Contents:
Volume 22, Number 1

Research Papers

Practice Update

ACEM2018 ASM
ON THE EDGE
35TH ANNUAL SCIENTIFIC MEETING PERTH 18-22 NOVEMBER

**18 - 22 November 2018
Perth Convention &
Exhibition Centre**

acem2018.com

Keynote Speakers

The 35th Annual Scientific Meeting of the Australasian College for Emergency Medicine (ACEM) will take place at the Perth Convention and Exhibition Centre, 18 - 22 November 2018.

The theme – 'On the Edge' – reflects Perth's location looking out over the beautiful Indian Ocean at sunset and also neatly leads on to multiple different facets of life in Emergency Medicine:

On the edge of life and death; on the edge of society; on the edge of the future while remembering the past; on the edge of new technologies; on the edge of our own personal wellbeing.

Come and soak yourselves in the delights of Western Australia. Come early and spend some time in the world class holiday and wine region that is Margaret River. Stay late and explore Rottnest, the Coral Coast or the Great Southern Region.

Come and update your knowledge and skills at the largest Australasian Emergency Medicine Meeting of the year in the sunniest capital city in Australia.

Dr Martin Than
New Zealand

Assoc. Prof. Eillyne Seow
Singapore

Assoc. Prof. Anna Holdgate
Sydney, Australia
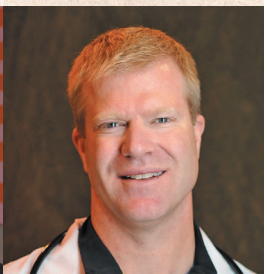
Dr Ken Milne
Ontario, Canada

KEY DATES

Early bird registration	Now open
Call for abstracts	Now open
Call for abstracts close	31 July 2018
Early bird registration closes	15 August 2018

Proudly supported by

Tourism WESTERN AUSTRALIA

PERTH CONVENTION BUREAU

AUSTRALASIAN COLLEGE FOR EMERGENCY MEDICINE
ACEM

35 YEARS
1983 – 2018

Meeting organisers

encanta event management

P: 08 9389 1488   E: acem2018@encanta.com.au
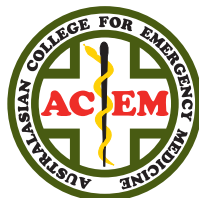
Where is social work in emergency management? Exploring visibility in New Zealand online media

Kathryn Hay [1]
Katheryn Margaret Pascoe [1]

[1] School of Social Work, Massey University, Palmerston North, New Zealand.

Author correspondence:
Kathryn Hay
School of Social Work
Massey University
Private Bag 11-222
Palmerston North 4442
New Zealand
Email: K.S.Hay@massey.ac.nz

Abstract

Registered social workers in New Zealand have transferable skills and capabilities that enable them to work with diverse populations at levels including the individual, family and community. Working across government and non-government organisations, they are well-situated to effectively contribute to emergency management. Despite this, their current engagement in emergency management is largely invisible even though, anecdotally, it is known that many social workers have been active in this field. In the main, public understanding of social workers is limited and they are frequently portrayed by the media in negative terms, with an emphasis on critical incidents such as child deaths. This limited reporting of the breadth and depth of the knowledge and skills of social workers may affect credibility, perception and uptake. Consequently, media portrayals may limit other professionals' engagement with them in the planning and mitigation phases of emergency management, in particular. Further, the public may be reluctant to seek or accept social workers' professional support during and after an emergency. This article presents the results of a content analysis of New Zealand online media depictions of social work and emergencies over the past ten years. The findings illustrate the minimal visibility of social work and emergencies in New Zealand media. Social work representations are largely focused on the profession having a role in addressing ongoing psychosocial needs in the mid- and longer-term recovery phases. Recommendations include increasing positive media profiling of social workers and illuminating the broad scope of their practice. Enhancing current relationships between the social work profession and the emergency management sector will also lead to more positive well-being outcomes for individuals, families, and communities in New Zealand.

