

SUMMARY AGENDA

Climate and Mental Health Research & Action Agenda for

Indigenous Communities



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INDIGENOUS AGENDA LEADS:



Climate
Mental Health
Network



Executive summary

Connecting Climate Minds (CCM) is a Wellcome-funded initiative which aims to cultivate a collaborative, transdisciplinary climate change and mental health field with a clear and aligned vision. Over the last year, we have convened experts across disciplines, sectors and countries to develop regional, thematic and global research and action agendas. These agendas set out 1) research priorities to understand and address the needs of people experiencing the mental health burden of the climate crisis, and 2) priorities to enable this research and translate evidence into action in policy and practice. This report summarises the research and action agenda for climate change and mental health for Indigenous Peoples; the full agenda¹ has been published separately and is available [here](#).

Indigenous communities grapple with myriad challenges stemming from climate change that significantly affect their mental health and which are systematically compounded by histories of colonisation and structural oppression. Some of the most significant challenges surfaced in the CCM dialogues that are causes and consequences of the climate crisis include the detrimental impacts of extractivism, struggles for land rights and the lack of territorial sovereignty, which intensify disconnection from land and collective vulnerability to loss and damage. Limited access to clean water, disruptions in food sovereignty and forced displacement and migration – driven by climate change-related issues, extractive industries and development projects – amplify mental health and wellbeing challenges in these communities and disrupt traditional practices that confer ecological and psychological resilience. Furthermore, the impact of climate change on cultural practices, coupled with the desecration and loss of sacred sites, results in a profound loss of cultural identity. At the root of all these challenges are deep-seated colonial legacies, coupled with drastic contemporary environmental transformations, which compound the complex issues faced by Indigenous populations.

Certain subgroups within Indigenous communities – including Elders, environmental defenders, widows, children, those with existing health conditions, displaced people living in temporary settlements, those with disabilities and those residing in reservations – confront disproportionate challenges related to mental health and climate change.

To foster right relations² with the environment and promote healing for both people and land, it is imperative for researchers, policymakers and practitioners to adopt frames that align with Indigenous worldviews. Research, policies, programmes and practices that acknowledge and support the importance of cultural practices and dynamic transmission – two-way communication and feedback between Indigenous worldviews and Western biomedicine that helps find common ground – can contribute to building and maintaining positive connections between Indigenous communities and their environment. This approach not only promotes mental health but also contributes to the overall wellbeing of both people and the planet.

Building from our dialogue with representatives from Indigenous Groups, this agenda puts forth 23 priority research themes covering myriad areas, including:

- Understanding the mental health effects of climate-related disruptions to traditional practices, rituals, sacred sites and spiritual connections to the land;
- Exploring how various factors, such as intergenerational trauma stemming from colonial violence and the compounding stress of climate-related crises, can intensify the impacts of climate change on mental health;
- Exploring how to integrate ancestral and traditional medicinal approaches into co-created and culturally appropriate climate-mental health interventions;
- Understanding the impact of territorial sovereignty on mental health in the context of climate change; and
- Understanding the barriers to climate-mental health support, particularly for Indigenous Peoples in remote/rural areas.

The research team, with guidance from the Indigenous Advisory Group, has been mindful to assert the non-homogeneity and recognise the vast diversity of Indigenous Peoples' perspectives and experiences across the world. While key lessons and findings are important, the most substantial aspect of this work is related to the process of engagement with Indigenous collaborators. Future research in this area can benefit from the lessons on enabling collaborations in research and implementing processes which support right relations, Indigenous sovereignty and ownership of knowledge. Key process lessons from this work included adapting informed consent protocols to align with Indigenous sovereignty, centring access for non-English speaking participants and prioritising Indigenous framings on mental health and climate change, such as by using the lenses of ecological wellbeing and kinship relationships over Western biomedical framings. Programmes such as ours are a step towards building connections between different ways of knowing and doing. This is vital to help support and advocate for integrating these approaches into wider climate and mental health action.

