that this should be done carefully, because if – for example – flooding has occurred the previous year, and then there was no flooding the next: people lose interest when there is no issue and the supportive networks

may disband. Keep the interest going by offering new types of training, then: develop best practice and upscale.

Community engagement.

Integrate different communities.

Resilience to shock requires **vibrant, healthy communities** – beyond individualism. Caring networks, informal support.

Build positive action together. **Co-design, co-develop, co-deliver.** Be proactive, not reactive.

‘Care’ as collective social capital: offer training? Care: shared spaces, shared food, building ‘social assets’.

Small scale projects can be very effective, e.g. challenge people to live for 1 week plastic-free. **Start with small, achievable goals** and build from there. Make a big PR case out of this, which then demonstrates to others how achievable these challenges are, and therefore this has a knock-on effect that more people try out behavioural adaptations. Crucially, this should be based around **compassion, building a narrative, and imagery.**

Use platforms such as radio, TV, social media etc. to be open & supportive. Change the narrative.

Resilience is built on pragmatism – a top-down approach enforcing forward thinking.

Move from the **‘I’ to the ‘we’**.

SUMMARY:

Communities (mapping and using assets, groups, engagement, integration of different communities)

Proactive, collaborative positive action initiatives

Small, achievable challenges (e.g. live plastic-free for a week), based around compassion, narrative building, and imagery, in order to then showcase the success (via media channels) and promote and upscale.

Use of media platforms to promote open, supportive narrative around behavioural change.

Promote collaboration (move from ‘I’ to ‘we’)

C. How do we address the issues?

The media need to be held responsible for the messages they are putting out there – scare mongering.

The media should have a **responsibility to ‘debrief’** at the end of reports: signpost people to show them what they can do to help (adaptations to their behaviour), and other opportunities like volunteering/community groups.

Framing is a vital issue. Maybe this is where the conversation needs to be. For example, recent work on plastics has been a huge success in terms of increasing awareness and getting people motivated

to change their behaviours. Note that aspects like place, social care, council involvement etc. could be parts of the framework.

A national survey has looked at attitudes towards CC, but maybe this needs to be more towards **feelings and behaviours**.

It may be **too early to identify solutions**: there's a lot still to unpack. Solutions need to be based on robust evidence (which we don't have yet).

There are issues around the **rhetoric** that's being issued – the media may need to take responsibility for the messages that they're pedalling. Need for more solution-based rhetoric which offers a sense of hope. Give individuals an opportunity to do something about it, ways that they can help (get messages out there via TV and radio, for example).

Need to begin talking of **solutions, not problems**. Change the rhetoric.

Questions need to be asked about people's **perceptions of climate change** (behaviours and life styles).

People's **feelings about CC**: research needs to focus on that area.

Move from 'behaviour change' to climate action/positive action. **Move away from the blame game**.

Go out there and **listen to the problems** and then find solutions.

Listen to challenges out there – rather than a one-way relationship.

Giving young people **agency**: we need to promote feelings of empowerment, and the sense that they can do something to help.

Our leaders need to be **authentic** and to acknowledge their own mental health challenges.

The **Government & authorities** need to be more transparent.

Diversifying homogenous power centres (white, middle-class men?) to make marginalised voices heard.

Place-based community groups (but how do you apply this to communities of interest?)

Is there a **difference in how communities view the climate**? Climate change has often been framed in war terms (Guardian). The challenges of communicating with specific people still persists & framing the language is very important.

Research needs to be **practically applied**: turned into a method of problem-solving.

Use the arts more to engage with people and communities.

Through the **Climate Challenge Fund** there is experience – lived experience – which can be tapped into.

Researching the psychological impacts of CC on children and whether it affects them directly or indirectly.

SUMMARY:

The media need to be held accountable for the messages that are being broadcast, possibility of adapting these to 'debrief' content viewers and promote climate action messages.

Framing is an issue, the rhetoric needs to be changed. Move away from the 'blame game' and instead focus on solutions rather than problems.

Go in to communities and listen to the issues which they identify.

Authentic and diverse leaders required to allow minority voices a platform to be heard. More transparency is called for from Government and authorities.

