Progress in Disaster Science 16 (2022) 100257

Contents lists available at ScienceDirect

Progress in Disaster Science

journal homepage: www.elsevier.com/locate/pdisas

Indigenous-informed disaster recovery: Addressing collective trauma using a healing framework

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ARTICLE INFO

Keywords:
Disaster
Recovery
Indigenous
Healing
Resilience
Trauma

ABSTRACT

Indigenous knowledges are increasingly recognised for their value in disaster resilience, with particular attention to traditional ecological knowledges. Yet the expansive and holistic worldviews of Indigenous peoples offer an even broader set of knowledges and perspectives, such as the field of Indigenous healing, that are highly relevant to systemic challenges in disaster resilience and recovery. This theoretical paper explores the potential for an Indigenous-informed healing framework to address collective trauma from disasters. It begins by addressing key matters of concern in knowledge sharing between Indigenous and non-Indigenous peoples. It then considers Indigenous healing as an international field of knowledge and practice, distilling consistent features across a range of texts. These shared features in Indigenous peoples' healing traditions include: holistic approaches to wellbeing; social rather than solo processes; identifying and treating the roots of trauma; strengths-based and community-led processes; the need for socially and culturally safe spaces; and Indigenous notions of responsibility, justice and forgiveness. We then analyse points of difference and resonance with disaster recovery literature, in a novel effort to bring the fields of Indigenous healing and disaster recovery together through respectful and thoughtful dialogue. In doing so, this paper seeks to inform much-needed efforts to enhance culturally responsive practices in working with Indigenous peoples affected by disasters. The exploration also identifies that a healing-informed approach to disaster recovery offers opportunities to better support all communities affected by disasters, by unsettling assumptions and enabling holistic understandings of complex interactions between multiple disasters, community contexts and systemic inequities. To meet the many challenges facing the sector now and into the future, innovations fostered by such cross-disciplinary explorations are crucial.

1. Introduction

Indigenous peoples' knowledges and perspectives[1] are increasingly being recognised as pivotal to disaster mitigation [1–3], including within the Sendai Framework for Disaster Risk Reduction [4]. Academic literature on Indigenous knowledges within the disasters sector has largely focused on traditional ecological knowledges and cultural land management, including cultural burning, for disaster risk reduction [5–9]. Yet given the expansive and holistic worldviews of Indigenous peoples, it is clear that Indigenous knowledges have broader relevance [10], including and especially to complex systemic challenges in the fields of disaster resilience and recovery. This wider significance has been explored through emerging Māori scholarship (e.g. [11,12]); Steele's [13] exploration of how Native American Indigenous resilience principles can assist Indigenous and non-Indigenous communities in responding to threats from climate change, political volatility and social vulnerability; and scholarship in response to the COVID-19 pandemic [14–17]. Meanwhile, an emerging body of literature seeks to understand how disasters impact Indigenous peoples differently to non-Indigenous peoples, including the need to develop culturally responsive disaster recovery practices [18–22]. We align with and extend these developments by exploring the relevance of an Indigenous healing

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[1] We use the terms 'knowledges' to refer to specific information and practices that are unique to particular Indigenous groups. 'Perspectives' is used to speak to the common ways that Indigenous people, regardless of their specific groups or affiliations, see, exist and interact with the world. In this way Indigenous people may share common perspectives, but continue to hold unique, often place-based, knowledges.

https://doi.org/10.1016/j.pdisas.2022.100257
Received 29 June 2022; Received in revised form 20 September 2022; Accepted 5 October 2022
Available online 6 October 2022

framework in disaster-affected communities, and what lessons can be learnt to improve the practice of post-disaster recovery.

To do this, we present a theoretical study bringing together two fields of knowledge that have developed in almost complete isolation from each other: Indigenous healing and disaster recovery. Through this novel exploration of the existing and potential intersections of these fields, we offer a preliminary outline of opportunities for learning and collaboration, considering how such an endeavour may enhance disaster recovery approaches for the benefit of Indigenous people and also non-Indigenous people. We begin by outlining our approach to this exploration, addressing key matters of concern in knowledge sharing and respectful engagement between Indigenous and non-Indigenous peoples. We then consider the field of Indigenous healing, discussing its roots, exploring how it has evolved in settler colonial nations, and drawing out common themes in current literature and practice. Our engagement with this vast field is targeted rather than comprehensive, drawing extensively on Indigenous authors and focusing on topics most relevant to understandings of disasters. Next, we present an overview of core principles and practices in the field of disaster recovery. Our discussion then focuses on points of resonance and difference between the two fields, and we consider how Indigenous healing knowledges may offer much-needed insights for efforts to support Indigenous and non-Indigenous communities to recover from disasters.

In an increasingly complex risk landscape marked by climate change, compound events and cascading disasters, the need for a dramatic shift in perspective on societal resilience is clear [23,24]. Approaches that seek to address disaster recovery in isolation from risk reduction, community development and social justice will lack the scale and frame needed to support systemic resilience in its most complete form. To appreciate this, we need only consider how communities (and support services) are being forced to respond to new emergencies while still reeling from previous disasters, all while grappling with broader inequities and complex histories including the impacts of colonisation. Our aim here is to explore how an Indigenous healing-informed approach to disaster recovery may offer opportunities for learning and innovation to assist in navigating these complex interdependencies. After all, it is in the context of unrelenting cascades of traumatic events that Indigenous communities have drawn upon and advanced healing knowledges and practices to enable the simultaneous pursuit of personal healing, community wellbeing and systemic change. We propose that those working in post-disaster contexts can engage with, learn from and be transformed by Indigenous healing knowledges through genuine, respectful and honest dialogue, building skills to engage more substantially and deeply with a wide array of diverse communities. Such efforts are crucial if present challenges are to become transformative opportunities to enhance systemic resilience, including and especially for the benefit of Indigenous peoples.

2. Indigenous and non-Indigenous learning and collaboration

We write this paper as a collective of non-Indigenous and Indigenous academics with various positions within and adjacent to the fields of disaster resilience and recovery. This collaborative approach aligns with similar approaches in Indigenous-scientific collaborations, that seek to integrate Indigenous and non-Indigenous knowledges in a 'two-way' conversation with the aim of developing more appropriate and targeted adaptation and mitigation approaches (see [6,25,26]). Our ambition is to promote reflective and thoughtful practices and ideas through respectful and genuine processes of learning and collaboration, for the benefit of Indigenous and non-Indigenous people alike. Our collaboration has been formed in recognition of the urgent need for the mainstream disasters sector to better engage with Indigenous peoples, primarily as a matter of justice and wellbeing for Indigenous peoples affected by disasters. Despite gradual increases in understanding of these issues, we are conscious that there is widespread ignorance and uncertainty among non-Indigenous people within the disasters sector regarding appropriate engagement with Indigenous peoples and knowledges. These considerations are particularly pertinent given increasing efforts to integrate traditional knowledges within disaster risk reduction efforts in line with the Sendai Framework for Disaster Risk Reduction ([4]; see also [27]). It is with this in mind that we share the following reflections.