Introduction

Framing of mental health for Indigenous Peoples

This document aims to encompass Indigenous Peoples' collective, relational perspectives on mental health and wellbeing, recognising the inseparable connection between human wellbeing and the land, in order to better conceptualise the health implications of climate change.^{3,4} Understanding these requires acknowledging the intricate relationships woven into Indigenous lived experiences, challenging the conventional categorical divisions of insights that fail to encapsulate the interconnected and interdependent nature of Indigenous perspectives on mental health and the environment. Embracing a holistic view is essential, as these findings underscore the deeply interwoven tapestry of types of wellbeing⁵ (e.g., emotional, spiritual, psychological, social, cultural, ecological), defying neat divisions and emphasising the intrinsic interweaving of all aspects of Indigenous lived experience. Further information contextualising the framing of these concepts and understandings of key terms can be found in the appendix.

Climate change and mental health for Indigenous Peoples

Existing research

In 2010, a United Nations report concluded that, "Indigenous people with close emotional and ancestral ties to the land are also likely to be disproportionately affected by environmental change and extreme weather events."⁶ Over the past decade, the intensification of climate-related events – such as wildfires, floods and droughts – has magnified the threats to Indigenous livelihoods, cultural practices and overall wellbeing, especially among those living on the frontlines of climate change.⁷ Mental health researchers and practitioners, as well as Indigenous Peoples themselves, recognise the socio-psychological legacies of colonisation.⁸ Indigenous communities continue to experience ongoing systems of inequity and marginalisation, facing widespread human rights abuses and land dispossession globally.^{9,10} Historical traumas are further intensified by climate change threats that actively disrupt key determinants of health and mental wellbeing for Indigenous Peoples, such as relationships to place, livelihoods and cultural identity.^{11,12} New challenges include ecological grief and anxiety,¹³ experiences of solastalgia due to the loss of cherished places,¹⁴ and grappling with the intangible consequences of environmental loss and damage.

Despite the enormous toll that climate change and structural oppressions place on Indigenous mental health and wellbeing, there remains insufficient research on the specific impacts of climate change on the mental health of Indigenous communities across diverse geographies. A dimension of this gap in evidence is that many Indigenous languages do not have distinct vocabulary for conditions like depression or mental illness,¹⁵ resulting in research not adequately reflecting the lived realities of these communities. Equally or more overlooked are the particular culturally-relevant frameworks and understandings of 'mental health' and wider framing of health and wellbeing across Indigenous populations.

Mainstream and public mental health services often overlook Indigenous frameworks for health, restricting their ability to fully address the healing needs of diverse individuals, particularly those outside Western, middle-class, white, urban, industrialised contexts and outside of Western therapeutic settings. Increasing evidence around a First Nations therapeutic rationale has shown the significant positive impact of participation in traditional cultural practices as treatment for psychosocial unwellness,¹⁶ as well as fostering strong connections to land and Country,^{17,18} – both particularly relevant in the context of climate-related loss and damage.

As research at the intersection of climate change and mental health expands, it is imperative that non-Indigenous researchers and practitioners uplift and take guidance from what many Indigenous scholars and communities have been advocating for: "Nothing about us without us."¹⁹

Findings from the Connecting Climate Minds project

This following section sets out the context of the research undertaken with Indigenous Peoples as part of the Connecting Climate Minds (CCM) project, presenting a synthesis of what we heard through dialogue, expert consultations and a literature review as key emerging needs for these groups for mental health in the context of climate change.

What mental health outcomes appear to be impacted?

In line with the conceptualisation of mental health in Indigenous communities – represented here as a multifaceted experience of wellbeing encompassing interconnected emotional, relational, cultural and spiritual aspects – this agenda includes reported experiences that may overlap with symptoms of mental health challenges as defined in the wider CCM project or with broader aspects of wellbeing.

Reported outcomes include ecological grief and anxiety, solastalgia, heightened stress, fatigue, a sense of disillusionment about the future and increased rates of addiction and suicide.

Who appears to be particularly affected by the mental health impacts of climate change?

Children

Communities living on coastal areas and rivers

Community members with pre-existing health conditions

Environmental and land defenders

Displaced people and people living in temporary settlements

Elders

Pastoralist communities

People living in Indigenous reservations

People with limited mobility

Widows

What appear to be the pathways and mechanisms linking these climate hazards to mental health outcomes?