The use of community groups (e.g. place-based), research on the differences of perception on CC from different communities, as well as a practical application of research knowledge.

The use of the arts in order to engage with people and communities further.

Research required to identify the psychological impacts on children

D. Who needs to be part of this conversation?

Who to involve: **NCR, environmental activists** (make changes by tapping into the people who are working on the ground). Also, **GP's** (front line for mental health and social prescribing).

Listen to communities: give them the opportunity to say what they think the issues are, what the knowledge gaps are.

SUMMARY:

NCR, environmental activists, and front-line mental health workers such as GPs.

Listen to communities, let them identify the issues for themselves.

3. Other Comments

Recommended film: "Are You Listening", set in Bangladesh (Aid/climate).

"The One Big Picnic" demonstrates how communities came together to share & care.

4. Event Feedback

These workshops are great at connecting the dots!

Fantastic conversations connecting lots of themes. Thanks.

Wonderful workshop! Thanks for organising.


Would be great to use the network for strategic leverage for funding opportunities to create funding-led partnerships that will provide change. Would be fab! Thanks!

I found this event really useful for identifying possible future partnerships, and for meeting other researchers/stakeholders within this field.


Thanks to this workshop I've come up with new ideas for my own research.

7.4 Mental Health & Climate Change – PowerPoint Presentation (Dr. Harriet Ingle)

Dr Harriet Ingle
Postdoctoral Researcher in Climate Psychology
The Centre for Climate Justice




**The Relationship Between
Climate Change & Mental Health**



University for the Common Good

**THE RELATIONSHIP BETWEEN
CLIMATE CHANGE & MENTAL HEALTH**

Dr Harriet Ingle

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#climatechange
#climatepsychology
#mentalhealth

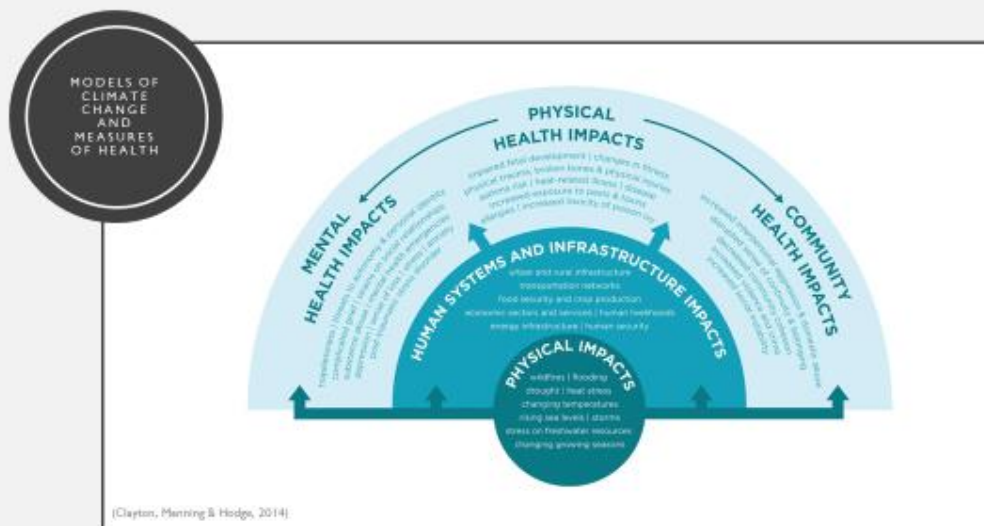
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CLIMATE CHANGE AND HEALTH

- Climate change (CC) is a social, economic and political issue (Hulme, 2009)
- Social and environmental determinants of health affected: clean air; safe drinking water; sufficient food, and secure shelter (WHO, 2018)
- Warming / precipitation trends claim 150 K lives annually (Patz, Campbell-Lendrum, Holloway & Foley, 2005)
- Between 2030 and 2050, climate change is expected to cause ~250 K additional deaths per year (WHO, 2018)
- CC affects health in three main ways (WHO, & WHO 2012)
 1. **Infections** (malaria, diarrhoea, meningitis, dengue fever)
 2. **Emergencies** (floods and cyclones, drought, airborne dispersion of hazardous materials)
 3. **Emerging environmental challenges** (heat stress, UV radiation, pollens, air pollution)
- The direct damage costs to health is estimated to be between USD 2 - 4 B/year by 2030 (WHO, 2018)
- Areas with weak health infrastructure – mostly in developing countries – will be the least able to cope without assistance to prepare and respond (WHO, 2018)