Firstly, although our collaborative partnership is founded in a deep and mutual respect of each other's skills, knowledges, and experiences, we are cognisant that in the vast majority of Indigenous and non-Indigenous interactions, this is not the case. There now exists an extensive body of scholarship, both Indigenous and non-Indigenous, identifying and critiquing western colonial and settler colonial structures of power (see [28–36]). Across these diverse bodies of text there are striking similarities, most notably the idea that the settler colonial nations are built upon and, indeed, require, the subjugation, oppression, and marginalisation of Indigenous peoples. These structures of oppression are entwined through all of society including politics and governance, law making, economies, education, health, research [37], and, importantly for this discussion, disaster planning, response and recovery. Understanding and interrogating these asymmetries of power has been the domain of many Indigenous and non-Indigenous scholars and philosophers including Foucault's examination of discourse and power [38], and Gramsci's notion of 'cultural hegemony' [39]. These efforts continue to require deep and ongoing research and academic engagement. In the following discussion, we focus specifically on the implications of these power imbalances for intercultural and intellectual collaborations such as ours, discussing the risks directly associated with this paper and our efforts to mitigate them. However, deconstructing these forces more broadly in the context of disaster resilience and recovery is a central focus of the larger stream of work that the authors of this paper, as well as others, continue to pursue.

A hallmark of colonisation is the extractivist relationships that exist between Indigenous and non-Indigenous peoples [37,40]. Extractivism can be physical, such as through the extraction of resources from Indigenous lands [37], but also intellectual, through the misappropriation of Indigenous knowledges [37,40]. We have applied reflective and respectful collaborative practices in the writing of this paper, but despite our best intentions and mitigation efforts, we acknowledge that risks remain of appropriating Indigenous knowledges and perspectives. In particular, the performance of Indigenous knowledges and practices within structures of racism and discrimination risks normalising, permitting, and reproducing, the ongoing colonial violence experienced by Indigenous peoples. Indeed, there remain legitimate questions as to whether mainstream disaster relief and recovery practices can harness Indigenous knowledges *at all*, without appropriating and disenfranchising Indigenous peoples, and we encourage further research, particularly Indigenous-led research, in these areas. Whilst we cannot fully mitigate against these risks, we have considered whether benefits arising from this research collaboration are likely to flow more (or at least equally) to Indigenous people than to non-Indigenous people, and whether the benefits to Indigenous peoples are likely to outweigh the risks. Whilst it is impossible to know with any degree of certainty, we are confident that our approach can foster these outcomes.

We identify four major forms of benefit for both Indigenous and non-Indigenous people that may arise from the present exploration:

- more appropriate disaster recovery support for Indigenous communities, enabled by greater engagement with, understanding of and regard for Indigenous peoples, cultures and knowledges within the disasters field, e.g. healing-informed approaches within disaster resilience and recovery agencies [1], and the embedding of Indigenous leadership and governance within these institutions;
- mutual advancement of the fields of Indigenous healing and disaster recovery, through opportunities to: share strategies, reconsider assumptions, enhance existing understandings, develop innovations, and collaborate to address shared challenges and goals;

- enhanced ability of the disaster recovery field to engage more substantially and deeply with a wide array of diverse communities, and to meet the challenges confronting it in the interests of all communities; and,
- possibilities for progress on issues that are often seen as intractable – including decolonisation and climate change – through an embrace of Indigenous perspectives and the transformative learning opportunities opened up by crises, [10,41–44].

Our collaboration sits firmly within what Weir et al. [9,44] call more 'just relations' between Indigenous and non-Indigenous peoples. We acknowledge that the idea of 'just relations' is vexed, especially in the face of the ongoing exploitation of land, water and natural resources, and the deep cultural and psychological trauma inflicted upon Indigenous peoples as a result of these and other settler colonial practices [45]. Pursuing land justice must form the core of any agenda for more 'just relations' and we amplify those sentiments, calling for land justice in tandem with material action for disaster justice for Indigenous peoples [42,44,46]. We now provide an overview of the origins, development, and core features of Indigenous healing approaches, before exploring possibilities for engagement with this knowledge from a disaster recovery perspective.

3. Indigenous healing

Indigenous healing itself is a vast scholarly and practice-based field, and capturing its full history and substance is beyond the scope of this paper. Rather, we outline its roots and its evolution as a practice in modern settler colonial states, drawing out consistent themes across a range of texts and distilling the discussion into areas relevant in the context of disaster resilience and recovery. We draw extensively from Indigenous authors and, in particular, Indigenous women, though our engagements are targeted rather than comprehensive.

Over millennia, Indigenous peoples throughout the world have developed complex, place-based and interconnected societies [35]. These groups of people, commonly referred to as First Nations, language groups, tribes, iwi and more, developed cultural practices and ways of life that were unique and responded directly to the lands they owned and possessed [35]. Yet despite their uniqueness, Indigenous peoples shared cultural features including an ethos of place-based and relational coexistence, and sustainability [35,47].

Healing was one such practice that was shared in importance yet unique between different Indigenous groups [45,48–50]. Indigenous peoples throughout the world had many and varied traditions of healing [48,50]. These healing traditions often responded to landscapes and landscape features such as mountains, waterholes, rivers and ecosystems among others, offering resources and renewal [45,48,51]. Knowledge of healing traditions and practices was considered sacred and kept by repositories of knowledge [33,51]. These knowledge holders were often referred to as medicine men/women, witch doctors, clever men/women, tohunga, shamans, native doctors, and others [33,49,51]. These people often possessed knowledge of climates, plants and animals with healing qualities that they could call upon to promote the healing of a person or people [33,45,51]. Traditional healers were among the most important people in Indigenous societies and becoming one required generational apprenticeship and training. Importantly, Indigenous healing was based on wellness, rather than illness [45]. In this way, good health meant more than the absence of disease [45].

It must also be said that what constituted 'illness' or 'disease' in Indigenous societies may not necessarily align with modern medical conventions [47,52]. Of course, physical and life-threatening illnesses such as influenza or cancer, would have been a cause of major concern, but other conditions may not have necessarily been diagnosed as an illness. For instance, Indigenous peoples valued individuals with special abilities [53]. Common are stories about people who could see into spirit-worlds, people who felt, tasted and could touch that which others could not [53]. These individuals, far from being seen as 'ill', were highly valued and in some instances, revered for possessing extraordinary powers [53]. Yet today, these same people would often be diagnosed as mentally ill, with medical experts intervening and prescribing treatment. To be clear, we make no judgement on what should and should not be understood as illness. Rather, we simply highlight that the concept of illness or disease itself may, in some instances, be culturally constructed.