**Compounded grief and trauma from exposure to multiple/
repeated climate-related disasters**

**Climate-induced cultural disruptions, such as disconnection
from land, and disruptions to ceremonies and healing practices**

**Health of territory as a determinant of Indigenous
mental health**

Loss of food security and economic livelihoods

Water-related disruptions

Systemic climate-induced migration and displacement



Research agenda

Priority research themes

This research agenda presents an aligned vision to guide the climate and mental health field for Indigenous Peoples. The priority research themes listed below have been developed through an extended consultative process; they are presented within four overarching research categories that were identified as areas of critical need for further work globally, based on an initial review of literature (see appendix for further details). The priority research themes represent areas where targeted research investment could create a full picture of climate-related impacts on mental health challenges, their mechanisms and solutions across both mental health and climate actions.

The research team made an intentional effort to keep themes inclusive of Indigenous framings of these issues, and so include wellbeing-related terms. The choice of mental health versus mental wellbeing in the following themes is based on the specific terms or framings used by the dialogue participants in the relevant discussions that ultimately led to generation of that theme. Researchers should be mindful of selecting appropriate outcomes and measures to focus on for each research theme based on a deep understanding of what is relevant to the Indigenous communities with whom they are working.



RESEARCH CATEGORY

Impacts, risks and vulnerable groups

Priority research themes:

Understanding how intergenerational trauma resulting from colonial violence manifests within Indigenous communities/groups – including impacts on mental health, cultural practices and social cohesion across successive generations – and why this understanding is vital to comprehending the intersections of climate and mental health for these communities.

Identifying specific climate-related risks, triggers and stressors that increase mental health burdens for particularly vulnerable Indigenous subgroups.

Understanding the extent to which the ongoing and compounding experiences of the climate crisis cause stress/grief in Indigenous Peoples and at what point these experiences become debilitating and impact personal and social functioning such that they constitute a mental health challenge.

Understanding how research efforts focusing on the impacts of climate change on mental health among Indigenous populations can be involved and contribute to broader decolonial and rights-based efforts.

Pathways and mechanisms

Priority research themes:

Understanding how climate-related changes, such as altered seasons or extreme weather events, affect traditional ceremonies, spiritual practices and sacred sites and how this impacts the mental health and wellbeing of Indigenous communities.

Understanding how the preservation of traditional practices, rituals, sacred sites and spiritual connections to the land contributes to the maintenance of cultural continuity and mental health resilience among Indigenous communities facing climate degradation.

Understanding the ways Indigenous populations conceptualise the interdependence of human wellbeing with the natural world through spiritual connections, and how those conceptualisations impact mental health amidst climate change.

Identifying the most effective government policies and actions to safeguard the lands and health of Indigenous Peoples in the context of the climate crisis and exploring which institutional mechanisms ensure that these policies align with international standards and legal frameworks.

Understanding the distinct stressors experienced by Indigenous populations due to the absence of control over their traditional territories and limited self-governance in the context of climate change, and how these stressors impact their mental health and wellbeing.

Understanding how the scarcity of mental health resources and the lack of communication and support mechanisms for rural/remote settlements contribute to the challenges of addressing the unique climate-related mental health needs within Indigenous communities, and identifying the specific barriers that hinder accessibility to services and how these may be worsened in the climate crisis.

Understanding how the recognition of the inseparable connection between the vitality of land and water and the health of Indigenous communities impact individual and collective mental health and wellbeing in these communities. Identifying the specific cultural practices and beliefs that reinforce this symbiotic relationship and contribute to the flourishing of ecosystems and individuals.

Exploring the mental health ramifications of climate-related threats to traditional ways of life and food sovereignty.

Understanding how the cultural, economic and mental wellbeing impacts of water-related challenges affect the livelihoods and adaptation capacities of Indigenous communities.

Understanding how the right to stay or the need to leave experienced by Indigenous communities impacts mental health, and how financial and support resources available in those situations (e.g., visas, climate refugee status, compensation schemes), contribute to the climate and mental health outcomes.

Identifying the most effective knowledge exchange and mutual support mechanisms to foster wellbeing and mental health resilience in Indigenous populations in the context of climate change.

Mental health benefits of climate action

Priority research themes:

Understanding how to tailor mental health policy and community-based interventions to promote ecological sustainability and mental wellbeing among Indigenous populations, through fostering a strong connection to the land and country.

Understanding how initiatives such as seed rescue and home garden cultivation contribute to climate resilience and the preservation of cultural identity within Indigenous communities and how this impacts the social, economic and mental wellbeing of individuals and communities.

Exploring the ways in which the reclaiming and revitalising of ancestral practices by Indigenous youth and Elders amidst the destruction of land and cultural heritage 1) provides opportunities for healing individuals and the environment, 2) contributes to a sense of empowerment and agency within Indigenous communities, and 3) impacts mental health outcomes.

