



POLICY BRIEF

# Psychosocial factors in disaster recovery

This policy brief is part of a series of briefings focussed on disaster recovery and has been supported by funding from the Extreme Weather Research Platform established by the Ministry of Business Innovation and Employment (MBIE)

EXTREME WEATHER  
RESEARCH PLATFORM

Te Rāngai  
Rangahau  
Āhuarangi



**Each of us are affected by our social environment and our psychological makeup. Recent disasters in Aotearoa New Zealand have affected people living in affected areas to varying degrees. Psychosocial support involves easing psychological, social, and physical difficulties for individuals, families, whānau and communities. In an emergency it focuses on enhancing wellbeing and helping people to recover and adapt after their lives have been disrupted.**

This is the third in a series of briefs designed for policy analysts. These briefs bring together research on the most effective actions after a disaster. This brief focusses on psychosocial issues that may arise immediately post-disaster and how to best address the impact and reduce ongoing distress. This period is often known as the response and initial recovery phase.

The brief encapsulates research from a wide variety of sources, researchers, and organisations, detailing key findings on psychosocial recovery in the first three months post-disaster and providing case studies to illustrate these findings. It also identifies where more research is needed.

## Recommended actions

### Overarching mental health disaster strategy

Although there is a framework for supporting mental health and psychosocial recovery (Ministry of Health, 2016), researchers were united in calling for a clear and updated process. This process would be triggered by a declaration of a state of local or national emergency and define the roles and responsibilities of central and local government and other agencies over time.

### Empowering communities

Good support structures can buffer negative mental health and psychosocial impacts. Elements that promote recovery and resilience for both individuals and communities include help from, and helping others. This increases community feeling and enables supportive social networks and collective problem solving. Positive trusting relationships between organisations and communities are fundamental to successful initiatives and those based on preexisting relationships have a much greater chance of success. Ensuring systems are in place to quickly support community initiatives without unnecessary bureaucratic red tape will increase both short and long-term community resilience and help with recovery.

### Young people

Schools are an important support system for young people and families. However, they are often not given adequate training and resourcing to provide this support. Alongside supporting teachers and schools, specialist mental health support may be needed for young people.



## Incorporate kaupapa Māori approaches

Māori recovery approaches are characterised by collective responsibility, authority, agency and action. These have been proven to be extremely effective at enabling Māori and wider community resilience. It is important to appropriately resource and enable iwi, hapū and other Māori organisations who provide support in this (and wider) ways.

## Ways of easing distress

The word 'psychosocial' reflects the interrelationship between individual psychological and social factors. Any approach to enhancing psychosocial recovery needs to be cross-sectoral, while acknowledging both risk and resources. It should promote or scaffold ways to empower people and communities to cope with their situation in context.

### *First three days*

Increased levels of stress and anxiety are inevitable after a disaster. The most important elements for government officials wishing to ease distress in the first three days of a disaster are to:

1

Provide reliable and consistent information about the event, including the involvement of experts in the type of disaster using multiple avenues of communication.

2

Support those in need to achieve physical safety and medical help where necessary.

3

Explain where and how to access practical support (food, drink, temporary accommodation, medication, communication, transport, money) if it is needed.

4

Provide timely and reliable information about the situation of loved ones and facilitate reunion with those loved ones. Personal contact between the bearer and receiver of both good and bad news is vital when it relates to the fate of loved ones.

5

Identify those affected and quantify the expected need for social support, paying specific attention to those groups most at risk.

6

Ensure those communicating are sensitive to culture and value systems.

7

Set realistic expectations about government response and show compassion.

## First month

Over the month after the disaster the following will help government officials decrease stress and anxiety in the population:

1

Provide help with the necessities of life where needed (safety, shelter, drink, food, medication, transport, communication).

2

Continue to provide timely and reliable information about the event across multiple channels of communication and expand expert commentary.

3

Engage with those affected in a human way, live up to the promises made, apologise if mistakes are made.

4

Set up 'one-stop shop(s)' for communities to access practical help, including financial support, insurance, legal advice, and referrals to other services.