The arrival of Europeans throughout various parts of the 'new world', constituted the most significant change to Indigenous peoples' ways of life [54]. The introduction of foreign diseases such as smallpox, the contamination of water and food sources and violent frontier conflict decimated Indigenous populations. Those who survived were removed from their homelands, with their traditional territories being separated and given, or sold, to early settlers [35]. Indigenous peoples were then moved to small parcels of land, commonly known as reserves or missions, where their lives were managed by government officers or church officials [54]. The prevailing thought in newly established colonial governments was that Indigenous peoples were dying races of people, and these reserves and missions were places to oversee this slow death [33,35].

Far from passive observers, non-Indigenous authorities were active in this process [35]. Cultural practices such as ceremony were outlawed, people were not allowed to eat traditional foods and children were not permitted to speak their traditional languages. The outlawing of traditional healing was also a hallmark of this cultural suppression. Aotearoa/New Zealand, for example, passed the [55] (New Zealand), forbidding traditional healers from treating Māori people. Further, throughout this time, many Indigenous children were forcibly separated from their families. This practice of child removal was so widespread and occurred over such a length of time that it was classified as its own social and historical event, commonly known as the Stolen Generations in Australia, or Residential Schools in Canada [54]. Taken together, the introduction of disease, frontier conflict, removal from homelands, outlawing of culture, suppression of languages and removal of children (among others), splintered communities and created layers of trauma, often referred to as 'complex trauma', that remain largely unresolved [45,56,57]. Million [58] described this process as a 'painful dismembering of families and societies' (p. 20). Yet this process also had significant and unintended consequences including the fashioning of a distinctly Indigenous resilience [45,57].

Rather than being consigned to history, Indigenous peoples throughout the world have both survived and found new expression. Indigenous peoples have a rich history of social organising and political activism, such as the 'Red Power' movement in Canada in the 1960's and 1970's [59]. They have demonstrated intellectual leadership to explore the experiences of Indigenous peoples as modern people including evolving philosophical and spiritual debates, with a notable champion in Vine Deloria Jr. in the United States. Community leaders have worked relentlessly, including raising money and teaching in secret, to ensure that cultural practices persevere. Examples include senior Māori women who created language nests to teach young Māori children their language [60]. Indigenous peoples have also tested and expanded their rights within a western legal framework, gaining recognition of their pre-existing and intact rights to land and water ownership, as evidenced by *Mabo V State of Queensland (No. 2)* in Australia's High Court. Indigenous peoples have also worked together, across borders, to be leading agents in the slow but gradual recognition of their rights, as outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) [61]. Whilst these various gains have improved the political, intellectual, cultural, and rights base of Indigenous peoples internationally, it remains that Indigenous peoples continue to find themselves

marginalised and oppressed. Indeed, the UNDRIP, whilst a monumental leap in terms of enumerating the unique rights possessed by Indigenous peoples, has an as-yet unrealised value in nation states which remain committed to colonial ideals of land exploitation and cultural hegemony[2] [39]. Indeed, the already precarious positions that Indigenous groups around the world occupy have in many cases worsened since ascension of the UNDRIP, calling into question its effectiveness to provide any tangible benefit to relieve the conditions and suffering Indigenous peoples find themselves in [47]. Nevertheless, the gains that we highlight here are a matter of fact and clearly demonstrate a historical narrative: that Indigenous peoples have never relented and continue to struggle in the face of frequently overwhelming settler colonial powers. A key pillar in this social, political, and economic revival, has been the resurgence of Indigenous healing practices.

The modern resurgence of Indigenous healing has developed in response to a range of social, cultural and historical factors, including the forced removal of Indigenous children from their families, communities and homelands [54], high rates of alcoholism in Indigenous communities [45], and the desire to access holistic and culturally informed health services [56]. Over time, though, healing has broadened beyond each initial scope, with Indigenous peoples drawing on healing traditions as a recovery tool to respond to the overall impacts of colonisation [45,54]. This includes drawing on traditional ways of healing in the pursuit of spiritual renewal, and social, cultural and political advancement [45]. Indigenous healing arose out of the recognition by Indigenous peoples that western modalities of health did not fit with, nor meet the needs of, Indigenous peoples [45,56,57].

Healing has continued to develop, both theoretically and in the practical application of healing initiatives, to address new and ongoing trauma, the depths of which cannot be understated. The deep and profound consequences of colonisation, both historical and ongoing, continue to dominate the modern lives of many Indigenous peoples [33,45,47,56]. The ongoing transformation of Indigenous peoples' lands threatens many of the resources that Indigenous peoples require to perform healing practices. This includes the introduction of invasive weeds, animals, insects and fish, the use of chemicals to manage crops, the clearing of forests, the mining of lands, the pollution of waterways, and more. Yet Indigenous peoples continue to address the trauma of colonisation and land degradation through healing even when new trauma continues to arise [58]. As Million [58] states:

> At the same moment that we work to 'heal', we are also continuously assailed by the ongoing damages that are wreaked by racism, gender violence, political powerlessness, and the continuing breakdown of our affective networks, our communities, and our families (p. 20).

Indigenous healing exists as a cohesive body of knowledge in international Indigenous communities (see [45,54]), although there is no single agreed definition of healing, owing to the richness and diversity of Indigenous peoples, with understandings and practices varying greatly within and between different Indigenous communities [62].

Broadly speaking, healing refers to an active and ongoing process of individual and collective recovery from trauma [56]. This trauma is commonly understood as stemming from the impacts of colonisation [45,47,54,63,64], yet Indigenous healing also responds to personal and familial events such as a death in the family. It is a social, cultural and spiritual process, and inherently tied to the land [49]. Key elements of Indigenous healing that are shared between Indigenous people throughout the world include:

- holistic approaches to wellbeing;
- social rather than solo processes;
- identifying and treating the roots of trauma;
- strengths-based and community-led processes;
- the need for socially and culturally safe spaces; and,
- Indigenous notions of responsibility, justice and forgiveness.

We separate these elements in an attempt to better understand and engage with each, yet we are highly cognisant that understanding the connections between them in a person or peoples' healing journey is just as important as understanding and promoting each separate element.