Exploring how to amplify and resource Indigenous-led interventions in climate action that support mental health outcomes for those communities.

Mental health interventions/solutions in the context of climate change

Priority research themes:

Understanding the extent to which cultural revitalisation initiatives and community-led interventions serve as effective buffers against the mental health impacts of intergenerational trauma related to colonial violence and climate change among Indigenous groups, and what role these initiatives play in fostering resilience and improving mental health within communities.

Exploring ways to encourage Indigenous healers, traditional wisdom keepers, community leaders and mental health professionals to co-create intercultural climate-related mental health interventions that draw upon the strengths of traditional Indigenous practices and contemporary biomedical approaches and evaluate the effectiveness of these interventions.

Recognising, evaluating and integrating ancestral and traditional medicinal approaches into research on climate change and mental health in order to identify and develop effective, culturally appropriate interventions for climate-related mental health challenges. This includes integrating the most effective medicinal approaches and/or healing practices to help community members cope with the mental health toll of climate change.

Evaluating how territorial sovereignty in the context of climate change for Indigenous populations is a mental health intervention in itself.

Action agenda

The identified research priorities will only be of value if they are enacted. The climate and mental health field is relatively new and rapidly growing, and now is the time to ensure that it is designed to deliver a mentally healthier future in the context of the climate crisis.

Priority next steps / recommendations to investors and actors

On the next page is a summary of key actions and priority next steps to implement the research agenda and to translate evidence generated through research into policy and practice.



Work towards the protection of traditional healing practices and traditional ecological knowledges as cultural heritage.

- Advocate for legal recognition and protection of traditional healing practices and traditional ecological knowledges as part of the cultural heritage of Indigenous communities, with multiple benefits for health of people and territories. Work towards incorporating these aspects into national and international legal frameworks.
- Establish partnerships between Indigenous communities and cultural institutions to support communities in establishing community-led archives or repositories for traditional healing practices and traditional ecological knowledge. These repositories should prioritise community control, accessibility and the ability to manage and share information within the community.
- Develop educational programs to raise awareness about the importance of traditional healing practices and traditional ecological knowledges and their co-benefits to mental health.

Invest in supporting knowledge exchanges between Indigenous Elders and youth.

- Actively support community-led spaces for Elders to pass down traditional healing knowledge to younger generations, fostering continuity and preserving cultural practices that can strengthen climate resilience and mental health and wellbeing.
- Work with Indigenous cultural practitioners, artists and storytellers to create living repositories (also digital) of their cultural heritage.

Implement straightforward procedures to access grants and financial resources and set up long-term funding partnerships

- Resources are needed to support any community-led action, and often they are tied to funders' agendas. It is necessary to provide easy-to-access grant schemes for Indigenous communities, without unnecessary bureaucracy or funders' decision-making over the use of those funds. Adopt a community-driven approach that allows Indigenous communities to prioritise their funding needs.
- Appoint dedicated Indigenous liaisons within funding agencies or organisations. These individuals can serve as points of contact for Indigenous communities, offering personalised guidance and assistance throughout the application and reporting phases.
- Establish long-term funding partnerships with Indigenous communities to build trust and continuity. Multi-year funding commitments can reduce the burden of frequent application processes and provide stability for community initiatives.

Focus research efforts to strengthen intercultural public mental health services.

- Develop culturally-informed assessment tools that consider diverse expressions of mental health and wellbeing. Acknowledge and be guided by Indigenous understandings of wellbeing, which differ from Western diagnostic frameworks.
- Strengthen ethnographic approaches in mental health research. Additionally, foster more connections between the fields of medical anthropology, psychiatric anthropology and intercultural psychiatry, and put these in conversation with local climate scientists in each context.
- Hire researchers who are members of, or fluent in the languages spoken within, Indigenous communities.
- Generate more research collaborations between the fields of land health and mental health.
- Generate more research collaborations across language barriers (i.e., Spanish-speaking, French-speaking, English-speaking Indigenous mental health and climate researchers) to avoid siloes across colonial language groups.

Advocate for and implement policies that support culturally-responsive mental health services.