5

Facilitate self-organisation and coordination of support within communities (e.g. student army, marae, food banks).

6

Communicate about expected psychosocial impacts and what people can do to help themselves and others, explain what is 'normal' to feel, emphasising that emotional reactions do not mean the person is mentally unwell or weak.

7

Organise a memorial for a collective moment of commemoration or mourning.

Key to psychosocial recovery is getting people in some way back to something that has aspects of 'normal life' through establishing routines. Further explanation of the key elements in providing psychosocial support can be found in the [Ministry of Health's Framework for Psychosocial Support in Emergencies](#).





## How do disasters affect psychosocial health?

Psychosocial recovery involves positively adapting to a changed reality. Most people are resilient and will recover in time. However, a subset, estimated at between 5-15 percent, will have significant ongoing psychological issues that require professional help.

*“The risk of psychiatric morbidity is greatest in those with high perceived threat to life, low controllability, lack of predictability, high loss, injury, the possibility that the disaster will recur, and exposure to the dead and the grotesque.”*

*Ursano et al 2008, p. 1018*

Psychosocial recovery can last from weeks to decades depending on the person affected. The length of time involved in recovery also differs depending on the type of disaster and whether the event:

- hits hard and fast (such as a flood),
- has an initial traumatic impact with ongoing reminders (such as earthquake sequences with aftershocks)
- lasts over months (such as a pandemic).

### Christchurch earthquake sequence, 2011: Need for ongoing communication

Typically, disasters are treated as acute events with relatively short periods of impact and response. However prolonged aftershock sequences result in communities having to cycle through periods of impact, response and recovery. Many people reported not understanding how aftershock sequences worked, how they should respond to the aftershocks, and that aftershocks were causing them distress.

The worst levels of anxiety in the Greater Christchurch population occurred approximately 18 months after the earthquake, which is attributable to the ongoing aftershocks. In this situation there is a need for information that people can translate into actions that address safety and wellbeing. <sup>1</sup>

Decisions and uncertainties about housing can be major stressors after disasters. The lack of control caused by uncertainty around insurance, buyout schemes, and changing building assessment designations (i.e. ‘stickering’).

Harm to the natural environment and natural resources can cause distress and grief, in multiple ways, for many people. This includes psychological, physical, and spiritual health impacts that result from the threat of climate change. Māori can be particularly affected because of their genealogical relationship to the whenua and their role as guardians and protectors of te taiao. In te ao Māori, a ‘natural hazard’ can be a tīpuna or atua. <sup>2</sup>

<sup>1</sup>Becker et al 2019

<sup>2</sup>Campbell & Blake (2021)

## What promotes psychosocial recovery and resilience?

Individuals who feel safe, hopeful and useful are usually protected from long term psychosocial impacts after a disaster. Those who have skills in solving problems and emotional regulation are less likely to experience long-term negative impacts. Strategies such as self-soothing, reframing, humour and radical acceptance can be helpful. The ability to establish routines, find a sense of stability, and return to activities that are pleasurable and give a sense of mastery are vital.

The more social support an individual has, the more protected they are from negative psychosocial effects.

### Japanese triple disaster 2011: Protectiveness of social infrastructure

Social infrastructure encompasses places that build connections between people. This includes community centres, libraries, walking trails, parks, cafes, sports facilities, museums, mosques, churches, and public spaces. In the Tōhoku earthquake, tsunami and nuclear disaster, elderly people were most at risk of death. Research controlling for a variety of other factors found that elderly people with higher levels of social infrastructure had lower mortality rates.<sup>3</sup>

There is an important interplay between physical and psychosocial recovery. If the community supports the physical recovery process, negative psychosocial impacts are likely to be mitigated. Disempowerment essentially reinforces the initial trauma and commonly leads to anger and frustration across affected communities. The most effective way of minimising these negative responses is to empower local communities by authentically involving them in co-coordinating and co-leading the response and recovery effort.