Keywords: *Social work; disaster, emergency management, media, New Zealand*

According to Bisman (2004) and the Aotearoa New Zealand Association for Social Workers (ANZASW) (2013), *social work* is founded on the values of human rights, social justice, advocacy, social change and empowerment. As a profession, it seeks to ameliorate personal, social, community and global challenges (ANZASW, 2013; Bisman, 2004). The practice of *social workers* is underpinned by The Global Agenda for Social Work. This agenda was written by the International Association of Schools of Social Work, the International Council on Social Welfare and the International Federation of Social Workers, and recognises that "people's health and wellbeing suffer as a result of inequalities and unsustainable environments related to climate change, pollutants, war, natural disasters and violence" (IASSW, ICSW, & IFSW, 2012, p.1). The Global Definition of Social Work, by the IASSW and the IFSW (2014) highlights that it is both a practice-based and academic discipline that focuses on the well-being and liberation of people, especially those who may be disadvantaged or marginalised.

In New Zealand, registered social workers are employed in a range of fields of practice including government, non-government, *iwi* and other indigenous Māori groups and organisations (Hay, Dale & Cooper, 2016), where iwi refers to Māori tribal groups. They draw on a diversity of knowledge bases in their practice, for example, a strengths perspective, indigenous methods, community and social development, resilience, sustainable development, preventive and early intervention work, and solutions-focused interventions (Drolet et al., 2015; Hollis-English, 2015; Tiong Tan & Yuen, 2013). Social workers engage with people across the life-span and have the analytical skills, knowledge and capabilities to work alongside individuals, families, *whānau* and

communities (Hay et al., 2016), where whānau is a Māori term referring to family and family-like groups. Practising in diverse settings including schools, hospitals, non-government organisations, prisons, iwi social services and government agencies, social workers are often engaged with the most vulnerable members of society and must be responsive to changing social problems, shifting demographics, as well as new legislation and policy (Dominelli, 2010; Kamerman, 2002; Marlowe, 2014). Social workers therefore tend to be flexible and adaptable in their work across myriad practice and policy domains.

There are currently over 7,500 registered social workers in New Zealand (Social Workers Registration Board, 2017). Several other titles may be used to describe a person who is practising social work. These may include, but are not limited to, *human service worker*, *community worker*, *youth worker*, and even *counsellor* (van Heugten, 2001). These terms can create confusion as to who a social worker is, what qualification they may hold, whether they are registered and, more simply, what they do in their professional role. The nomenclature of Social Worker is not a protected title in New Zealand, although this is likely to change when registration becomes mandatory. Draft legislation affirming this change is currently before a parliamentary select committee. For the purposes of the current article, the term social worker refers to a person who is registered with the New Zealand Social Workers Registration Board.

Social work practice does not appear to be well understood by the New Zealand public where media exposure tends to focus on negative critical incidents such as child deaths (Beddoe, 2014; Stanfield & Beddoe, 2013; Keenan, 2000). The media plays an important role in informing and educating the public and can significantly influence public perception and credibility of individuals and organisations (Motion & Weaver, 2005; Stanfield & Beddoe, 2013). Negative, stereotypical and inaccurate media reporting on the professional role of social workers may therefore undermine public confidence in the profession while limiting understandings of the role and effectiveness of social workers (Chenoweth & McAuliffe, 2017). Writing from a United Kingdom context but reflective of the New Zealand situation, Dominelli (2010, p.2) suggested that:

> … the public is unaware of what social workers do … Nor does the general public know about practitioners' heroic and innovative interventions in some of the most horrendous situations brought about through

natural and (hu)man-made disasters, where they are among the many professionals who provide emergency relief responses.