3



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CLIMATE CHANGE AND MENTAL HEALTH

- Two classes of impact:

1. Direct (acute or traumatic effects)
2. Indirect (threats to wellbeing due to observed impacts / uncertainty / concern)

(Cherry & Caplin, 2011; Atreya et al., 2005; Condie et al., 2009; Page & Howard, 2010)

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CLIMATE CHANGE AND MENTAL HEALTH

- Environmental changes = powerful environmental stressor (Dodge et al., 2016)
- Learning about CC is an emotional experience (Chen, 2012)
- Exposure to CC via the media can cause undue stress if the media coverage is scientifically inaccurate or discouraging, BUT: effective risk communication promotes adaptive and preventive individual / collective action (Dodge et al., 2016) [RESILIENCE]
- 'Issue fatigue' in the USA (~UK, but not Europe or Australia) (Lewin et al., 2011; Parag et al., 2011; Whitmarsh, 2011; Riser et al., 2013; Wilson, 2013)



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CLIMATE CHANGE AND MENTAL HEALTH

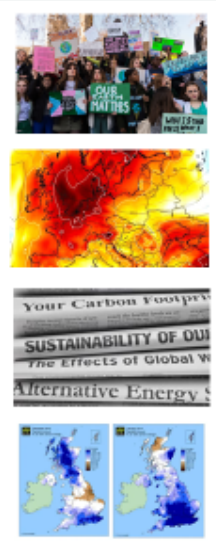
- Vulnerable populations / those with pre-existing conditions are most vulnerable (Doherty & Clayton, 2011) [CLIMATE JUSTICE]
- Effects are gradual, cumulative, and may only be experienced through media/social communication (Weber & Stern, 2011; Riser & Swin, 2011)
- Complex effects due to interrelation with other phenomena (increased population, disparities in wealth, and urbanisation) (Stokols, Misra, Runnenstorm & Hipp, 2009)
- Severity of impact = events + human system interaction (National Research Council, 2008)
- Acute stress reactions and PTSD
- Strong emotional reactions: despair, fear, helplessness, guilt
- ↑ levels of anxiety and mood disorders
- ↑ frequency of violence and conflicts
- ↑ drug and alcohol abuse
- ↑ suicidal thoughts and behaviours
- ↓ sense of self and identity (loss of place/grief)

(Bourque & Wilos, 2014)

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INDIRECT EFFECTS: GLOBAL EVIDENCE

- Ecophobia, solastalgia, ecoanxiety, pre-traumatic stress disorder, environmental grief (Sobel, 1996; Albrecht, 2005; Kevorkian, 2004; Rabinowitz & Poljak, 2003; Gifford & Gifford, 2016)
- 25% of children honestly believe the world will end before they get older (**Australia**) (Tucci, Mitchell & Goddard, 2007) [note link to Cold War]
- Many young people believe that the world may end during their lifetime due to CC and other global threats (**Germany, Australia**) (Albert, Hurrelmann, & Quenzel, 2010; Tucci et al., 2007)
- Risk of death for patients with mental illnesses ↑ by ~5% for every 1° ↑ in temperature (**UK**) (Page, Hajat, Kovats & Howard, 2012)
- Similarly, above 18°, each 1° ↑ is associated with ↑3.5% of suicide, and ↑5% of violent suicide (**UK**). Higher frequency of suicide deaths associated with anticyclonic meteorological conditions (**Hungary**) (Page, Hajat & Kovats, 2007; Toro et al., 2009)



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DIRECT EFFECTS: GLOBAL EVIDENCE