### A watching brief

Ensuring affected individuals have access to reliable and timely information, someone who will listen, and community-led interventions will help their innate psychological resilience and coping mechanisms come to the fore. After an emergency it is appropriate to practise 'watchful waiting', which involves monitoring individuals (e.g., at doctor's appointments) or communities (e.g., changing numbers asking for budgeting support) as a way of judging whether intervention is necessary.

If this 'watchful waiting' identifies a severely affected person, it is vital to ensure they have timely and efficient access to referral systems and appropriate specialised care.

### Resilience

Resilience describes "the ability to withstand, adapt and transform capacities and resources in the context of uncertainty, change, unpredictability and surprise" (Barjaková,& Garner, 2022). Individuals and communities cannot be perpetually resilient without limits. People would prefer not to have to be resilient in the first place. Sometimes those who take longer to get back on their feet appear to be resilient simply because they have no other option but to keep going.

<sup>3</sup>Aldrich (2023)



*“Without healthy and sustainable recovery of all affected people, the very idea of community and built environment resilience may be an unattainable blueprint.”*

*Uekusa & Matthewman 2022*

## **Black Saturday Bushfires, Australia: Relocation adds to emotional complexity**

People are attached to both their dwellings, their local communities, and their landscape in cultural and emotional ways. Responses to having to relocate are complex, non-linear, and intimately tied to context.

Research following the Black Saturday bushfires found that people who left experienced emotional turmoil, such as guilt for leaving, while those who stayed felt abandoned by those who moved. Those who felt agency or control in their decisions to stay or leave were more likely to experience better long-term wellbeing.



*Strathewen, VIC after Black Saturday.  
Credit: CSIRO, via Wikimedia Commons*

## **Interventions**

Psychological first aid appears promising as part of a comprehensive, post-emergency intervention strategy. Research suggests that a skills-building approach is more effective than supportive counselling. Such approaches include a focus on helping those in distress to define their circumstances as external problems, identifying emotions and taking action to tackle challenges, and mindfulness-based stress reduction techniques.

The evidence is clear that single-session individual psychological or critical incident stress debriefing should not be used. It is unhelpful, and it can cause harm by encouraging people who have experienced trauma to talk about what happened when in high arousal.

There is currently little evidence on how telephone helplines contribute to psychosocial recovery.

## Christchurch earthquake sequence, 2011: Community hub focused on solutions

After the February 2011 earthquake, locals and officials in Kaiapoi facilitated the development of a 'Hub' in the heart of the town. This provided a range of council- and community-based services and was a base for engineering and social recovery teams. If political stability is an indicator of a successful recovery process, it is telling that in the 2013 local government elections, only one Waimakariri District Councillor (of 10) was not re-elected, and the mayor was re-elected without challenge.

## Communication

When planning how to respond in the early stages after an emergency, practical, pragmatic support delivered with empathy is likely to be most effective. It is especially important to acknowledge loss and grief. Successful recovery is built on effective two-way communication between affected communities and agencies involved in recovery and on the ability of people to access accurate and timely information. If people do not have easy access to accurate, trustworthy information they are likely to go to alternative avenues resulting in rumour and speculation. Trusted sources, such as ministers in local churches or local community leaders can be helpful in disseminating this information.

A coordinated communications strategy is necessary when working with the media. Spokespeople on scientific aspects of a disaster should be able to show their expertise to engender trust. However, this scientific experience needs to come across as human and empathetic. After a disaster there is also a 'post-event window' with an opportunity to turn awareness into preparation. Experts should be brought in to consult on how to best achieve this.

It is important to use a range of communication channels, including written leaflets, websites, social media, telephone helplines and outreach (door knocking). As people often have difficulty concentrating during and after an emergency it is likely to be necessary to repeat communications and deliver them in multiple formats that are short and easy to absorb and understand.

Informal community meetings can be helpful and reassuring for affected communities if handled sensitively but honestly. Spokespeople should be prepared to answer questions and act on community concerns.