- Ensure that policies reflect the unique needs and rights of Indigenous individuals and communities.
- Implement trauma-informed care approaches that recognize and address the historical and intergenerational traumas experienced by Indigenous individuals and communities.
- Incorporate protective factors that contribute to mental health and wellbeing (e.g., access to cultural resources that enable cultural continuity) into mental health promotion efforts.
- Inadequate representation of Indigenous peoples in healthcare governance, policymaking and service delivery can hinder the development of culturally sensitive health systems. Work with and hire Indigenous health workers, psychologists and traditional healers.

Integrate Indigenous knowledge in climate campaigning.

- Connection to, and kinship with, the non-human world and web of life can open many paths into different ways of relating to the living world and of responding to its drastic imbalances. Focus on the link between planetary health and human wellbeing.
- Collaborate with Indigenous communities to co-create and implement climate campaigns. Incorporate traditional ecological knowledge in campaign strategies and solutions.
- Prioritise building long-term relationships based on mutual respect and trust. Be committed to ongoing collaboration beyond the duration of specific campaigns.

Advocate for and actively support Indigenous land sovereignty and the protection of sacred sites

- Collaborate with Indigenous communities to identify and safeguard culturally significant areas. Conduct educational campaigns, workshops and events to highlight the importance of Indigenous land sovereignty and the protection of sacred sites. Foster a broader understanding of the historical context and ongoing struggles. Encourage divestment from projects that infringe on Indigenous land sovereignty.
- Give resources to help Indigenous communities buy back their ancestral lands.
- Develop policies and practices that explicitly protect sacred sites and ensure these are implemented by local and international actors (e.g., mining sector, farming trade unions).

Conclusion

This research and action agenda does not purport to speak on behalf of Indigenous groups, nor does it purport to cover a comprehensive scope of their lived experiences and relationship between climate change and mental health. It is in no way an exhaustive agenda and should be seen as a starting point for further engagement and careful action. The research themes here are limited by the team's ability to reach different groups and lived experiences and by the vast heterogeneity of Indigenous cultures around the globe. It also subject to the positionality of our team, priorities of our funders, resources available to find, access and compensate contributors, and time allotted to develop the report.

While this project falls within a biomedical framework of mental health, the question at the heart of this effort also asks: what is being erased if we only speak in these terms? Perhaps Western frameworks that limit mental health to biomedical models are equally a reflection of the separation between people and territories, which is itself a symptom of an underlying problem at the root of the climate crisis. If we see these colonial separations at the root of climate change and also at the root of how we understand mental health, we're required to make more space for our collective bodies of knowledge to come to the forefront of how we understand and nurture wellbeing.

Directions for learning and action identified in this agenda require contextualization at local, regional and global levels. The research and action steps outlined above provide a starting point for a range of stakeholders. Key process lessons documented, such as those related to building trust, working in relational ways and honouring Indigenous sovereignty, are applicable across myriad research and action contexts. We invite others to engage in sensitive, respectful and community-based research rooted in self and collective determination. Upholding and uplifting Indigenous knowledges related to mental health and climate change must continue to be centred in collective efforts to navigate and respond to the climate crisis.

Moving forward, the focus areas for research and action outlined in this agenda can help mobilise greater attention and resources to understand and respond to the compounding burdens faced by groups who help sustain the global food system and that are most attuned to the changes taking place on land and at sea. The findings reveal the potential for a wellspring of insight and wisdom from these groups if they are engaged intentionally and thoughtfully as collaborative partners rather than research subjects.

Who produced this report

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Conflicts of interest

The authors have no conflicts of interest to declare.

Appendix

Connecting Climate Minds (CCM) overview

Connecting Climate Minds (CCM) is a Wellcome-funded project launched in 2023 to develop an inclusive agenda for research and action in climate change and mental health. The project has two key, intertwined aims. The first is to develop an aligned and inclusive agenda for research and action that is grounded in the needs of those with lived experience of mental health challenges in the context of climate change, to guide the field over the coming years. The second is to kickstart the development of connected communities of practice for climate change and mental health in seven global regions (designated by the Sustainable Development Goals), equipped to enact this agenda. We aim to combine the strengths of a global perspective and regional focus, and bring together diverse disciplinary perspectives into a shared vision that can ensure research is effective at addressing priority evidence gaps and informing changes in policy and practice at the intersection of climate change and mental health.

Methods

Full methods can be found [here](#).