- **Australia = model** (Rever et al., 2012; Bourque & Wilcox, 2014; Fritz, Blahnik, Barlow & Wharmann, 2008)
- Drought: chronic psychological distress, generalised anxiety, depression, and an increased incidence of suicide **(Australia)** (Bourque & Wilcox, 2014)
- Inuit populations are experiencing some of the most rapid changes in climate and environment in the world (Bourque & Wilcox, 2014)
- Pre-existing mental health disparities will likely be exacerbated (e.g. suicide rates of Inuit population 11 times higher than non-indigenous Canadian population) **(Canada)** (Bourque & Wilcox, 2014)



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DIRECT EFFECTS: GLOBAL EVIDENCE

- Flooding in England in 2000: 4 x the psychological distress (in turn associated with significant excess of physical illness in children and adults) (Parker et al., 2006)
- Many of the flood victims had depression (20%), anxiety (28%), and PTSD (36%) (Wise et al., 2011)
- In the USA, 15% of people directly affected by Hurricane Katrina developed PTSD after 5-7 months (Galea et al., 2007), and 49% of those in the affected area developed some form of mood disorder (Parker et al., 2006)
- Young people exposed to high levels of trauma following Hurricanes Katrina and Gustav experienced PTSD and depression for up to 3 years after the event (Werner and Barlow, 2001)
- Professional counsellors suffered post-traumatic outcomes, including 'compassion fatigue' (Gambel & Lawrence, 2013)

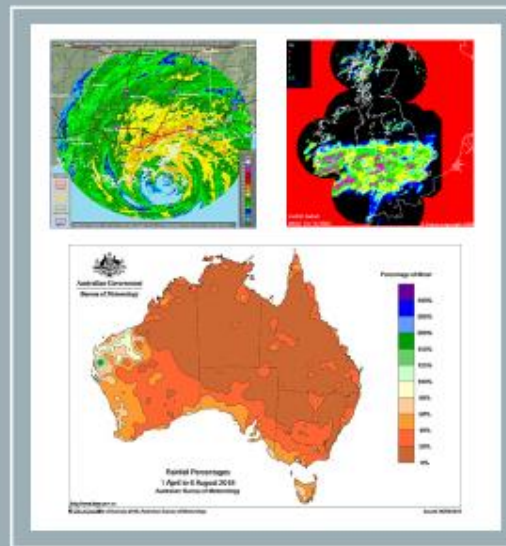
Depression: ↓ hippocampal volume = ↓ emotional functioning, ↓ memory capacity, ↑ vulnerability to recurrence (Woo, Zahne & Ray, 2013)

PTSD: structural abnormalities = abnormal threat processing / emotional regulation (Hemphs, 2017)

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SUMMARY OF EXISTING RESEARCH

- Most studies have researched the **direct** effects of CC on mental health
- These demonstrate ↑ PTSD & chronic psychological trauma (survivors, first responders, mental health professionals)
- Very few studies assess the **indirect** effects
- No studies from the Global South



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KNOWLEDGE GAPS / SUGGESTED RESEARCH

- **Measuring impact** (specificity / reliability)
- **Indirect effects:**
 - Psychosocial effects (communities / social)
- **Healthcare:**
 - Burden
 - Forecasting
 - Adapting provision
- **Education:**
 - Ethical & effective education
 - Engender productive coping strategies / ethical sensibility / action competence (Greta Thunberg, #ClimateStrike, #SchoolStrike4Climate)
- **Public awareness:**
 - Break down barriers to engagement
 - Communicating climate justice / climate change messages

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KNOWLEDGE GAPS / SUGGESTED RESEARCH

- For the Global South: there's nothing but gap!
- For Scotland: there's nothing but gap!
- Climate justice
- Vulnerable populations:
 - Indigenous populations
 - Pre-existing mental health diagnosis (~450 MM currently)
 - Children
- Meaningful impact
- Ideas, creativity, multidisciplinary research

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Thank you

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7.5 Climate Injustice and Mental Health Implications – PowerPoint Presentation (Gladys Ngwira)

Gladys Ngwira
Registered Mental Health Nurse (RMN)
Greater Glasgow & Clyde NHS Trust




**CLIMATE INJUSTICE AND
MENTAL HEALTH
IMPLICATIONS**



University for the Common Good

AIM OF PRESENTATION

Provide An Overview of Climate Injustice and Mental
Health Implications in Malawi