## Vulnerable groups

Assumptions are frequently made about what constitutes 'vulnerability'. Just being a member of a specific group does not make someone vulnerable, instead vulnerability:

*"...reflects whether the people affected can prevent and resist the potential damage of the disaster and whether, if damage does occur, they can recover successfully."*

*Australian Institute for Disaster Resilience, 2018*

Some communities, however, are made vulnerable because their agency is constrained due to wider systemic racism or denigration. Those with the lowest socioeconomic capital tend to be disproportionately impacted in a disaster and tend to receive the least help and to a lesser standard. Acknowledging and addressing stigma, discrimination, and disparities will build trust and relationships.

Members of so-called 'vulnerable groups' may be informed and empowered, capable of supporting themselves and others during times of crisis and recovery.<sup>4</sup>

Communities that are often disproportionately affected by disasters include those with disabilities, refugees and migrants, bigger-bodied people, drug users, prisoners, sex workers, the homeless and other individuals stigmatised and made vulnerable through societal pressures. It is likely that these communities will act as the 'canaries' for ongoing psychosocial impacts in the general population.

## West Coast flooding, 2021: Drug treatment

Layers of vulnerability are particularly evident for people who inject drugs (PWIDs). Many in this category are already living in economic and social hardship and lack the social power to advocate for themselves and their needs. People who inject drugs may also be constrained in their ability to respond to a disaster due to physical and psychological processes that accompany drug use. In a study involving PWIDs following severe flooding in the Buller district of the West Coast in 2021, some participants who were unable to access their opioid substitution treatment due to supply issues reported they consumed substances they would not usually consume, or accessed them from alternative suppliers. Some study participants believed they endured intentional exclusion and stigma, and perceived that they were offered less support by emergency and health professionals.<sup>5</sup>

## First responders and carers

Those involved in the first response or on the front lines of caring for people after the disaster carry a significant burden and are more susceptible to future mental health issues, emotional exhaustion, compassion fatigue, physical health complaints, and stress.

*"If compassion fatigue is not recognised promptly, it may contribute to a vicious cycle: high stress levels may lead to errors, decreased safety, and dissatisfaction of patients and families. Poor work performance may lead to increased work pressure resulting in extensive emotional exhaustion and avoidance. Improving and maintaining nurses' wellbeing may help to improve patient safety and standards of care while preventing a potential vicious cycle leading back to compassion fatigue."*

*Chung & Davies 2016*

<sup>4</sup> MacDonald et al 2021

<sup>5</sup> Blake et al 2024

Support for first responders and carers should promote self-care and could include flexibility in work arrangements, a reduction in workload to help balance home and professional recovery work, social support, and explicit acknowledgement of the personal and professional impacts.

*“Professional supervision, access to communities of practice, and support with a focus on enhancing competency, relatedness, and autonomy may assist these workers to recognise and negotiate the difficult terrains of dual roles in recovery.”*

*Brady et al 2023*

## Young people

For children, sleep disturbances, fear of the dark, irritability and angry/aggressive behaviour, separation anxiety (including school avoidance), and general changes in behaviour, mood and personality are common. Children between 1-5 years may become afraid of separation, strangers, or “monsters”. Children between 6-11 years may engage in repetitious storytelling or play that re-enacts parts of the disaster. Adolescent behaviour becomes increasingly similar to adult responses and may include greater levels of aggression, defiance, substance abuse and risk-taking behaviours.

### **Cyclone Gabrielle, Aotearoa, 2023: Growing up in New Zealand survey**

Overall, there was no difference in quality of life and resilience between young people who were affected, knew someone else affected, or were not affected by the extreme weather events. However, young people who were affected or knew someone else affected by the extreme weather events reported higher depression and anxiety and worse sleep scores six months later than those who were not affected. Depression symptom scores were slightly lower after the extreme weather events for the young people than they were after COVID.

Children of all ages are strongly affected by how their caregivers respond to the disaster. Family relationships are by far the most important factor in recovery mentioned by children and young people. Separating children from their loved ones for extended periods by sending them away from the scene of the disaster is not recommended.