Indigenous healing is also predicated on a number of conditions being met. Firstly, a person or people cannot be compelled to heal. It is a journey entered into willingly and bravely, as the healing journey often identifies vulnerabilities and exposes shortcomings [57]. Secondly, healing requires a person or people to explore what it is that they need and to communicate these needs. Atkinson also refers to this process as developing an 'increasing consciousness' of a person or peoples' needs, as well as an 'acknowledgement that these needs were unmet' ([56], p. 189). Often this requires embedding educational programs within a healing framework, referred to by Bevis et al. [57] as 'educaring'. Finally, healing requires that people share a sense of purpose and understand one another. In order to draw on healing practices, one must appreciate and value the methods employed, as well as the underlying body of knowledge that those methods come from. In relation to this second point, there are obvious limitations to applying Indigenous healing practices in non-Indigenous contexts. The deep history that Indigenous people share cannot be replicated or taught, in their fullest expression, to non-Indigenous people. As such, there are layers of Indigenous healing that only Indigenous people can access. Nonetheless, it is our position that there are Indigenous healing practices that offer promise to non-Indigenous people, especially those recovering from disaster, and it is within this specific context that we apply our analysis.

4. Mainstream approaches to disaster recovery

Current approaches to individual and community-level disaster recovery are predominantly driven by non-Indigenous people and frameworks, and are informed by a combination of practical expertise and research evidence. Psychosocial recovery support for individuals is generally underpinned by the 5 essential elements of intervention following a mass trauma event, identified by an international panel of experts drawing on evidence [65]. They recommended promoting a sense of safety, calming, self– and community efficacy, connectedness, and hope. These elements form the basis of Psychological First Aid [66], an example of a universal (Level 1) intervention that can be offered as part of a stepped care approach [67]. Level 2 intervention programs are targeted at those with ongoing signs of distress and usually involve some form of training in adaptive coping or building resilience, often delivered via community-based programs. Level 3 interventions are treatments delivered by specialist mental health professionals for those with diagnosed mental health disorders including posttraumatic stress disorder.

There is recognition of the importance of social and community influences on individual recovery experiences [68–70] but still much to learn about how to mobilise positive social influences to support best outcomes [71]. The relevance of the broader literature on the interconnectedness between the natural environment and individual health and wellbeing [72–75] is also beginning to be recognised in the disaster recovery context [76–79]. National principles and frameworks guiding government disaster recovery services vary across countries, but strong examples recognise the interconnectedness of different domains of recovery and incorporate an emphasis on community-led approaches and recognition of context, culture and complexity [80–82]. However, operationalising these principles in delivery of support and services over multiple sites and jurisdictions is challenging.

[2] It is worth noting that Aotearoa New Zealand, Australia, Canada and the United States voted *against* adoption of the UNDRIP at the United Nations.

5. Opportunities for learning

The following exploration will highlight points of overlap between Indigenous healing knowledge and the disaster recovery field as well as important differences and opportunities for learning, and is summarised in Table 1. Broadly, our aspiration is that this will enhance support for Indigenous and non-Indigenous people and communities affected by disasters.

The most important aspect of this learning is the overarching potential that understandings of Indigenous healing within the disasters sector will enhance healing-informed and culturally responsive practices in working with Indigenous peoples affected by disasters. In the following discussion we highlight some insights of particular relevance in this regard, although this is by no means an exhaustive account.

Opportunities may also include enhanced support for non-Indigenous people affected by disasters. As we have noted, there are limitations on the application of Indigenous healing knowledges within non-Indigenous communities, and genuine respect and collaboration is paramount in minimising risks of harm and misappropriation. The unique features of Indigenous peoples, including their experiences of colonisation, must not be minimised, and much of the deep histories and cultures underpinning healing approaches can be accessed and understood by Indigenous peoples alone. Yet the differences between Indigenous and non-Indigenous peoples and experiences need not prevent efforts to share knowledge across cultural lines ([62], p. 88); indeed, the combination of similarities and differences underpins the value of such dialogue. Indigenous peoples have long appreciated the value of this knowledge exchange, drawing upon Western approaches to recovery (such as psychotherapies and understandings of collective trauma) and incorporating useful elements of this within their own contexts in combination with their own cultural framings and knowledges (e.g. [45,54,83]). In one notable example, Krieg [83] explores how the concept of 'collective trauma' – first developed to describe the experience of small (non-Indigenous) communities impacted by disasters – can be drawn upon by Indigenous communities. Our attempts here reverse that trend, so rather than Indigenous peoples exploring and applying western concepts of therapeutic intervention, we focus on the application of Indigenous concepts to the predominantly non-Indigenous disaster recovery field. Importantly, the disaster recovery sector must engage deeply with a wide array of diverse non-Indigenous communities in order to provide appropriate and culturally responsive support, including refugee and migrant communities, and engagement with Indigenous healing perspectives is likely to greatly assist in building these capabilities. We explore how efforts to learn from and be transformed by Indigenous healing perspectives may foster much-needed new approaches to supporting disaster-affected communities (Indigenous and non-Indigenous) in increasingly challenging disaster landscapes characterised by systemic risk and cascading events. In particular, we focus on insights into the complexities in how collective trauma events, societal systems, and community contexts intersect and interact.

5.1. Holistic approaches

Healing is underpinned by holistic Indigenous philosophies that emphasise the interconnectedness between the mental, physical, emotional, social and spiritual aspects of a person's life, as well as their relationships with family, community and the land [50,54]. Consistent with these philosophies, healing aims to restore balance and harmony in all parts of life [45,51,62]. This holistic principle has implications for service delivery and funding: healing cannot be supported by piecemeal, short term, narrow programs and siloed government departments [54,62]. Another implication is that the strongest dimension in a person's health may be used to help the other dimensions [54].

The holistic approach of healing resonates with efforts in recent decades to acknowledge the complexity and interconnectedness of

Table 1
Opportunities for the disaster recovery field to learn from Indigenous healing perspectives and practices.

Indigenous healing element	Implications for disaster recovery support for Indigenous (and also non-Indigenous) communities
Holistic approaches to wellbeing	• Enhancement of holistic understandings of post-disaster wellbeing encompassing people, lands and non-human beings • Inspiration for recovery strategies that focus on spiritual, cultural and social matters (including artistic expression and storytelling) • Support for recent efforts to take more holistic approaches to recovery and recognise connections between social, natural, built, financial, cultural, human and political domains • Added emphasis on balance, equity and sustainability (rather than growth or resource accumulation for its own sake) as the goal of post-disaster community development
Social rather than solo processes	• Advancement of social understandings of recovery and the interconnectedness of individual and community wellbeing • Potential to generate frameworks, approaches and resources that align with relational understandings of the self, and are more inclusive of and culturally relevant to Indigenous peoples • Strategies that simultaneously support individual and community healing (including group activities, community events, and storytelling therapies) • Collaboration between healing and recovery fields around shared challenges e.g. communities losing momentum and cohesion over time
Identifying and treating the roots of trauma	• Guidance for recovery in contexts of cascading disasters: Indigenous communities have had to simultaneously pursue healing and systemic change, while also facing ongoing and new traumas in settler colonial states • Emphasis on understanding how community contexts, inequities and trauma histories (including colonisation and intergenerational trauma) intersect with disaster recovery • Departure from approaches that treat disaster recovery in isolation from risk reduction (e.g. the 'disaster cycle'), climate action, broader community development and social justice • Embrace of systemic change (including decolonisation and climate justice) as a legitimate part of recovery processes, with disasters seen as transformative opportunities • Strategies for navigating community disagreements about the pursuit of systemic change
Strengths-based and community-led processes	• Support for strengths-based and community-led recovery approaches • Departure from 'one size fits all' post-disaster approaches and programs that actually only fit the society's dominant groups • Development of grassroots disaster recovery initiatives that are culturally and socially specific to each community or person, and are therefore more inclusive and community-led • Guidance for governments to support and cede control to Indigenous communities affected by disasters (with possible implications for engagement with any disaster-affected communities) • Strategies for evaluating intervention approaches that are flexible, diverse and dynamic by design
The need for socially and culturally safe spaces	• Prioritisation of culturally safe and inclusive community recovery spaces during and after disasters: this is crucial for the wellbeing of