In New Zealand, multiple professions are active across the four phases of emergency management: reduction, readiness, response and recovery (Ministry of Civil Defence and Emergency Management, 2015). In the past decade, and particularly following the Christchurch earthquakes in 2010 and 2011, social work practice and its connection with emergency management have received increased attention in the social work literature (for example: Adamson, 2014; Hunt, Sargisson, Hamerton, & Smith, 2014; van Heugten, 2013, 2014). This mirrors scholarly developments in Australia (For example: Cooper & Briggs, 2014; Du Plooy, Harms, Muir, Martin, & Ingliss, 2014; Pack, 2014; Pease, 2014; Shevellar & Westoby, 2014). Australasian literature on social work and emergencies (Adamson, 2014; Cooper & Briggs, 2014; Pack, 2014; Pease, 2014) has emphasised the importance of incorporating disaster knowledge and skills within the tertiary social work curriculum so that graduates may be better prepared for responding to emergencies. Using real or simulated disasters to support student learning with a focus on issues for specific populations, for example men and volunteers, has also been examined (Hunt et al., 2014; Pack, 2014; Pease, 2014). After the Rena oil spill in New Zealand, it was suggested that "…social workers will be one of the groups expected to respond to community need in a climate of increasing environmental and technological disasters…" (Hunt et al., 2014, p.43). The sum of these publications represents a growing view that social workers should be actively involved in emergency management.

Interestingly, and in comparison, Australasian disaster/ emergency management publications have given little visibility to the role and contribution of social workers in emergencies (Cooper & Briggs, 2014; Whelan, 1998; Winkworth, Healy, Woodward, & Camilleri, 2009). Perhaps this has been worsened by the fairly ambiguous terms mentioned above, such as human service worker, which could include but does not specifically name social workers. Following the Christchurch earthquakes, research into the work of, and impact on, certain human service professionals, namely general practitioners and nurses, was conducted by Johal and Mounsey (2015), Johal, Mounsey, Brannelly and Johnston (2016) and Johal, Mounsey, Tuohy and Johnston (2014). The importance of caring for these health professionals

has also been examined, by Huggard (2011). However, this body of literature appears to lack a specific focus on social workers and their practice in emergency management, and also a focus on the broader role of social work professionals in the same field (Johal et al., 2016).

Given their professional role, it follows that social workers' contributions during each phase of an emergency can be significant. Given an apparent paucity of research in both the domains of media portrayals of social workers and their role in emergencies, there is considerable scope to further examine understandings of the current and potential involvement of the social work profession. As an initial step to address this gap in knowledge, the current research identified how social work and social workers have been portrayed by New Zealand online media, concerning emergency responses over the peceding 10 years.

Method

A process of content analysis was employed to examine how social work, social workers and emergencies were portrayed in the New Zealand online media between 2006 and 2016. Content analysis was pertinent because it enabled the study and consideration of both the content and context of qualitative data through a process of systematic inquiry (Rubin & Babbie, 2016; Shuker, 2003; Spencer, Ritchie, Ormston, O'Connor, & Barnard, 2014). The chosen method included the analysis of both *manifest content*, in which the frequency of a term was quantified, and *latent content*, through which underlying meanings could be identified (Rubin & Babbie, 2016).

Sampling was undertaken once a research notification had been placed on the Massey University Low-Risk Ethics register. The sampling process involved locating relevant online news items produced from January 1st 2006 to December 31st 2016 that used the search term "social work*" and also one of the following words related to disasters or emergencies:

1) Emergency
2) Emergency management
3) Emergency response
4) Natural disaster
5) Man-made disaster
6) Earthquake
7) Emergency work
8) Disaster
9) Disaster worker
10) Pike river mine
11) Rena oil spill
12) Mangatepopo
13) Carterton balloon

The research was conducted across the three national online media sites: Stuff (www.stuff.co.nz), the New Zealand Herald (www.nzherald.co.nz), and Radio New Zealand (www.rnz.co.nz).

Retrieved articles were then numbered for ease of reference during and following coding. Once the articles were categorised according to identified themes, analysis of the latent and manifest content was conducted. This process involved an initial analysis by the second author and then review and auditing by the first author. The results of this analysis are outlined below.

Findings

The content analysis identified only 18 relevant articles published from 2006 to 2016. The terms in question were used a total of 32 times. Only one article contained the term social worker in the title: Social workers still helping out in Christchurch (Kinealy, 2011). Additionally, Kinealy (2011) was the only article focused solely on contributions from the social work profession during an emergency. Over 75 percent of the relevant articles referred to social work no more than once.