*“After disasters when children lack a sense of routine and normalcy and are suffering physically and emotionally, it is difficult, if not impossible for family members and communities to begin the process of recovery”*

*Fothergill & Peek 2006*

In the same way involvement in decision-making can support psychosocial wellbeing in adults, inclusion in forward-looking recovery and response can help decrease negative health impacts for young people. Many of the young people surveyed by the Growing Up in New Zealand study after Cyclone Gabrielle expressed a wish to help in this way.



Re-opening schools as soon as possible is a protective measure as this enables support from teachers and peers. Schools are also an effective way to identify vulnerable children and families, especially as adolescents are unlikely to seek out counselling. Extra resources are required to enable training and support for school staff who will also be coping with their personal response to the disaster.

## Background

Effective disaster recovery requires consideration of how inequities create vulnerabilities prior to a disaster. These inequities are likely to be magnified post disaster through entrenched structural differences in access to resources. This is especially true when it comes to psychosocial recovery within a country already experiencing a mental health crisis.

Every year, approximately 175,000 New Zealanders access specialist and non-government organisation services for mental health and/or addiction support.<sup>6</sup> Māori were the most likely to access mental health and addiction services. People living in the most deprived areas were 1.6 times more likely to access mental health and addiction services than people living in the least deprived areas.<sup>7</sup>

Data from the 2021 General Social Survey showed that 28 percent of New Zealanders had poor mental wellbeing, with higher percentages for those aged 25-64. The number of those aged 15-24 with poor mental wellbeing also rose significantly from the previous survey in 2018. Disabled people, single parents, and people who identified as LGBTQIA+ or belonged to a sexual minority were amongst those who experienced higher rates of poor overall mental wellbeing.<sup>8</sup>

Māori have significant experience and knowledge of disaster management in relation to natural phenomena. Māori have applied traditional knowledges, values and practices to address disaster-related risks and community recovery during previous periods of adversity. Cultural attributes protective of community wellbeing have also been noted in contemporary Māori communities following discrete flooding events. (Kenney & Phibbs 2015)



<sup>6</sup> <https://www.health.govt.nz/our-work/mental-health-and-addiction/mental-health-and-addiction-data>

<sup>7</sup> <https://tewhatauora.shinyapps.io/mental-health-and-addiction-web-tool/>

<sup>8</sup> <https://www.stats.govt.nz/news/new-zealanders-mental-wellbeing-declines/>

## Existing regulation and policy

Key planning documents relating to psychosocial support include:

- [Framework for Psychosocial Support in Emergencies \(Ministry of Health 2016\)](#)
- [Guide to the National CDEM Plan](#) (Ministry of Civil Defence and Emergency Management 2015a)
- [Welfare Services in an Emergency: Director's guideline for CDEM Groups and agencies with responsibilities for welfare services in an emergency](#) (DGL 11/15) (Ministry of Civil Defence and Emergency Management 2015b)
- [National Health Emergency Plan](#) (Ministry of Health 2015)
- [New Zealand Influenza Pandemic Plan: A framework for action](#) (Ministry of Health 2017).

These documents are all more than seven years old and have not been reviewed in the light of Aotearoa New Zealand's more recent disasters, including COVID-19, the Kaikōura earthquake and Cyclone Gabrielle.

## Areas for more work

Further research is needed in the following areas:

- The impact of telephone helplines on psychosocial recovery.
- How best to support psychosocial recovery for those exposed to long-term ongoing disasters.
- How communities can be better supported, especially those 'unofficial' responders such as marae, animal rescue organisations, and rural support trusts.
- Evaluation of interventions. This evaluation would focus on establishing evidence of benefit of existing interventions and then on finding ways to improve them where required.

## Conclusion

Since the Canterbury Earthquakes there has been a wide range of research studying the impact of disasters on communities. This series of briefings is designed to compile this research into concise, policy-focused findings with a practical application for community recovery immediately post-disaster.

When the mental health system is under stress, handling psychosocial needs post-disaster is much more difficult. When individuals, families and communities are supported, then the demand on mental health services is reduced. Researchers were all in agreement that existing mental health stress and inequity were exacerbated by disasters. If Aotearoa New Zealand's mental health and community support system was under less stress, provision of psychosocial support services post-disaster would become easier.