(continued on next page)

Table 1 (*continued*)

Indigenous healing element	Implications for disaster recovery support for Indigenous (and also non-Indigenous) communities
Indigenous notions of responsibility, justice and forgiveness	Indigenous people affected by disasters, and it is often also highly important for non-Indigenous people • Support for personal agency to be highlighted alongside attention to systemic issues after disasters • Government acceptance of responsibility (symbolically and tangibly) for any failures leading to or exacerbating disasters, as part of true commitment to supporting community recovery • Alternative models for responding to post-disaster family violence, informed by healing-based community justice models

disaster recovery processes. This includes extending attention beyond physical and economic aspects of recovery through holistic frameworks, and integrating service delivery and government support to better align with how disasters and recovery touch all aspects of life for people and communities. For example, community capitals approaches (e.g. [84]) advance many of these aims and have recently been applied to disaster contexts [85–87]. Such approaches emphasise how recovery is shaped by a range of domains and assets (e.g., social, natural, built, financial, cultural, human and political) and the interactions between them. This highlights opportunities to leverage a community's assets in one domain to support development in another – for example, social capital can assist communities to accrue financial and physical resources during recovery [68]. Yet communities do not benefit *by default* from efforts to understand and leverage this interconnectedness: the results depend upon the *aims and purposes* of such endeavours. Concerningly, the notion that 'more capital is better' often goes unquestioned when capitals approaches are applied [88]. This overlooks nuances in how efforts to accumulate capital can affect various people and purposes, sometimes in negative ways [87]. By contrast, the attention to interconnectedness within the healing literature is grounded in the importance of balance and harmony. A reorientation towards balance – rather than growth or productivity – as the cornerstone of holistic approaches to recovery may support more sustainable and equitable outcomes.

Connection to the land is central to holistic Indigenous worldviews and healing approaches [89,90]. Indigenous peoples are uniquely enmeshed with their lands, waters and non-human kin, and understanding this is crucial in providing appropriate support to Indigenous peoples affected by disasters [21]. In addition, many non-Indigenous people also experience important forms of connection with the natural environment and non-human beings [91,92], and there is emerging evidence of the role this plays in health and wellbeing after disasters [76–78,93]. Through respectful collaborations, the disaster recovery sector may seek to learn from Indigenous healing to enhance holistic understandings of post-disaster wellbeing encompassing lands and non-human beings.

Furthermore, spiritual and cultural aspects of life remain on the margins of disaster recovery approaches and in the disaster literature [11,94,95]. There have been some notable exceptions analysing the role of cultural features following disasters (e.g. [95,96]), and there is emerging attention to how creative and cultural pursuits may support post-disaster wellbeing ([97]; e.g. [98,99]). Nonetheless, there has been very little investigation of initiatives that may support wellbeing by fostering cultural and spiritual health within disaster-affected communities. By contrast, spiritual and cultural matters are central to Indigenous healing, with many healing strategies using artistic expression, ceremony and story-telling to foster spiritual and cultural health, along with a sense of pride and connection to culture and community [17,54,100]. Such programs demonstrate a convergence of traditional practices and Western scientific knowledge of trauma and neurodevelopment [54,100,101]. Those interested in how culturally-oriented programs may support recovery of disaster affected communities may find guidance and inspiration by looking to such healing programs. The availability of such programs is likely to be of particular importance for Indigenous peoples affected by disasters, although there may be much broader applicability. Indigenous healing may also offer guidance on how certain cultural norms can undermine wellbeing, and strategies for navigating this. These insights will be illustrated in Section 5.6 through discussion of responsibility and justice in the context of family violence.

5.2. Social rather than solo processes

Healing is embedded with Indigenous relational understandings of people. As such, it emphasises the deep interdependencies between individual and community healing, providing insights into the ways in which the health of a community can support or undermine individual healing and vice versa [17,62,63]. Indigenous healing researchers and practitioners have drawn upon Western scientific understandings of recovery from individual and collective trauma, in combination with Indigenous understandings of culture and decolonisation, to develop integrated frameworks of healing [54,83]. This has given rise to a rich set of healing strategies that simultaneously support individual and community healing (including group activities, community events, and story-telling therapies) [17,63,102].

As previously noted, the disaster recovery field also recognises the interplay between individual and community wellbeing. 'Connectedness' is recognised as one of the 5 essential elements of mass trauma intervention [65], and the role of social capital is central to theory and analyses that integrate individual and community-level analyses of recovery [68,69,103–105]. There is increasing attention to the value of shared processing of experiences after disasters. For example, an Australian study after the 2009 Black Saturday bushfires found that people who remained living in bushfire affected communities (rather than relocating) benefited from opportunities for shared processing of their experiences [106]. Another found that group-oriented creative activities supported post-traumatic growth through opportunities to share experiences [99]. However, there is very limited evidence to guide socially-oriented interventions to support disaster recovery at both community and personal levels, and attention to Indigenous healing programs (including those based in storytelling) may inform the development of such programs. Conceptual framings within the disasters sector have also evolved to better understand the interdependency of individual and community recovery – for example, the application of Bronfenbrenner's socioecological model [107]. Yet these understandings remain very different from Indigenous relational worldviews. Engagement with Indigenous healing may present conceptual challenges to disaster frameworks, potentially inspiring more nuanced understandings of social elements of recovery. Such engagement may also support the development of disaster recovery frameworks, approaches and resources that are more inclusive of and culturally relevant to Indigenous peoples.

Furthermore, there may be opportunities to share knowledge between the disaster recovery and Indigenous healing fields, based on shared challenges regarding social phenomena. For example, analyses of community healing processes describe the phenomenon of 'hitting the wall' whereby difficulties arise and momentum wanes after an initial period of strong collective motivation [63], echoing findings of diminishing social support and community cohesion over time following disasters [108].

