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Post-flooding community-level psychosocial impacts and priorities in Canada: A preliminary report

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In partnership with the National Collaborating Centre for Environmental Health

National Collaborating Centre for Environmental Health

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Key Messages

- Decision makers can support communities to recover from flooding by understanding community psychosocial and mental health impacts.
- The psychosocial and mental health impacts of flooding are felt in the short and long term and are compounded with other disasters and crises.
- The psychosocial impacts of flooding are prevalent and include family discord, financial strain, and feelings of isolation. In some cases, flooding can lead to the development or worsening of mental health conditions like depression and post-traumatic stress disorder.
- Flooding disproportionately affects systemically excluded groups like Indigenous peoples and communities, people living in rural and remote locations, and children and youth.
- Priority areas for psychosocial and mental health responses related to flooding include focussing on community preparedness, engaging with communities to foster resilience, and facilitating knowledge sharing across Canada.

Introduction

Extreme weather events are increasingly frequent due to climate change.[1] Flooding is the most common natural disaster in Canada.[2] Floods have a significant impact on community mental health and psychosocial well-being,[a] which are in addition to the impacts of flooding on the environment, health and safety, infrastructure, and economies.[4-6] Medical officers of health, public health practitioners, policy analysts, program officers, municipal government officials, and other decision makers play a key role in developing and delivering programs and policies to support community psychosocial and mental health response and recovery. To do so, they require up-to-date and contextually relevant evidence. Some regional disaster response and surveillance tools exist.[7-9] However, Canadian decision makers and practitioners lack action-oriented guidance to promote immediate and long-term community psychosocial and mental health recovery post-flooding.

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[a] **Psychosocial health** and **mental health** are related concepts. "Psychosocial health refers more broadly to the social and psychological components that shape well-being, and mental health is one aspect of the broader definition of psychosocial health."[3]

To address this gap, the National Collaborating Centre for Environmental Health (NCCEH) contracted PolicyWise for Children & Families to conduct research with the following objectives:

1. Increase decision makers' understanding of the mental health and psychosocial well-being impacts of flooding on the people and communities affected, with emphasis on systemically excluded groups.[b]
2. Summarize community-level emerging and leading practices to mitigate the mental health and psychosocial well-being impacts of flooding and describe contextual factors that contribute to the effectiveness of identified practices.

In this preliminary report, we respond to objective one. To start, we summarize what we learned about the psychosocial and mental health impacts of flooding based on a targeted review of journal articles and practice-based sources. We prioritized the recent literature from the Canadian context published in French or English. Next, we highlight experiences, challenges, and priorities for action related to community psychosocial and mental health response and recovery. In doing so, we begin to address our second objective. We drew on engagement with a pan-Canadian practice advisory committee to develop these preliminary findings. In the next phase of the project, we will build on the current report using data from journal articles and practice-based sources, key informant interviews, and continued engagement with the advisory committee. Throughout the project, we apply an equity-oriented lens to highlight the impacts, priorities, and recovery needs of systemically excluded communities and groups.

Psychosocial and mental health impacts of flooding

Through our targeted review of journal articles and practice-based sources, we found:

- Flooding negatively affects psychosocial and mental health in the short and long term;
- Flooding worsens psychosocial and mental health inequities; and
- Preparedness, resources, and community cohesion can mitigate psychosocial and mental health impacts of flooding.
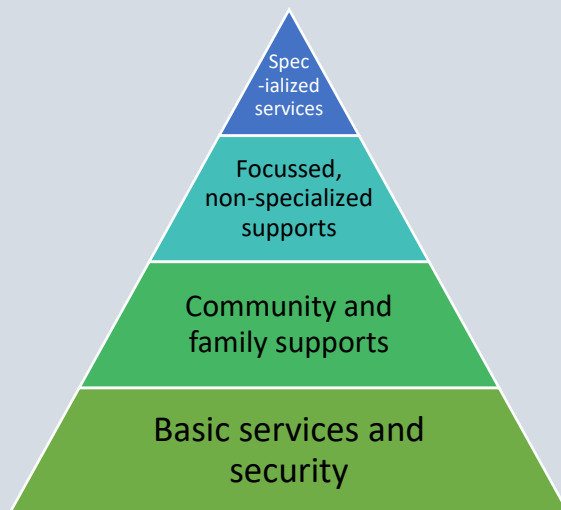
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[b] **Systemic exclusion** refers to social structures, policies, and practices that limit access to health, opportunities, and thriving for specific groups of people because of social characteristics such as race, class, and gender.