## Bibliography

- Aldrich, D.P. (2023) How social infrastructure saves lives: a quantitative analysis of Japan's 3/11 disasters. *Japanese Journal of Political Science* (2023),24, 30–40 <https://doi.org/10.1017/S1468109922000366>
- Barjaková, M., Garneró, A., (2022). Risk factors for loneliness, EUR 30970 EN, Publications Office of the European Union, Luxembourg [DOI: 10.2760/617733](https://doi.org/10.2760/617733)
- Beaglehole, B (2022) The psychological impacts of the Canterbury Earthquakes, Thesis, University of Otago <https://ourarchive.otago.ac.nz/bitstream/handle/10523/15197/BeagleholeBen2023PhD.pdf?sequence=1&isAllowed=y>
- Becker, JS., Potter, SH., McBride, SK., Wein, A., Doyle, EEH., & Paton, D. (2019). When the earth doesn't stop shaking: How experiences over time influenced information needs, communication, and interpretation of aftershock information during the Canterbury Earthquake Sequence, New Zealand. *International Journal of Disaster Risk Reduction*. 34, 397-411 <https://www.sciencedirect.com/science/article/pii/S2212420918312792>
- Australian Disaster Resilience Community Recovery Handbook, Australian Institute for Disaster Resilience, 2018. <https://knowledge.aidr.org.au/media/5634/community-recovery-handbook.pdf>
- Blake, D., Adams-Hutcheson, G., Gibbs, L., & Quinn, p. (2022). Post-disaster residential mobility: Considerations for Aotearoa New Zealand and Australia. *Australasian Journal of Disaster and Trauma Studies*. Volume 26, Number 3. [https://trauma.massey.ac.nz/issues/2022-3/AJDTs\\_26\\_3\\_Blake.pdf](https://trauma.massey.ac.nz/issues/2022-3/AJDTs_26_3_Blake.pdf)
- Blake, D.; Pooley, S. & Lyons, A. (2020) Stigma and disaster risk reduction among vulnerable groups: Considering people receiving opioid substitution treatment, *International Journal of Disaster Risk Reduction*, Volume 48, <https://doi.org/10.1016/j.ijdr.2020.101588>
- Blake, D.; Rijnink, A; Lyons, A. & Aspin, C. (2024) Losing everything: Experiences of a flood for people who inject drugs in Aotearoa New Zealand, *International Journal of Disaster Risk Reduction*, Volume 106, 2024, <https://doi.org/10.1016/j.ijdr.2024.104440>
- Brady, K., Gibbs, L., & Harms, L. (2023) Recovery workers who have also been personally affected by disasters: Exploring the perspective of people who have dual experiences of disaster recovery. *Australasian Journal of Disaster and Trauma Studies*, Volume 27, Number 1. [https://trauma.massey.ac.nz/issues/2023-1/AJDTs\\_27\\_1\\_Brady.pdf](https://trauma.massey.ac.nz/issues/2023-1/AJDTs_27_1_Brady.pdf)
- Campbell, E. & Blake, D. Aotearoa New Zealand edition (2021), from Quinn, P., Gibbs L., Blake D., Campbell E., Johnston D., and Ireton G. (2021). [Guide to Disaster Recovery Capitals \(ReCap\)](#). Wellington, Aotearoa New Zealand: Bushfire and Natural Hazards Cooperative Research Centre; July 2021
- Canterbury Earthquake Recovery Authority (2014). Canterbury Wellbeing Index June 2015. Christchurch: Canterbury Earthquake Recovery Authority <https://thehub.swa.govt.nz/assets/documents/canterbury-wellbeing-index-june-2015-full-document.pdf>
- Chung, J., & Davies, N. (2016) A Review of Compassion Fatigue of Nurses During and After the Canterbury Earthquakes. *Australasian Journal of Disaster and Trauma Studies*. Volume 20, People in Disasters Special Issue [http://tur-www1.massey.ac.nz/~trauma/issues/2016-2/AJDTs\\_20-2\\_Chung.pdf](http://tur-www1.massey.ac.nz/~trauma/issues/2016-2/AJDTs_20-2_Chung.pdf)
- Fountain, J. & Cradock-Henry, N.A. (2023) We're all in this together? Community resilience and recovery in Kaikōura following the 2016 Kaikōura-Hurunui earthquake, *New Zealand Journal of Geology and Geophysics*, 66:2, 162-176, [DOI: 10.1080/00288306.2023.2167842](https://doi.org/10.1080/00288306.2023.2167842)