5.3. Attention to the roots of trauma

Healing involves a commitment to identifying and addressing the roots of problems [54,62,63], which is also a core principle in fields such as community development and disaster studies [109,110].

Understanding the impacts of colonisation is therefore a core component of healing. This includes awareness of the ways in which intergenerational trauma is passed down the generations through behaviour, observation, memory and biology [45], as well as the ways in which the threats to Indigenous peoples continue to evolve and take new shape [37,111]. There is similar evidence of the intergenerational effects of disasters including the impacts of in-utero disaster exposure on birth outcomes [112] and socioeconomic outcomes [113,114], and pre-natal disaster exposure on school outcomes [115–117]. Previous childhood trauma has also been found to increase the risk of poor mental health outcomes post disaster [118]. Bringing together these different bodies of knowledge of intergenerational trauma may be mutually beneficial to both fields.

Within Indigenous healing, attention to the roots of trauma has been embedded into the personal, therapeutic aspects of healing, which include therapies informed by Indigenous trauma theory and a range of efforts to interrupt cycles of intergenerational trauma within families and communities [45]. Focusing on the roots of problems also means that healing approaches encompass the pursuit of systemic change and decolonisation [54,102]. This lens can usefully be applied to some of the broad challenges within the disasters field concerning the goals and meaning of recovery in contemporary societies, and the structural generation of vulnerabilities. Indeed, many of the key debates within disaster recovery can be understood as questions about the degree to which disaster recovery should involve efforts to address structural problems and their roots.

One key debate concerns the 'disaster management cycle' (prevention, preparedness, response, recovery) – a core framework in the field which dominates policies, practice and literature [119]. In the context of single, isolated events this cycle is considered a practical model [120], despite substantial discussion of its limitations in recognising the non-linear, blurry and complex realities of disaster processes [121–123]. Recent cascading climate related disaster events – such as those seen in Australia over the 2019/20 summer – have thrown these issues into sharp relief, with the almost complete overlap between these phases shrinking the presumed period of normalcy between disasters [124]. The Black Summer bushfires also highlighted the extent to which action on climate change (i.e. prevention) may be important to disaster survivors' sense of safety, hope, self-efficacy and community efficacy, which are understood as essential to wellbeing following mass emergency events (i.e. recovery) [65]. Accordingly, the Black Summer bushfires prompted unprecedented calls to action to address the structural forces that are worsening bushfires (widely understood as a combination of climate change and unsustainable land management systems under settler colonialism) [125–128]. Such calls within traditional and social media prompted fierce backlash from a vocal few, including the Prime Minister Scott Morrison who insisted that it was 'not the time' to discuss such matters as doing so would detract from the business of recovery [129].

A second point of tension in the disaster recovery field concerns its relationship to broader social justice and community development efforts. Historically, disaster recovery efforts have been based in framings of disasters as 'exceptional', 'natural', 'acts of God' [109,130] and therefore sitting outside of social injustices. While recent decades have seen greater recognition of the social, political and economic factors that contribute to disasters, there remain vast divides in the treatment of hardship caused directly by a disaster compared to other forms of disadvantage, including colonisation [109,131–133]. This is reflected in policy, discourse and practice. For example, people experiencing poverty prior to a disaster have been deliberately excluded from assistance following disasters and described as "free-riders", with recovery agencies reluctant to engage in addressing the causes of poverty ([134], pp. 100–101). Such approaches reify the notion of separate phases of the 'disaster cycle', overlooking the reality that factors such as poverty and inadequate housing are likely to form barriers to recovery as well as increasing risk of disaster exposure and impact [132]. Further, this artificially separates disasters from the more 'everyday' forms of hardship that represent a far more significant detriment to wellbeing globally [109], including those stemming from colonisation itself which can be understood as a series of cascading disasters for Indigenous peoples [135]. The emerging field of disaster justice suggests a reorientation of recovery efforts towards the removal of inequities rather than maintaining or returning to the status quo, highlighting that disasters may present opportunities to progress on otherwise intractable or neglected problems [42,44,46]. As Blaikie et al. have argued, attention to the social and economic roots of disaster vulnerability "can help to reduce disasters and mitigate hazards, while at the same time improving living standards and opportunities more generally" (2014, p. 4). This sentiment is increasingly reflected in international disaster policy; for example, the integration of efforts to address issues of poverty and sustainable development within the Sendai Framework for Disaster Risk Reduction [1,4].

While the challenges associated with expanding the scope and meaning of disaster recovery must be acknowledged, the healing literature offers confirmation that rising to these challenges is both feasible and worthwhile. The sustained harms of settler colonialism and intergenerational trauma have left Indigenous peoples with no choice but to simultaneously pursue system change and personal healing [54,111]. By looking to Indigenous healing, those within the disasters sector may gain insights into how paying attention to systemic issues such as climate change, racism and poverty can complement, rather than undermine, efforts to support people in their immediate needs after disasters. Healing-informed attention to the roots of problems is likely to be of particular importance in working with Indigenous communities affected by disasters, and other communities with complex histories of trauma and marginalisation which form part of the landscape in which recovery efforts unfold.

Disasters often prompt motivation to address longstanding environmental or social issues. Yet this motivation is rarely shared evenly within affected communities, and lack of consensus can present challenges to those attempting to support recovery. Guidance for navigating such situations may be found in the Indigenous healing field, which has examined how 'readiness' for healing and change can be recognised and responded to [62,102]. Readiness for healing is based on a person or community's recognition that the status quo is no longer tolerable. Importantly, a community's 'readiness' for healing is not predicated on consensus within the community – indeed, attaining consensus in communities that have unresolved trauma is extremely difficult [45,56]. Rather, community readiness for change is often indicated by a 'core group' of people articulating a problem, who can then be joined by others as people progress on their own journeys towards healing [62]. Such insights from Indigenous healing may help disaster recovery professionals to navigate situations where some people or groups within disaster-affected communities begin to pursue systemic change, while others are resistant or apathetic.

5.4. *Strengths-based, community-led and flexible approaches*

Several of the core features of Indigenous healing approaches resonate strongly with contemporary aspirations for community recovery after disasters. This includes recognition that a person or community's healing must be initiated from within rather than imposed from the outside [62,102], and that healing approaches should be led by and responsive to the person or community [54,62,64].

Indigenous healing is built from a common acknowledgement that people who live with trauma are not 'sick' or 'ill' ([56], p. 191). Rather, they have distinct needs and require tailored support to overcome pain and grief [56]. Core to healing approaches is the belief that Indigenous peoples' strengths, resilience and capacity for innovation hold enormous potential for healing self and community, and that healing processes must support the development of these strengths [17,62,63]. These principles respect the reality that people are experts in their own lives,

and also present valuable opportunities for community development through the process of working together to solve problems [62]. While there may be a place for external knowledge and resources to be brought in to supplement the skills and expertise within communities, this must be on the community's own terms and should not come at the expense of the development and utilisation of the community's capabilities [17,54,62,102].