Fourteen of the articles were identified by searching for: "social work" AND "earthquake". Two were identified by searching for: "social work" AND "emergency". Two more were identified by searching for: "social work" AND "natural disaster". All 18 articles were written in relation to the Christchurch earthquakes that occurred on the September 4th 2010 and the February 22nd 2011. This is significant because other emergencies, such as the Mangatepopo Gorge tragedy (2008), the Carterton balloon crash (2012), the Pike River Mine disaster (2010), the Kaikoura earthquake (2016) and the Rena oil spill (2011), were also included in the search terms. However, relevant articles were not found. Media coverage might have been influenced by the magnitude of the event and number of people affected, where the Christchurch earthquakes (of 2010 and 2011) were the largest emergencies to impact New Zealand in the given time-frame, with the second quake associated with the loss of 185 lives. Five themes were generated from the latent analysis of relevant press coverage, as outlined below.

Social worker responses and increasing demand for services

A relationship between the ongoing needs of individuals and communities following the earthquakes, and social workers and their practice was noted in 10 of the 18 articles. All 18 articles signalled that social work was involved in some way, as part of the mid- to longer-term response and recovery efforts. Ongoing and often complex needs were linked to an increasing demand for social work services. These needs also highlighted the importance of advocacy for specific client groups with whom social workers have frequently been engaged.

Following the two major earthquakes, there was an identified need within the health sector to increase support for social workers in Christchurch. Social workers from Counties Manukau District Health Board had been sent to Christchurch in the "early weeks" after the 2011 earthquake, and then continued to work on rotation with the primary purpose being "to give relief for social work staff" (Kinealy, 2011, para. 6).

More than a year after the second earthquake, clinical social work specialist Suzanne Edmonds publicly advocated, via online media, for increased awareness of elder abuse in the community. She identified an increase in referrals for elder abuse since the earthquakes and called for a collaborative approach to address this abuse (Matthewson, 2012).

Another 2012 article profiled the increased demand for social work services from the Salvation Army, not only in Christchurch, but also in other regions to which people were relocating. Interestingly, the Salvation Army spokesperson noted that some of this demand for social work support was coming from middle income earners; a different demographic to clients supported prior to the earthquakes (Bayer, 2012).

At the end of 2012, Radio New Zealand reported that the needs of social service agencies, that had been working in very difficult and constrained environments, had been overlooked. Christchurch City Missioner, Michael Gorman, reported a considerable increase in demand for social work support as well as for other services such as foodbanks and counselling (RNZ, 2012).

Two years after the 2011 earthquake, on-going earthquake-related challenges were linked to needs for social work support (Turner, 2013). An increase in family violence post-earthquakes had led to a shortage of suitable short-term accommodation for male perpetrators. It was highlighted how social work support

was needed to address this increasing concern. Around this time, Wood (2013) highlighted how social work was one profession with a considerable increase in jobs within the Canterbury region. This trend in increased social work jobs appeared to continue in the short term. In 2014, Radio New Zealand highlighted that the Red Cross Earthquake Commission would be funding six more social work positions in Canterbury schools to assist students who continued to be affected by the earthquakes (RNZ, 2014).

In an article on regeneration, published in February 2016, Matthews interviewed the newly appointed Chair of Regenerate Christchurch, André Lovatt. Focusing on social, environmental and commercial outcomes, Lovatt emphasised that even after six years, "the social work needs in the city are huge" and that many of the children who experienced the quakes continued to have ongoing academic and developmental needs (Matthews, 2016, para. 30). Similarly, in two 2016 articles, a social work student and school principals respectively and clearly stated that challenges arising from the earthquakes were ongoing. One school had employed social workers due to rising student anxiety and an increase in children struggling with mental health issues (Murphy, 2016). The social work student reported a substantial need for long-term mental health funding for all age-groups (Campbell, 2016). This relates to the second theme identified through our analysis, funding.

Funding

Funding associated with social workers or social work service delivery was mentioned in four articles. The distribution of funding through the prime minister's earthquake fund was the focus of an article by Gates (2012). Almost one third of three-million-dollar grant was distributed to various social services. However, only one social service specified that the funds received would go towards increasing social work services, specifically home-based social work. The other named social services indicated client populations they would be seeking to support with the funding. However, they made no specific mention of social workers or social work practice.