Freeman, C.; Nairn, K. & Gollop, M. (2015) Disaster impact and recovery: what children and young people can tell us, *Kōtuitui: New Zealand Journal of Social Sciences Online*,10:2, 103-115, DOI: [10.1080/1177083X.2015.1066400](https://doi.org/10.1080/1177083X.2015.1066400)

Gluckman, P. (2011) The psychosocial consequences of the Canterbury earthquakes: A briefing paper, Office of the Prime Minister's Science Advisory Committee <https://www.dpmc.govt.nz/sites/default/files/2024-03/christchurch-earthquake-briefing-psychosocial-effects-2011-05-10.pdf>

Griffin, C.; Wreford, A.; Cradock-Henry, N.A. (2023) 'As a farmer you've just got to learn to cope': Understanding dairy farmers' perceptions of climate change and adaptation decisions in the lower South Island of Aotearoa-New Zealand. *Journal of Rural Studies*, Volume 98, 147-158. ISSN 0743-0167. <https://doi.org/10.1016/j.jrurstud.2023.02.001>

Guilaran, J.; de Terte, I.; Kaniasty, K. & Stephens, C. (2018). Psychological Outcomes in Disaster Responders: A Systematic Review and Meta-Analysis on the Effect of Social Support. *International Journal of Disaster Risk Science*. 9. [10.1007/s13753-018-0184-7](https://doi.org/10.1007/s13753-018-0184-7).

Nguyen, T. M.; Noy, I. & Stahlmann-Brown, P. (2022). Past experience of drought, drought risk perception, and climate mitigation and adaptation decisions by farmers in New Zealand. *Environmental Hazards*, 22(3), 264-284. <https://www.tandfonline.com/doi/abs/10.1080/17477891.2022.2141179>

Jacobs, J., Oosterbeek, M., Tummers, L.G., Noordeggraaf, M., Yzermans, C.J., & Duckers, M.L.A. The organization of post-disaster psychosocial support in the Netherlands: a meta-synthesis. *European Journal of Psychotraumatology* 2019, VOL. 10, 1544024 <https://doi.org/10.1080/20008198.2018.1544024>

Johal S, Mounsey Z, Tuohy R, Johnston D. Coping with Disaster: General Practitioners' Perspectives on the Impact of the Canterbury Earthquakes. *PLOS Currents Disasters*. 2014 Apr 2 . Edition 1. doi: [10.1371/currents.dis.cf4c8fa61b9f4535b878c48eca87ed5d](https://doi.org/10.1371/currents.dis.cf4c8fa61b9f4535b878c48eca87ed5d)

Kaniasty, K., de Terte, I., Guilaran, J. & Bennett, S. A scoping review of post-disaster social support investigations conducted after disasters that struck the Australia and Oceania continent. *Disasters*, 2020, 44(2): 336–366. doi: [10.1111/disa.12390](https://doi.org/10.1111/disa.12390)

Kenney, C.A., & Phibbs, S. A Māori love story: Community-led disaster management in response to the Ōtautahi (Christchurch) earthquakes as a framework for action. *International Journal of Disaster Risk Reduction* 14 (2015) 46–55 <http://dx.doi.org/10.1016/j.ijdrr.2014.12.010>

Kwok, A.H., Doyle, E.E.H., Becker, J., Johnston, D. & Paton, D. What is 'social resilience'? Perspectives of disaster researchers, emergency management practitioners, and policymakers in New Zealand. *International Journal of Disaster Risk Reduction* 19 (2016) 197-211. <http://dx.doi.org/10.1016/j.ijdrr.2016.08.013>