Flooding negatively affects psychosocial and mental health in the short and long term

Severe flooding has long-term impacts on psychosocial and mental health.[4-6] The **psychosocial and mental health intervention pyramid (Figure 1)** is a useful tool to understand how communities are affected by disasters.[10,11] For example, we see that severe outcomes such as post-traumatic stress disorder and other mental illnesses affect a small proportion of the overall population impacted by the disaster. In contrast, most of the community will benefit from increased awareness of and access to basic psychosocial and mental health supports and services, such as security, shelter, water, food, and basic health care.

Figure 1. The psychosocial and mental health intervention pyramid.

Spec-ialized services

Focussed, non-specialized supports

Community and family supports

Basic services and security

The **psychosocial and mental health intervention pyramid** represents the types of supports and services required to meet the mental health and psychosocial needs of all community members following a disaster.[10] The width of each layer shows the proportion of the population typically requiring each type of support. Most people will benefit from basic services and security and a smaller proportion of people will require specialized mental health services.

Adapted from the Inter-Agency Standing Committee guidelines on mental health and psychosocial support in emergency settings.[10]

After experiencing flooding, communities faced a "new normal" rather than returning to life as it was before.[12] Flooding can lead to stress, anxiety, and in more extreme cases, depression, and post-traumatic stress disorder.[13] It can increase domestic conflict,[12,14] intimate partner violence,[14] economic stress, substance abuse, grief, and child behavioural and school performance challenges.[5,13,15-17] Residents of flood-areas who remain after evacuation warnings may experience stigma and isolation from their communities.[18] The financial stress of trying to rebuild after a flood can lead to relationship problems among people who do not have access to assistance.[12] Flooding-induced financial stress among parents

impacted the psychosocial well-being of children.[5,19] Parents struggled to meet their children's needs while managing multiple priorities and responsibilities post-disaster.[5]

Residential damage or displacement due to flooding, when people cannot live in or lose their homes, leads to poor mental health outcomes,[12] chaos, and uncertainty.[20,21] For example, people displaced by the 2018 flooding in St. John River, NB, used stress to describe their economic concerns and what it felt like to rebuild and recover after the flood.[12] Uninsured people whose homes were flooded had poorer mental health compared to people with insurance.[22] Destruction of community gathering places, like a community centre where weddings and events took place, devastated residents because there was no place to physically come together after the flood. Such destruction and displacement can lead to social isolation and profound loneliness among remote[12] and Indigenous communities.[23] A lack of funding to rebuild worsened and prolonged the psychosocial impact by hindering people's ability to gather.[12]

Flooding worsens psychosocial and mental health inequities

Equity-focussed research on the psychosocial and mental health impacts of flooding is sparse.[6,24] It is particularly lacking in relation to understanding the impacts of flooding on Indigenous communities.[23] We do know that extreme weather events exacerbate social, economic, health, and other inequities.[3,4,25] Their negative impacts on psychosocial and mental health are disproportionately felt among systemically excluded population groups,[25,26] including Indigenous peoples,[14,17,23] rural communities,[27] and communities that experience socioeconomic disadvantage.[3] Children and youth are particularly affected by the negative psychosocial and mental health impacts of flooding.[5,15] Bullying, gang recruitment, and suicide increased among First Nations youth displaced by flooding.[23] In the longer-term, some youth experienced homelessness when they stayed behind to finish school after their families relocated away from the flood affected community.[5]

Communities know their own priorities, needs, strengths, and gaps. Nevertheless, these are not always considered during psychosocial disaster responses. For example, rural communities face specific barriers such as mental health stigma and transportation challenges.[5] Rural and remote communities in Canada already face inequities in access to mental health care.[5] Flooding of access routes like bridges, roads, and ferries can cut off residents of rural and remote communities from neighbouring towns, work, medical facilities, and other amenities,[12] exacerbating psychosocial and mental health impacts.

Existing disaster and emergency response plans rarely meet the needs of Indigenous communities or consider their priorities and perspectives.[28] In Canada, First Nations have faced forced displacement due to planned flooding undertaken to divert water from nearby towns and cities.[23] These actions demonstrated how government policies dispossessed and displaced Indigenous peoples, which

exacerbated ongoing injustice and the colonization of Indigenous communities and their lands.[23] For Indigenous peoples in Canada, flooding-related trauma was intertwined with the psychosocial and mental health impacts of colonialism, anti-Indigenous racism, and the legacy of residential schools.[14,23] Separating the psychosocial and mental health impacts of flooding from physical, emotional, and spiritual domains of well-being lacks alignment with the Indigenous understandings of health and well-being as holistic and connected. Flooding evacuees from First Nations experienced increased racism, family violence, youth suicide, bullying, recruitment of youth to urban gangs,[17] and reduced mental health.[29] The psychosocial impacts of flooding-related displacement on Indigenous communities were profound and long-lasting due to removal from and loss of traditional lands.[23,30]