Bayer (2012) reported on the annual Salvation Army annual appeal. This article indicated that the demand for social work services had significantly increased and that funding was therefore required to maintain similar levels of service delivery. RNZ (2014) outlined the allocation of funding from the Red Cross's Earthquake Commission

which included appointing six social workers to support high-need primary and intermediate school students. Interestingly, this same article indicated that 33 youth workers would also be employed to work in intermediate and secondary schools.

As mentioned above, five years after the 2011 Christchurch earthquake, the media spoke with a current social work student. This student advocated for long-term funding to meet the mental health needs of the community, which he described as "not really going away" (Campbell, 2016, para. 11).

Research and social work students

The theme of research and social work students was evident in four articles. Lynn (2016) reported on how a social work student had been engaged in an international study of how children make sense of their disaster experiences.

The findings from a research project by Aviva, formerly the Christchurch Women's Refuge, led to a decision to consider a range of options for increasing temporary accommodation for men who were required to leave their homes due to family violence. One of the options considered was short-term accommodation with associated social work support (Turner, 2013).

Two articles incorporated comments from social work students. Several student volunteers were interviewed about their volunteering experiences five years after the first earthquake. For one volunteer, the experience of assisting others had made her realise the importance of contributing to meeting community needs and these experiences reportedly influenced her decision to pursue postgraduate studies in social work (O'Callaghan, 2015). Another post-graduate social work student was interviewed as part of a media series focusing on the diverse lives of people in the Canterbury community. This student emphasised the ongoing challenges for many people living in the post-earthquake context (Campbell, 2016).

Perceptions of social workers and their practice

Respect for, and acknowledgement of, specific social workers or organisations was evident in three of the articles. In 2010, the appointment of Arihia Bennett (MNZM) to the Canterbury Earthquake Recovery Commission was announced while publicly acknowledging her "extensive experience in social work" (NZPA, 2010, para. 12). In 2012, the Christchurch Methodist Mission was presented with an award to

recognise their delivery of social work services following the earthquakes (Hargreaves, 2012). A more recent article expressed appreciation for the contribution of Christchurch City Missioner, Michael Gorman. With extensive experience as both a social worker and priest, the article highlighted his service to the community and efforts in leading the Mission's response to the Christchurch earthquakes (Fletcher, 2016).

The earliest reference to social work was published 20 weeks after the first Christchurch earthquake (McGregor, 2011) and had the only overtly negative comment about social work and social workers. This article stated that the manager of the Kaiapoi Earthquake Support Services "bristles at the terms such as 'case worker' and 'client', because they are too redolent of social work" (McGregor, 2011, para. 2). The article constituted a message that this manager did not want her team to be perceived as social workers, for fear that this would deter people from accessing support (McGregor, 2011).

Social workers as human beings

Three articles conveyed the message that social workers are not super-human but people who have lived experiences, who make mistakes, and who also need to be mindful of their own self-care (Fletcher, 2016). This was emphasised by an Allied Health director, who outlined that the primary purpose for sending additional social workers from Auckland to Christchurch was to reduce the workload for social work staff who were continuing to provide services "while living through the situation themselves" (Kinealy, 2011, para. 5).

Dr Kate van Heugten, a social work academic from Christchurch, further developed this theme when discussing her book: Social Work under Pressure, which focuses on social service worker burnout and fatigue in times of high stress and anxiety. She emphasised how people will initially survive a disaster on adrenaline, but that social workers and other social service workers must look after themselves in order to assist others (The Press, 2011).

Discussion

The results outlined above suggest that social workers and their emergency-related practice remain largely invisible in New Zealand's online media. This invisibility continues to limit the public's understanding of the profession's involvement in all four phases of emergency management (Stanfield & Beddoe, 2013). The focus of the majority of articles indicates that the media's

perception of, and interest in, social workers mainly relates to the longer-term recovery phase. This may explain why there were no articles concerning social work and the Kaikoura earthquake, which occurred at the end of the 2006 to 2016 sample time frame, in November 2016. While social work is valuable in long-term recovery efforts, it could nonetheless also contribute to planning and reduction phases, given its focus on smaller scale and large scale social issues (Briggs & Heisenfelt Roark, 2013).