Le Dé, L., Wairama, K., Sath, M. and Petera, A. (2021), Measuring resilience: by whom and for whom? A case study of people-centred resilience indicators in New Zealand, *Disaster Prevention and Management*, Vol. 30 No. 4/5, pp. 538-552. <https://doi.org/10.1108/DPM-04-2021-0128>

MacDonald, C., Mooney, M., Johnston, D., Becker, J., Blake, D., Mitchell, J., . . . Naswall, K.(2021). Supporting community recovery: COVID-19 and beyond. (Report No. 2021/02). Wellington: Massey University <http://hdl.handle.net/10179/16783>

Ministry of Health. 2016. Framework for Psychosocial Support in Emergencies. Wellington: Ministry of Health. <https://www.health.govt.nz/publication/framework-psychosocial-support-emergencies>

Mooney, M., MacDonald, C., Becker, J., Blake, D., Gibbs, L., Johnston, D., . . . Alefaio, S.(2021). Updated psychosocial support: Evidence base in the COVID-19 context. (Report No. 2021/01): Massey University <http://hdl.handle.net/10179/16782>



Mooney, M., Tarrant, R., Paton, D. Johal, S. & Johnston D. 2017. Getting through: Children's effective coping and adaptation in the context of the Canterbury, New Zealand, Earthquakes of 2010-2012. *Australasian Journal of Disaster and Trauma Studies*, Volume 21, Number 1

Payne, BA., Becker, JS., Kaiser, LH., & Taylor-Offord, S. (2020). 'They're going to arrive, ready or not': hill-based residents capacity to support the evacuated after earthquake and tsunami. *Australian Journal of Emergency Management*. 35(4), 35-41 <http://hdl.handle.net/10179/20136>

T. M. Nguyen, I. Noy, P. Stahlmann-Brown. (2022). Past experience of drought, drought risk perception, and climate mitigation and adaptation decisions by farmers in New Zealand. *Environmental Hazards*, 22(3), 264-284 [DOI: 10.1080/17477891.2022.2141179](https://doi.org/10.1080/17477891.2022.2141179)

Thornley, L.; Ball, J.; Signal, L.; Lawson-Te Aho, K. & Rawson, E (2015) Building community resilience: learning from the Canterbury earthquakes, *Kōtuitui: New Zealand Journal of Social Sciences Online*, 10:1, 23-35, [DOI: 10.1080/1177083X.2014.934846](https://doi.org/10.1080/1177083X.2014.934846)

Uekusa, S., & Matthewman, S. (2022). The limits of resilience: A discussion of resilience from the perspectives of critical disaster studies. *Australasian Journal of Disaster and Trauma Studies*, Volume 26, Number 3. [https://trauma.massey.ac.nz/issues/2022-3/AJDS\\_26\\_3\\_Uekusa.pdf](https://trauma.massey.ac.nz/issues/2022-3/AJDS_26_3_Uekusa.pdf)

Vallance, S.; & Carlton, S., First to respond, last to leave: Communities' roles and resilience across the '4Rs', *International Journal of Disaster Risk Reduction*, Volume 14, Part 1, 2015, Pages 27-36, ISSN 2212-4209, <https://doi.org/10.1016/j.ijdr.2014.10.010>

Vinnell, LJ., Orchiston, C., Becker, J., & Johnston, D. (2019). Pathways to earthquake resilience: Learning from past events. *Australasian Journal of Disaster and Trauma Studies*. 23(2), 35-40 [https://trauma.massey.ac.nz/issues/2019-2/AJDS\\_23\\_2\\_Editorial.pdf](https://trauma.massey.ac.nz/issues/2019-2/AJDS_23_2_Editorial.pdf)



## Contact us

### Resilience to Nature's Challenges

*Kia manawaroa – Ngā Ākina o Te Ao Tūroa*

**E:** [resiliencechallenge@gns.cri.nz](mailto:resiliencechallenge@gns.cri.nz)

**W:** [resiliencechallenge.nz](http://resiliencechallenge.nz)