The formulation of this agenda was a result of a collaborative effort that engaged multiple diverse groups, including the Connecting Climate Minds core team, the Lived Experience Working Group, the Indigenous Advisory Group and our Inter-community Dialogue Partners. In addition, we partnered with the UNITAR Global Indigenous Youth Summit on Climate Change (GIYSCC) to hold a session on our Indigenous Dialogues. The formats and methods employed in the Indigenous dialogues were a result of collaboration with our partners and Indigenous Advisory Group, who played a crucial role in the iterative development of the methodology, fostering the exchange of processes, learnings, and challenges across different regions.



Indigenous Advisory Group

A set of six advisors were onboarded in a compensated capacity to help guide the Indigenous dialogue workstream. Recruitment for the Advisory Group consisted of outreach across existing CCM networks, contacts from Regional dialogue leads, and the UNITAR GIYSCC network. The selection was based on availability as well as active engagement with the intersections between climate change and Indigenous health. The Indigenous Advisors' backgrounds included Indigenous researchers, health workers and young activists from The United States, Singapore, Japan, Cameroon and Australia. The Indigenous Advisors provided feedback on internal processes and framings, guided ethical considerations, brokered connections for the dialogues and offered insights on the analysis of the data.

Dialogue Methodology

The Indigenous sub-thematic dialogues took place in 1) two inter-community dialogues; and 2) a global online dialogue. The opportunity to localise the dialogue process for Indigenous communities in different parts of the world enabled stewardship of the process by trusted, local community members and networks who were recruited by the project team to lead the in-person dialogues. Partners and community members set the agenda for the encounters and had the possibility to re-write and adapt the proposed dialogue questions. A two day in person inter-community dialogue was held with Kichwa communities in Alto Huaja, San Martín, Peru. A two hour online inter-community dialogue was held with members of Kom kingdom in the North West Region of Cameroon, Kom diaspora in Nigeria, and in exchange with members of the Anam tribal community in Kenya.

A global virtual three-hour dialogue was held with Indigenous Peoples and Traditional Wisdom Keepers aimed to create an inclusive process that created space for the diverse lived experience and wisdom of participants to emerge. A semi-structured facilitation guide was used that allowed for emergent topics to arise naturally, with two break-out moments.

Analysis Methodology

The qualitative data from the dialogues was analysed by the CMHN research team, with the support of two members of the Indigenous Advisory Group. Coding followed a thematic analysis process that included deductive coding according to the CCM core research categories, with adjustments to the categories and themes made inductively based on the dialogue data. During the process of coding, emergent themes and sub-themes were coded and the prevalence was calculated for each.

Participants

- Dialogue participants were a diverse group across geographical spread, gender, sector, and discipline.
- 150 people attended the 2-day in-person dialogue workshop from diverse Kichwa communities, travelling from 3 provinces in the San Martin region of northern Peru.
- 25 collaborators – ranging from community members in Kom village (Cameroon), the Anam community in Kenya, and Ibanikom's institutional partners of the Claretian University of Nigeria and Centre for Inculturation, Nairobi, Kenya – attended a virtual dialogue.
- A further 36 participants attended the global virtual dialogue.

The tables below provide a breakdown of participant characteristics for the global virtual dialogue.

Geographical spread

	Dialogue 1	
Country	Number	Percentage
Australia	5	14%
Curaçao	1	2.9%
Eswatini	3	8.6%
Finland	1	2.9%
Guatemala	3	8.6%
Honduras	2	5.7%
Kenya	1	2.9%
Mexico	2	5.7%
New Zealand	1	2.9%
Nicaragua	1	2.9%
Nigeria	1	2.9%
Panama	1	2.9%
Peru	2	5.7%
Philippines	1	2.9%
South Africa	1	2.9%
United States of America	9	25.7%

Gender

	Dialogue 1	
Gender	Number	Percentage
Men	14	40%
Women	19	54%
Other	2	6%

Survey participants*:

Pre-dialogue survey: 37

*Please note numbers are approximate and do not account for duplicate or incomplete responses.

Ethics, Data Collection and Storage

Ethics

This study has been reviewed and given an ethical favourable opinion by the Imperial College Research Ethics Committee (ICREC). Study title: 'Global Dialogues to set an actionable research agenda and build a community of practice in climate change and mental health', study ID number: 6522690.

This dialogue followed the ethics protocol aligned with the overarching CCM project. This included an ICREC approved consent process.