An overarching lesson for the disaster recovery field is that strengths-based and community-led approaches are critical in appropriately working with Indigenous peoples affected by disasters. In addition, we identify three key points for learning for disaster recovery support for all communities, centring on the 'community-led' principle which is increasingly recognised as complex yet fundamentally important to disaster recovery [136,137].

Diversity within and between communities is recognised in the disaster recovery field (e.g. [138]), but the Indigenous healing field gives far greater prominence to specific cultures, traditions and contexts. These specificities play a central role in healing, with cultural practices seen as important in (re)building community identity and cohesion [54,139]. Healing approaches commonly emerge from within a community, and the diversity of Indigenous peoples limits the transferability of approaches from one community to another [54,102]. By contrast, in disaster recovery there are comparatively few grassroots initiatives that are grounded in the particular cultures and contexts of communities [138]. Instead, many disaster recovery approaches are implemented across many communities (possibly with some minor tweaks). While this is widely accepted practice in non-Indigenous communities despite in-principle support for community-led approaches, it reflects a homogenous view of 'the community' that fails to account for the vast diversity among the people affected by a disaster. When approaches are designed with a standardised 'everyone' in mind, they are likely to be inadequate, inappropriate and even harmful to those who are not part of the society's dominant group. Those wishing to embrace more nuanced and innovative approaches to supporting the many diverse Indigenous and non-Indigenous communities affected by disasters may look to Indigenous healing approaches for guidance (see for example: [54,62,64,102]). Further, Indigenous healing approaches have developed to be highly flexible and adaptive, drawing on a variety of Western and traditional therapeutic approaches in order to cater to individual Indigenous people in all their cultural, spiritual, experiential and aspirational diversity [54,64]. These healing approaches include innovative, community-level strategies to engage people who are less willing or able to engage with direct therapeutic processes that would form part of the higher levels of a stepped care approach in disaster recovery. The strategies employed to meet these challenges may also be useful in catering to the diverse backgrounds, experiences and needs of people affected by disasters, and offer a means of promoting a sense of self and community efficacy, as central tenets of mass trauma intervention [65].

Second, given the fraught relationships between Indigenous peoples and governments in settler colonial states, a great deal of attention has been paid to issues of community leadership and the ways in which governments can provide responsive support to communities while ceding control as much as possible [62,102]. It is crucial that governments understand this complexity in their interactions with Indigenous peoples affected by disaster [21,133,140], and the healing literature offers insights into how these interactions can be navigated (see for example: [62,102]). More broadly, although there are limits to the transferability of these approaches outside the settings in which they were developed, examination of these issues in the Indigenous healing literature may be informative for those seeking insights into possibilities for alternative relationships between communities and governments in disaster recovery contexts. This would be supportive of current efforts to build knowledge about and resolve the challenges of supporting community-led recovery in post-disaster contexts [141–147]. A deliberative democracy approach is often advocated which calls for genuine influence on policy and decision making, inclusiveness of different interest groups across the community, and informed deliberation and discussion before moving towards decision making and consensus [141,142].

Third, evaluation of healing approaches is challenging due to the necessary diversity and flexibility in strategies in addition to the inherent difficulties in studying such a complex, long and dynamic process as healing [62,64]. Communities and governments alike have an interest in knowing what is working and what is worth supporting, and are continuing to innovate to meet this challenge ([62]; The Healing Foundation, 2018). This in many ways mirrors challenges and efforts in evaluating community coalitions and intervention programs [146,148] such as those implemented in post disaster contexts, suggesting that there may be opportunities for collaboration and mutual learning in this space.

5.5. Socially and culturally safe spaces

Indigenous healing literature makes clear that socially and culturally safe spaces are necessary to foster healing [56,149]. For Indigenous peoples, culturally safe spaces are necessary as many Indigenous people view non-Indigenous spaces, institutions, and physical buildings, as extensions and in some cases, emblematic, of colonial systems that have oppressed, and continue to oppress, their people. These institutions may include community spaces where Indigenous people feel they have no place and share no common history. As Atkinson states:

The healing of trauma requires the establishment of an environment of safety (2002, p. 193).

Kingsley et al. [149] investigated the importance of Aboriginal gathering places in Victoria, Australia. They conclude that Aboriginal gathering places provide a sense of safety and community, and that people are then willing to make themselves vulnerable and explore their thoughts, feelings and emotions [149]. These gathering places were located both in urban areas, townships and in more remote locations [149]. They may be located inside buildings or community institutions that the people feel are safe, as well as outside or 'on-Country' [149]. Importantly, the sense of safety that was promoted in these places had to do with both the physical location of the site and the activities that were done within it. The capacity to accommodate a range of activities such as art, music, performance and storytelling, enhanced a venue's perceived safety [149]. The study also found that these distinctly Aboriginal gathering places are sites where people from diverse backgrounds are welcomed, including Aboriginal Elders and youth as well as and non-Indigenous people, building cultural awareness and providing a sense of community across cultures, and across generations:

> *Gathering places are settings for connecting Aboriginal people from diverse background including Elders, youth and people from the Stolen Generations. This created a place for intergenerational/cross-cultural relationships, learning, healing and reconciliation* ([149], p. 217).

These insights have clear relevance for efforts to work with and support Indigenous peoples affected by disasters. More broadly, there are parallels with the role of community spaces in restoring a sense of calm and safety post disaster, important elements identified by Hobfoll and colleagues for mass trauma intervention [65]. Rebuilding priorities need to account for the social needs of communities and create spaces and places where people can come together in culturally meaningful ways, being mindful that the location and design of spaces can be constructed in ways that include some groups while excluding others [150–152]. In some cases, community harmony may be enhanced by the availability of separate spaces rather than only a central combined space, to enable places of belonging for all. Research from Aotearoa New Zealand has revealed the role of marae in in recovery for Māori and non-Māori community members [153,154]. There is emerging attention to more inclusive spaces in disaster response and recovery including the promotion of child-friendly spaces [155] and accessibility for people with disabilities [151,152]. Yet there has been a general lack of

attention to the role of community spaces, and in particular the appropriateness of these spaces for communities that may be marginalised from the disaster recovery process, including Indigenous peoples. In the absence of disaster-specific literature, Indigenous healing research can provide valuable insights to inform more inclusive practice.

