

# Digital disparities: Tech solutions for indigenous communities

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## **Dr Dianne Wepa reflects on a study detailing the experiences of Māori kaumātua, who utilised digital technology to address health needs during COVID-19. It highlights challenges, resilience, and strategies for maintaining connections, emphasising the importance of digital technology in disaster management and the need to address digital disparities**

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Climate change-related weather events are increasingly impacting social connectedness. Digital technology plays a vital role in communication, education, business, health, and economic sustainability. This study explored the experience of Māori kaumātua (elders) using digital technology to meet their health needs within the tribal region of Ngāti Kahungunu, New Zealand, during the COVID-19 pandemic.

Using Kaupapa Māori methodology, the study highlighted challenges, resilience, and strategies used by Māori to maintain connectedness and access services. Findings underscore the importance of digital technology in disaster management and the need to address digital disparities.

### **Digital connection in New Zealand during extreme weather events**

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New Zealand has a population of five million people, and 16% identify as Māori ([Jefferies et al., 2020](#)). Frequent severe weather events regularly disrupt healthcare, communication, and services ([Grout et al., 2022](#)). The COVID-19 alert level system effectively managed the crisis, with remote work and digital communication becoming essential ([Cumming, 2022](#)). Climate change intensified natural disasters, affecting health, food security, and infrastructure. In New Zealand, flooding often isolates communities from healthcare and supplies. In 2023, Cyclones Hale and Gabrielle caused significant damage, particularly in Hawke's Bay and Gisborne, emphasising the need for digital technology in disaster response ([McCabe, 2023](#); [Stats NZ, 2023](#)).

Despite increased digital technology use over two decades, digital exclusion persists, particularly among Māori, Pacific communities, rural residents, older adults, unemployed persons, and persons with disabilities. The COVID-19 pandemic and Cyclone Gabrielle highlighted the importance of digital technology for Māori kaumātua in maintaining connectedness and accessing services, though digital disparities exacerbated health inequalities ([Grimes & White, 2019](#)).

### **An exploratory study to understand healthcare digital technology use among Māori kaumātua during COVID-19**

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This study was guided by a Kaupapa Māori methodology conducted by Māori researchers who are connected to the community ([Wepa & Wilson, 2019](#)). This approach was selected because the Primary Investigator identifies as Māori and is linked to the community through whakapapa, or genealogical ties.

To ensure that cultural safety protocols and kaupapa Māori methodology were followed, two female kaumatua, or elders, assisted with access to various communities and remained present throughout the interviews. This approach guaranteed that the elders provided a moderating influence on the research process and that Māori cultural protocols were respected.

Ethics approval was granted by Auckland University of Technology, which supported this study as part of a continuation of a three-phase study ([Wepa et al., 2023](#)). Fourteen Māori families from Ngāti Kahungunu were purposively selected to participate in semi-structured interviews between December 2022 and February 2023. Participants aged 45 to 90 were from rural and small-town communities. Interviews were conducted using cultural safety protocols, included group and one-on-one sessions, and were audio-recorded and transcribed using thematic analysis ([Braun & Clarke, 2014](#)).

This approach was chosen to ensure the validity and reliability of the results, instilling confidence in the research findings. The process involved identifying keywords and phrases from the transcripts, indicating potentially relevant concepts. The extracted concepts were then grouped into several themes of similar nature. Discussions were held between the researchers to achieve a consensus when there was a difference in opinion, ensuring a collaborative and inclusive research process. Unexpectedly, Cyclone Gabrielle occurred partway through the interviews, which led to the research team including accounts from the participants about this event during the data collection phase.

## **Themes that emerged as a result of the study**

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### **Social connectedness and resilience:**

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Kaumātua used digital platforms to stay connected and access health services, emphasising community support. Participants emphasised the significance of collective action, community solidarity, and traditional support networks in overcoming challenges posed by isolation during COVID-19 and Cyclone Gabrielle:

- “A lot of good medicine is basic love; how do we support each other? Through aroha (love).” (*Participant 4*).
- “No department knows me better than my moko (grandchild) does.” (*Participant 10*)

### **Digital literacy and access:**

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A digital divide was evident, with many participants relying on younger family members for technology use and information access. Limited digital literacy, privacy concerns, connectivity issues, and high costs were also highlighted:

1. “If we are supposed to use QR codes, where is the privacy around that?”  
(*Participant 1*)
2. “First, it was COVID-19, and now it is the cyclone, with no coordinated approach by the government – where will it end?” (*Participant 6*)
3. “We used to have a health clinic, but now you are told to go online, and nobody is around to help if you do not have someone in the family to help.” (*Participant 3*)

### **Barriers to telecommunications:**

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Power outages and poor infrastructure during Cyclone Gabrielle hindered communication and access to emergency services:

- “Good phone and internet coverage was only available with one company.”  
(*Participant 7*)
- “A rich man moved out to our beach and complained about the internet; then a new tower was built soon after.” (*Participant 11*)

### **Reducing digital disparities**

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Social connectedness is vital for health and wellbeing during crises ([Saeri et al., 2018](#)). Digital literacy gaps and unreliable infrastructure have disproportionately impacted Māori communities ([Mason et al., 2021](#)). Strengthening community initiatives and incorporating Indigenous knowledge into disaster management can enhance resilience ([United Nations, 2025](#)).

Digital literacy training and access are crucial for improving Māori health and wellbeing. Strategies should prioritise reducing digital disparities through culturally appropriate interventions.

Kaupapa Māori methodology provided culturally relevant insights, but the small sample size and dependence on family assistance may have influenced data accuracy. Digital technology improves social connectedness and healthcare access for Māori kaumātua during emergencies. Tackling digital disparities is essential for enhancing Indigenous communities’ health outcomes and disaster resilience.

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#### **Stakeholder Details**

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