MALAWI: A SNAPSHOT

- ▶ One of smallest and 6th most densely populated countries in mainland Sub-Saharan Africa
- ▶ 3rd poorest in the world.
- ▶ High Dependence on Rain Fed Agriculture – Prone to climate induced weather shocks
- ▶ Population -18 million, 52% women
- ▶ 4 Psychiatrists
- ▶ 22 mental health nurses for every 100,000
- ▶ Centralised Mental Health Services
- ▶ 4 small Mental health hospitals - 3 state; 1 Catholic hospital
- ▶ Mental patients largely perceived as criminals – chained etc

Climate Injustice

People in poor countries face an uncertain future that is not of their own making.

While extreme weather events occur worldwide, it is often the poorest countries which are likely to be affected disproportionately



**Malawi - one of the
hardest-hit nations**



Women in Malawi:-

- **Comprise 52% of the population.**
- **Make up 70% of agricultural workforce.**
- **Are marginalised and at greater risk of climate change impact → MENTAL ILLNESS**

WHAT IS MENTAL HEALTH?

MENTAL HEALTH IS ABOUT HOW WE:



- ▶ **The Loss of property, possession, life and source of livelihood is a psychological shock;**
- ▶ **Consequence of Shock Causes:**
 - ▶ worry
 - ▶ anxiety of the future
 - ▶ alteration in thinking, mood and behaviour

MENTAL HEALTH AND WELL BEING

Losses from climate disaster

- ▶ home
- ▶ source of income
- ▶ disconnection from neighbourhood and community

Disruptions to the social, economic and environmental determinants protectors of mental health and wellbeing:

- ▶ economic security and participation,
- ▶ social inclusion
- ▶ freedom from violence and

Adverse Impacts of Climate Injustice on mental health and wellbeing

- directly - trauma
- Indirectly - physical health and community wellbeing

Serious mental health issues

- Chronic anxiety
- Stress :- Acute & Post Traumatic stress
- Depression
- Suicide
- Addiction

VULNERABILITY OF MALAWIAN WOMEN TO MENTAL HEALTH TRAUMA FROM CLIMATE INJUSTICE

- ▶ Most Marginalised with limited access to resources
- ▶ Resort to selling sex as a survival strategy
 - ▶ Exposed to sexual violence and sexual harassment
- ▶ Are at risk from human trafficking during forced migration as they lose their usual support networks
- ▶ Nutritional demands during pregnancy
 - ▶ predisposes them to climate-sensitive diseases.



VULNERABILITY OF MALAWIAN WOMEN TO MENTAL HEALTH ARISING FROM CLIMATE INJUSTICE

- ▶ **Increased risk of physical, sexual, and domestic violence in the aftermath of disasters**
- ▶ **Traveling long distances to collect water**
 - ▶ risk of physical abuse and harm by opportune men.
- ▶ **Increased workloads and separation of families** - creates additional emotional stress. Women who do migrate are still faced with the direct pressure of caring for children and obligations to provide support to others.
- ▶ **Increased worries amongst women - attributed to caring and nurturing role which is strained by**
 - ▶ livelihood losses, emotional distress and anxiety about the future.

PROPOSED MH SERVICE PROVISION TO PROMOTE AND SUSTAIN RECOVERY

- ▶ Health & Social Care Integration
- ▶ In-patient services
- ▶ Liaison mental health services in primary care
- ▶ CMHT (Community MHT)
- ▶ CAMHS (Children)
- ▶ Addiction Services

NB: In light of on-going climate injustice all above mental health services are needed

CONCLUSION



FLOODS IN MALAWI: MARCH 2019

- ▶ <https://www.facebook.com/100024714679891/videos/377011239799362/?t=9>
- ▶ <https://www.facebook.com/344665289663064/videos/306927263331209/?t=3>

REFERENCES

- ▶ IASC (2010). IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings.
- ▶ Tapsell S.M. , Tunstall S.M. (2008) I wish I'd never heard of Banbury': The relationship between 'place' and the health impacts from flooding. *Health & Place* 14 133–154



Thank you

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