Taking guidance from the Indigenous Data Sovereignty (IDS) movement,^{20,21} we committed to ethical conduct of research involving Indigenous persons with a framework for the dialogues that emanated from four core principles: Respect for Persons, Concern for Welfare, Mutual Benefit and Transparency. The Indigenous dialogues were based on a process-oriented approach to research, wherein the process itself is just as important as the final output. In this iterative process, centred around relationship-building and active listening, we put into practice several additional mechanisms to respect the autonomy and safeguard Indigenous community members, considering the potential impacts on their physical, mental and spiritual health, and physical, economic and social circumstances, following the principles of Ownership, Control, Access and Protection (OCAP).²² These included: granting control to Indigenous collaborators over the design and stewardship of the dialogues, liaising with the Imperial College Ethics Review Board to ensure co-ownership of data with the Indigenous collaborators, providing stipends and compensations for all collaborators, providing feedback mechanisms as well as regular check-ins to ensure accountability and transparency during the process.

Informed consent

Cultural awareness and accessibility are key considerations when seeking consent from Indigenous communities and individuals. These processes considered local language and Cultural protocols determined by the Indigenous communities involved in the research. After consultation with our Indigenous Advisors, we engaged in a two-step process for obtaining informed consent for the inter-community in-person dialogues, involving collective consent from traditional authorities as well as individual consent from dialogue participants. We sought individual consent for the virtual dialogue.

Data collection, storage and sharing

CCM recognizes the intellectual property rights of Indigenous communities' knowledge and solidifies Indigenous data ownership and control. We consider it imperative to safeguard the traditional knowledge of Indigenous peoples that may be shared in the dissemination of research findings, in accordance with International Labour Organization Convention 169 on the rights of Indigenous Peoples.

Virtual dialogues were conducted on Zoom following informed consent from all participants. Research data was collected by CMHN and the Red Cross Red Crescent Climate Centre and then transferred to Imperial College London to be securely stored in line with Imperial College policies using a secure server, and the GDPR Data Protection Act 2018. Kichwa communities in San Martin, Peru and Kom village in Cameroon are joint Data Controllers for the data their community members provide to this study, and were responsible for gathering, storing and sharing this data with CMHN and Imperial College London. All relevant data was de-identified that was shared. Data will be stored by Imperial College London for 10 years after study completion.

Framings of key concepts

'Climate change', 'mental health' and their intersections and related terms, along with other relevant key concepts, are understood and defined in diverse ways across Indigenous populations. Identifying, acknowledging and honouring the ways these terms are understood and used in different settings is critical to help foster connections, awareness and recognition across disciplines, cultures and communities. This section highlights relevant understandings among Indigenous Peoples, designed to reveal the diversity of perspectives around key concepts and other discussions throughout the project.

We engaged in conversations around the framing of the Indigenous Peoples dialogues from the beginning of our work, including discussions with Indigenous Advisors and inter-community dialogue partners. The need to interrogate and adjust the framing of mental health for this particular dialogue series was evident from the outset, as Indigenous perspectives diverge from dominant biomedical approaches that often compartmentalise mental health from the interconnected realms of social, Cultural, territorial, and spiritual health and wellbeing. Without such interrogation, the project ran the risk of further erasure and harm of Indigenous worldviews.

Based on these preliminary conversations, the dialogues were intentionally framed in ways – and using vocabularies – that validate Indigenous worldviews and understandings of climate change and mental health (touched upon in the Introduction, and in section below). The invitation for the virtual dialogue converged around the following question: 'Healing our bodies and territories: How are the drastic changes to the health of our lands affecting our collective, spiritual and mental health?' The inclusion of spiritual and collective health in the framing of the global virtual dialogue was an intentional effort to reflect multi-dimensional understandings of the health of bodies and territories and as advised by our Advisors and partners. Inter-community dialogue partners steered all conversations and framings in their dialogues to ensure relevance and respect for contextualised worldviews.

Understandings of mental health

The term mental health was used throughout the dialogues by facilitators and appeared in several of the questions asked. Despite this, other terminology and/or framings were nearly always used by our collaborators to answer questions posed and when sharing their lived experiences. Notably, in the inter-community dialogue among Kichwa communities in the Peruvian Amazon, there was no mention whatsoever of 'mental health' in the community responses. By recognising and valuing these interconnected dimensions held by some Indigenous communities for what Western paradigms call mental health and/or mental wellbeing, we can move beyond the limitations of such dominant frameworks, fostering Culturally responsive approaches that aligns with the rich tapestry of Indigenous wisdom and knowledge.