As outlined by Hay et al. (2016), social workers are employed in a range of organisations. However, it is of note that social work in government organisations was not mentioned by any of the identified articles. This is surprising, given that the Ministry for Children Oranga Tamariki and district health boards are the largest employers of social workers in New Zealand; furthermore, given that these organisations have a significant role in welfare aspects of emergency management (Ministry of Civil Defence and Emergency Management, 2015). Media coverage of these organisations could therefore be reasonably expected. It is also noteworthy that social workers in iwi/Māori organisations were similarly invisible, despite being significant providers of social work services (Hollis-English, 2015).

The limited mention of social work in the media may reflect the wider public's understanding of social worker roles. Journalists, as members of the wider public, may also be unaware of the range of activity where social workers are engaged. Media coverage of social work practice has tended to focus on negative social work outcomes and while these stories may be more considered more newsworthy, they present the public with a one-sided and often poor view of how social workers can effectively work with people to improve their well-being (Chenoweth & McAuliffe, 2017; Stanfield & Beddoe, 2014). As outlined by Motion and Weaver (2005), positively profiling individual social workers and organisations prior to future emergencies may therefore help to increase both public confidence and the credibility of social work engagement and intervention.

Christchurch has over 580 registered social workers and is the location of New Zealand's social work professional body, the ANZASW. Consequently, there is a strong presence of social workers in the region. It could be expected that this would lead to greater media visibility. However, this strong presence now raises questions about both the visibility of this professional organisation and its media relationships because no press releases

or interviews with the Chief Executive or prominent members of the Association were identified in the current research. Through developing stronger relationships with journalists, the ANZASW could further increase public understanding of social work practice (Stanfield & Beddoe, 2013). This could also help to raise the profile and inclusion of the social work profession as an important part of emergency and disaster management.

Relationships between the social work profession and the emergency management sector, including the Ministry of Civil Defence and Emergency Management, also warrant further exploration. It is possible that people working in this sector have a limited understanding of the professional role played by social workers and how they can effectively contribute in all four phases of emergency management. In addition to further research in this area, awareness-raising activities could include brief presentations, resources such as flashcards, photos and information in existing toolboxes, such as the toolbox at www.civildefence.govt.nz/, provided by Auckland Council (2014).

Conclusion

Social workers have considerable and transferable capabilities. Their specialist practice skills enable them to advocate, support and empower change in people, families, whānau and communities. They are trained to work with diverse populations across the life-span. Situated in myriad organisations and in both rural and urban locations, they are well-positioned to play a significant role in all four phases of emergency management in New Zealand.

However, the current positioning of social workers in this field appears to be poorly understood and requires further research. Media coverage of how social workers have been involved in New Zealand emergencies has been minimal and has primarily focused on longer-term recovery.

In summary, a two-pronged approach to improve social work visibility and the value of social worker involvement in emergency management is required. Firstly, positive media profiling will assist with improving the public's perception of the social work profession and thus increase confidence in social work contributions to response and recovery phases (Chenoweth & McAuliffe, 2017; Stanfield & Beddoe, 2013). Secondly, by enhancing how the emergency management sector understands the, often heroic, capabilities of social

workers (Dominelli, 2010), and the broad scope of their practice (Hay et al., 2016), social workers may be utilised more effectively across all four phases of emergency management.

References

Adamson, C. (2014). A social work lens for a disaster-informed curriculum. *Advances in Social Work & Welfare Education, 16*, 7-22. http://hdl.handle.net/2292/25402

ANZASW. (2013). *Code of Ethics*. Christchurch, New Zealand: ANZASW.

Auckland Council (2014). *Natural hazard risk communication toolbox*. Auckland, New Zealand: Auckland Council. Retrieved from www.civildefence.govt.nz/assets/Uploads/NHRCToolbox/NHRCToolbox-Auckland-Council.pdf

Bayer, K. (2012, April 30). Canterbury welfare at full capacity. *New Zealand Herald*. Retrieved from www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10802434

Beddoe, L. (2014, April). *'Racism, 'bad mothers' and child abuse in news media: A role for social work advocacy.* Paper presented at the 4th European Conference for Social Work Research, Bolzano, Italy.