Preparedness, resources, and community cohesion can mitigate psychosocial and mental health impacts of flooding

The impact of natural disasters on the psychosocial and mental health of communities is tied to the resources available to respond[31] as well as external supports.[4] Building psychosocial resilience as part of disaster management and planning can promote well-being and safety.[4,24,25,32,33] Early warnings of possible flooding events can attenuate the psychosocial and mental health impacts if an event occurs.[6] Communication about the mental health impacts of climate change can also impact community preparedness.[3] Actively participating in flooding preparedness and response efforts can support mental health in the short-term by providing people with a sense of control and community.[12,34,35] Conversely, it can also heighten feelings of isolation, collective trauma, and guilt.[12] Community engagement and collaboration in response to natural disasters can have positive mental health impacts through communal coping[35] and post-traumatic growth.[36,37]

Nation-led preparedness and response promotes community resilience[c] and healing post-flooding.[14,23] First Nations highlighted the need to acknowledge and address intergenerational trauma and the legacy of residential schools in disaster response preparedness and planning.[14,30] Including cultural protocols and traditional knowledges were also essential.[14] For example, in contrast to a non-Indigenous approach that categorizes people as "affected" or "not affected" by flooding, First Nations communities assumed that all members were impacted by the disaster because of close kinship relations.[14]

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[c] Community resilience is "an attribute of the community as a complex integrated system, describing the ability of its members to draw upon their own inherent strengths and capabilities to absorb the impact of a disruption, to reorganize, change, and learn from the disruption, and to adapt to emergent shocks" (Public Safety Canada, 2019, p.6).

Practice experiences, priorities, and challenges

We convened and engaged a pan-Canadian practice advisory committee to reflect on their experiences, priorities, and challenges related to flooding response in diverse communities from across the country to support psychosocial and mental health recovery. Advisors included professionals in government and non-profit leadership positions working in disaster mental health recovery and response. We heard that what was needed for an equitable psychosocial and mental health response to flooding were:

- Preparedness and continuity between events;
- Community and contextual adaptation; and
- Learning from others.

Preparedness is key to post-flooding psychosocial and mental health response and recovery

The advisors stressed the importance of preparedness to mitigate the psychosocial and mental health impacts of flooding. One advisor explained: *"Disaster preparedness is the limiting factor for a community to respond to their psychosocial needs after a disaster. A level of competency needs to be achieved well before a disaster occurs to respond appropriately."* Communities that were prepared for natural disasters, including floods, responded more quickly to psychosocial and mental health needs. Communities with previous experience of disaster recovery were often able to mobilize rapidly in response to subsequent disasters. One such example is Fort McMurray, which experienced wildfires in 2016 followed by flooding in 2020.

We heard that adapting existing resources and providing training were key to preparedness. The practice advisory committee highlighted the use of frameworks[d] to guide practice, including the psychosocial and mental health intervention pyramid. Providing examples and detailed descriptions of the services and supports outlined in the pyramid and other frameworks helped communities to understand and adapt these frameworks to their own communities. One of our advisors shared a story about working with

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[d] We use the term "framework" to describe models, processes, standard operating procedures, or other devices intended to guide practice.

Indigenous leadership in response to a recent Canadian wildfire: *"[They had] taken the pyramid and put it on a banner, and beside it with some … bears and other wildlife … to make it to fit in to an Indigenous worldview."*

The advisors highlighted challenges related to psychosocial and mental health post-disaster preparation were connected to funding and response cycles. After flooding occurs is not the time to prepare and train people in psychosocial responses. It is the time to put that preparation into action. Yet, one advisor explained: "So many people are doing it off the sides of their desks." Another described the "boom and bust cycle":

> *It always seems with us, some disaster occurs, then funding is available, then you have to hire and develop the team, you have to retrain, and the cycle continues. We're at a point where a lot of our grant funding has ended. So, my team is shrunk down again. And at some point they'll say: "How come you're not ready for the next one?" . . . . but if you have to re-establish connections within communities, you're starting all over again.*

Community and contextual adaptation are key to post-flooding psychosocial and mental health response and recovery

The advisors cautioned that using existing recovery and response frameworks in practice required adaptation to the local context and consideration of broader influences. For example, the commonly used recovery continuum framework[38] presented a response and recovery trajectory that was linear and determinate. As such, it failed to highlight how flooding events were connected and overlapped with other climate-related disasters like wildfires. It also lacked acknowledgement that post-flooding recovery could last a lifetime. An advisor explained that communities in recovery would benefit from knowing that recovery is long and looks different in every community. Communities in various stages of recovery needed to hear, "You're not alone." The advisors recommended sharing examples and stories from communities two, five, or ten years out from a flooding event.