On the next page is a selection of insights that shed light on the language and understandings underpinning these concepts. These insights can be summarised by the following statement made by one of our collaborators: **"When our life spaces are healthy, we are well."**

Relevant terminology

Vocabulary surrounding mental health impacts favoured mentions of 'stress', 'disillusionment', 'uncertainty', 'grief', 'anger' and 'worry'. For example, "We are disappointed. We are all disappointed in this time." Emma Lee, from Tebrakunna country who consented to be named, spoke on the incongruity of some dominant mental health terminology with Indigenous lived experience: "Uncertainty is helpful as it allows us to fall into our Elders, into our community. But anxiety is a western construct. The language of management, the language of crisis is not our language. That terminology of anxiety needs to go in a box somewhere. Important distinction." Other collaborators noted that "new diseases arise in the communities, such as stress, worry," and "some have passed away because of the stress."

Furthermore, collaborators commented on the dangers of not integrating Indigenous paradigms in framings of interventions and research: "Giving energy to mental health in isolation to wellbeing is a biomedical introduced reductionist approach that inadvertently disempowers Indigenous solutions."

Spiritual, collective and cultural health

Indigenous conceptions of health typically encapsulate an emotional and spiritual connection with the land, emphasising the absence of a dichotomy between subject and object. These perspectives, although diverse in their cultural expressions, were all anchored in a profound interweaving with nature and all beings, fostering a holistic understanding of the interconnectedness between humans, their health and wellbeing, the environment and the spiritual realm. Explicit linkages across cultural, spiritual, emotional and mental health were consistently made in responses, such as: "There's clear connectivity to spiritual and cultural health and, as we place negative impact on these important practices, it also clearly has an impact on mental health [...] There's also spiritual health, emotional health, and cultural health."

Many learnings from the Kichwa communities in the Amazon region spoke to the intimate relationship with non-human beings, where 'disharmony' was the origin of both unwellness/disease and climate-related events. Being 'unwell' mostly has to do with events involving the animas (spirits) or is a product of their influence. The openness of the world to the influence of the animas (spirits of beings) that live in the world, implies that a person is exposed to suffer the consequences of "abandonment" or "flight", of being "kutipado" [possessed by a spirit] or "loved" by them. The affective and relational dynamics oscillate intermittently between harmony and disharmony between humans and other beings. Medical remedies and pills are used, but these are regarded only as complementary elements to traditional healing that involves "health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain wellbeing."²³

Relationship between land health and human health

The inextricable link between land health (understood as the health of all beings in the ecosystem comprising of land, water, skies) and human health forms the foundational essence of most conceptualizations of Indigenous wellbeing: "I think about how physical health is related to mental health and is intrinsically tied to planetary health and how we as Indigenous people care for over 80% of the biodiversity on this planet." "We need advocacy not only for the health of people but the health for all that exists."

In line with these quotes, one collaborator proposed the following understanding of a 'triangular approach' to environmental, spiritual and physical healing, held together by cultural practices: "We have our triangular approach based on our ancient wisdom. The first approach, at the top of the triangle, is healing our nature, the Mother Earth, the rainforest. Protect the nature. The next one is to continue to retain our spiritual connection to the Mother Earth as well as part of our survival. The third, the last one, is our physical healing. So once we see that this triangular approach will be implemented, then we can continue to survive here. [...] Culture is what connects all of these." (From an Indigenous chief from The Philippines).

Land as healer

In Indigenous wisdom, the land is not merely a physical space but a profound healer, intricately linked to integral approaches to health. Recognising the land as a source of healing power, Indigenous understandings of healing embraces a holistic perspective that interweaves physical, mental, and spiritual wellbeing, again emphasising the interconnectedness of human health with the Earth. In the words of one collaborator: "What would our communities look like if healing was based on land as a healer?"

Given the deep interdependence with the other beings, the human-emotional world is far from being encapsulated in what is deemed as the 'mind', or what is 'mental'; that is, human experiences are never separate from the wider webs of life of which they are a part.

Glossary

For a glossary describing relevant concepts and key words for the Connecting Climate Minds research and action agendas, please download from [here](#).

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