5.6. Responsibility, justice and forgiveness

Healing does not deny or minimise the realities of historical and ongoing injustices. Indeed, it encourages attention to responsibility in 'macro' national and global forums and institutions. However it simultaneously focuses attention on 'micro' issues within the realm of a person's or community's control to enable moving forward on the healing journey [156]. Forgiveness may also form part of the process of healing and restoring balance, yet it does not require forgetting [62]. As Waldram states:

> *[Healing] helps individuals understand why they have problems in a manner that allows them to simultaneously see that, while victims of oppression, they retain the necessary agency to change their lives for the better. Healing, then, is ultimately about hope for the individual, the family, the community, and the future* (2008, p. 7).

In this way, the healing literature provides a profound illustration of how attention to structural roots of vulnerability can be held together with a strengths-based lens in understanding experiences and agency in a way that is truthful, just and empowering. These insights may be highly valuable to those affected by disasters in reflecting on the paths they wish to take in their own recovery journey – whether these be macro level actions such as class action lawsuits or climate change advocacy; nurturing relationships within their communities; pursuing therapeutic processes to support their individual healing; or a combination of these and many other possibilities.

Governments may also take a powerful lesson regarding responsibility from Indigenous perspectives on healing. Far from being purely natural events, social dimensions determine much about the impact of disasters [109]. In many cases governments are responsible to a certain extent for disaster impacts and recovery experiences, yet the full extent of this responsibility is rarely accepted [46,110]. As Archibald has observed, failure of governments to accept responsibility for harms done to Indigenous peoples "is an impediment to healing, both symbolically and with respect to the development of policies and programs that support individual and community healing."(2006, p. 51) In light of this, governments that are truly committed to supporting recovery may need to be prepared to publicly accept responsibility, in order to avoid undermining recovery support they may be funding and delivering. While formal forums are an important example of this, such as the 2020 Royal Commission into National Natural Disaster Arrangements in Australia following the Black Summer bushfires [128], the scope of the review and the uptake of recommendations is the true test of government responsibility.

Indigenous healing approaches to family violence may also be of interest to those concerned with post-disaster violence. There is evidence of increased rates of family violence following some disasters [157–159]. To enable understanding of the cultural and political drivers of violence, a holistic lens must be applied as discussed in Section 5.1. Emerging disaster literature highlights the role of sociocultural gender norms in shaping experiences before, during and after disasters [160–162]. Parkinson has found that following the 2009 Black Saturday bushfires in Victoria, cultural attitudes surrounding family violence impeded some women seeking support for family violence, or resulted in denial and dismissal from service providers [163]. This echoes Indigenous healing literature which shows that cultural values and social ethics such as non-interference may be a barrier to issues of abuse being voiced and addressed within a community, particularly when combined with broader social and legal disincentives for victims to come forward [45]. Criminal justice systems globally have been widely criticised for failures to adequately respond to gender-based violence [164,165] and for systemic racism against Indigenous peoples [166,167]. Questions about how to effectively address issues of abuse have been a central focus of Indigenous healing efforts, and many Indigenous communities have embraced alternative approaches involving the whole community. Generally, these models involve discussions between the offender, victim, their families and the community at large, in which the offender accepts responsibility for their actions. The community response includes a firm stance that the behaviour is unacceptable, affirmation that both the victim and offender belong within the community, and recognition of the pain at the root of the offender's behaviour [13,54,62]. Similar approaches have also been pursued in non-Indigenous communities [165,168]. Restorative justice approaches reject binary notions of innocence and guilt, belonging and ostracism. Healing-based community justice models may contain promising insights for those seeking to shift away from the silencing and unresolved conflict that can surround issues of violence following disasters. However, disaster recovery professionals would need to manage this carefully to ensure that approaches are responsive to the cultural contexts of a given community, taking care not to exacerbate tendencies found in previous research for perpetrators' disaster trauma to be treated as an excuse for their behaviour, inhibiting action to prevent further domestic violence [163].

6. Concluding discussion

The modern resurgence of Indigenous healing knowledges forms part of a distinctly Indigenous resilience that has enabled Indigenous peoples globally to survive the traumas of colonisation and pursue social, economic and political revival. Understanding healing-informed approaches should be a clear priority for the disaster recovery sector, given emerging recognition of the urgent need to improve approaches to working with Indigenous peoples and to develop more culturally responsive practices for supporting the many diverse communities affected by disasters. Attention to Indigenous healing within the disaster recovery field may also present broader opportunities for learning, benefiting Indigenous and non-Indigenous people alike. Remaining mindful of the risks and limitations of such a knowledge sharing endeavour, we have explored these opportunities through respectful and genuine collaboration among the non-Indigenous and Indigenous authors.

By bringing into dialogue the fields of Indigenous healing and disaster recovery, this paper reveals novel insights into opportunities for learning and advancing approaches to collective trauma from disasters. We find that efforts to take a more holistic approach to disasters may be extended by an Indigenous healing framework. Healing may offer inspiration for recovery strategies that focus on natural, spiritual, cultural and social matters (including artistic expression and storytelling), as well as informing the prioritisation of culturally safe community recovery spaces. Both fields examine personal and community wellbeing with shared challenges that may warrant collaboration, yet there are differences in how social elements of healing and recovery are conceptualised. The attention to the structural roots of trauma within Indigenous healing offers valuable contributions to key debates within the sector regarding the relationships between disaster recovery, preparedness, climate change and social justice, and the responsibilities of governments. This lens also promotes recognition of pre-existing trauma as part of the underlying landscape in which recovery unfolds. Family violence is an issue both fields grapple with, and healing-based community justice models may inform alternative models for responding to post-disaster violence. Both fields prioritise strengths-based and community-led approaches, presenting opportunities for shared learning. By looking to the grassroots development of socially and culturally specific Indigenous healing programs, the disaster recovery sector could also develop more inclusive approaches to recovery.

As we collectively face increasingly complex landscapes of cascading events, systemic risks and compounding vulnerabilities, it is clear that

new approaches are necessary to support the many and diverse communities impacted by disasters. This theoretical paper represents an initial exploration in the hopes of informing further respectful and thoughtful dialogue between the Indigenous healing and disaster recovery fields. Implications of this new approach extend to those working in emergency management and disaster recovery, those that fund recovery efforts, and community and organisational leaders who work at local levels post-disaster. Learning from Indigenous perspectives may present opportunities within the disaster recovery field to unsettle assumptions, advance strategies and develop innovative approaches to meeting the many challenges facing the sector and Indigenous and non-Indigenous disaster-affected communities now and into the future.

Credit author statement

All authors contributed to the conceptualisation, writing and editing of the manuscript.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

Acknowledgements

This work was supported in part through funding from Bushfire Recovery Victoria and the Bushfire and Natural Hazards Cooperative Research Centre. Neither funding body was involved in the preparation of this paper or the decision to submit it for publication. The authors would like to thank Dr. Jessica Weir and Charlee Law for their valuable comments informing this paper.

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