Each community has unique needs, contextual circumstances, resources, and priorities that impact psychosocial and mental health outcomes, responses, and recovery post-flooding. A key to psychosocial and mental health response and recovery was to understand the community and the surroundings. This involved identifying existing community leaders and priorities for the affected community, such as housing or clean water. In terms of guiding psychosocial and mental health interventions, the advisors suggested supplementing the use of frameworks with ongoing community engagement. One advisor described using a Collective Impact model[39] to build community capacity as part of their preparation efforts.

Learning from others is key to post-flooding psychosocial and mental health response and recovery

The advisors agreed that there are many similarities between different natural disasters and psychosocial and mental health response and recovery. Generally, preparing and training to respond to flooding is part of a broader response that includes learning from other disasters or crises. Advisors also highlighted how climate events were connected and often had a cumulative impact on communities, like the wildfires followed by flooding in Fort McMurray. An advisor explained:

> It's difficult to do that [responsive recovery work] without, if you just pare it down to flood, I feel like you're going to lose so much knowledge, and so much experience, because there are so many synergies between other natural disasters or crisis that can be utilized no matter what the situation may be.

The advisors described a lack of research on the psychosocial and mental health impacts of climate-related events in Canada and from across the globe, including a focus on floods. They highlighted that there is a need for research to guide practices for psychosocial and mental health response and recovery. As one advisor explained: "data gathering for the Canadian context, particularly on climate change and mental health, is slim still." A lack of flood-specific research was the reason the advisors suggested learning from diverse climate events. They also agreed that information from across Canada and the globe would be helpful, although required contextualization. For example, it would be necessary to adapt responses based on the Canadian health care system.

Still, the advisors highlighted that there are functional differences related to psychosocial and mental health response and recovery based on the type of natural disaster. Flood insurance was one issue that came up. Many Canadians lack flood insurance. This can lead to financial strain post-flooding, which has negative impacts on mental health. People also have unique fears related to mould and safety post-flooding that impacts their psychosocial well-being and mental health. One advisor shared: "with flooding, there is muck and filth, city sewage backup, contamination, and related danger, meaning that people can't get back into their homes for days. Sifting through the muck, figuring out what can be salvaged, and cleaning out homes is difficult and hideous work." The advisors suggested having experts at town halls to provide reassurance and concrete answers as part of an appropriate response.

We heard challenges related to learning from others, which included limited data collection and a lack of collective voice to represent practitioners working in psychosocial and mental health responses and recovery to disaster across Canada. Practitioners needed a platform to share knowledge and learn from each other to promote evidence-informed practices. As one advisor explained:

We pay all this money for lessons learned documents. And oftentimes, we see [decision makers] make the exact same mistakes that they spent all the money on producing the report for. And we wonder sometimes where these documents go. So, we have lots to learn, not just from our region but from all over the globe. And the hope is that with each time we provide this knowledge, and we share this experience, that it sticks, and it creates a change or positive impact for people.

Summary

Understanding the impacts of flooding on psychosocial and mental health is essential for decision makers to support community response and recovery across Canada. Decision makers include policy and program officers, funders, and representatives from all levels of government. In this report, we found that the mental health and psychosocial impacts of flooding:

- Include diverse mental health conditions like depression and post-traumatic stress disorder and psychosocial outcomes like feelings of isolation, family discord, and financial strain.
- Persist for many years post-flooding events, up to a lifetime.
- Compound and intertwine with other climate-related and/or disaster events.
- Disproportionately affect systemically excluded groups like Indigenous peoples and communities, people living in rural and remote locations, and children and youth.
- Differ based on the severity of the event, experiences of displacement, the preparedness of the community, resources available, socio-economic characteristics of people and communities, and Indigenous and social determinants of health.

We also identified several preliminary priorities that can help support post-flooding psychosocial and mental health in the Canadian context. We will explore and expand on these initial findings in the next phase of the project. Our goal is to create a resource that outlines emerging and leading community practices to reduce the psychosocial and mental health impacts of flooding in Canada. The preliminary priorities we identified include:

- **Focus on community preparedness.** Post-flooding recovery is nonlinear – preparedness overlaps and intertwines with recovery. Sustainable funding and resources can facilitate preparedness and mitigate the mental health impacts of flooding.
- **Meaningfully engage and include communities**. Fostering community leadership in disaster response planning and implementation can enhance community resilience, increase alignment between response and unique needs, and mitigate and improve the psychosocial and mental health impacts.

- **Facilitate knowledge sharing.** Collecting and sharing disaggregated data, lessons learned, and community stories and can reveal the equity impacts of flooding. Developing communities of practice or resource hubs can enhance collaboration and learning across Canada and internationally.

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