Bisman, C. (2004). Social work values: The moral core of the profession, *The British Journal of Social Work*, *34*, 109–123. doi: 10.1093/bjsw/bch008

Briggs, L., & Heisenfelt Roark, M. (2013). Personal reflections: What happens when disaster hits? *Aotearoa New Zealand Social Work, 25*, 98-104. https://anzswjournal.nz/anzsw/article/view/85

Campbell, G. (2016, May 25). Rubble and rebuild, our people-Joel Brittenden. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/79959831/Rubble-and-Rebuild-Our-People-Joel-Brittenden

Chenoweth, L., & McAuliffe, D. (2017). *The road to social work and human service practice* (5th ed.). Melbourne, Australia: Cengage.

Cooper, L., & Briggs, L. (2014). Do we need specific disaster management education for social work? *The Australian Journal of Emergency Management, 29*, 38-42. http://ro.uow.edu.au/cgi/viewcontent.cgi?article=2442&context=sspapers

Dominelli, L. (2010). *Social work in a globalizing world*. Cambridge, United Kingdom: Polity Press.

Drolet, J., Dominelli, L., Alston, M., Ersing, R., Mathbor, G., & Wu, H. (2015). Women rebuilding lives post-disaster: Innovative community practices for building resilience and promoting sustainable development. *Gender and Development, 23*, 433-448. doi: 10.1080/13552074.2015.1096040

Du Plooy, L., Harms, L., Muir, K., Martin, B., & Ingliss, S. (2014). "Black Saturday" and its aftermath: Reflecting on postdisaster social work interventions in an Australian trauma hospital. *Australian Social Work, 67*, 274-284. doi: 10.1080/0312407X.2013.862558

Fletcher, J. (2016, August 15). Christchurch City Missioner, Michael Gorman, to retire. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/83169455/christchurch-city-missioner-michael-gorman-to-retire

Gates, C. (2012, September 24). PM's appeal trust dishes out money. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/7720063/PMs-appeal-trust-dishes-out-money

Hargreaves, K. (2012, February 22). Our heroes: Earthquake awards. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/6459257/Our-heroes-Earthquake-awards

Hay, K., Dale, M., & Cooper, L. (2016). *Social work in Aotearoa New Zealand: Exploring fields of practice*. Auckland, New Zealand: Massey University Press.

Hollis-English, A. (2015). Theories in Maori social work: Indigenous approaches to working with and for indigenous people. *Aotearoa New Zealand Social Work, 27*, 5-15. https://anzswjournal.nz/anzsw/article/view/432

Huggard, P. (2011). Caring for the carers: The emotional effects of disasters on health care professionals. *Australasian Journal of Disaster and Trauma Studies, 2011,* 60-62. http://trauma.massey.ac.nz/issues/2011-2/AJDTS_2011-2_Huggard.pdf

Hunt, S., Sargisson, R. J., Hamerton, H., & Smith, K. (2014). Integrating research on the impact of volunteering following the Rena oil spill into the University of Waikato social work teaching curriculum. *Advances in Social Work & Welfare Education, 16*, 36-45. https://search.informit.com.au/fullText;dn=208248;res=AEIPT

IASSW, ICSW, & IFSW. (2012). *Global Agenda for Social Work and Social Development*. Retrieved from www.iassw-aiets.org

IASSW, & IFSW. (2014). *Global Definition of Social Work*. Retrieved from http://ifsw.org/get-involved/global-definition-of-social-work/

Johal, S., & Mounsey, Z. (2015). Finding positives after disaster: Insights from nurses following the 2010-2011 Canterbury, NZ earthquake sequence. *Australasian Emergency Nursing Journal*, *18*, 174-181. doi: 10.1016/j.aenj.2015.09.001

Johal, S., Mounsey, Z., Brannelly, P., & Johnston, D. (2016). Nurse perspectives on the practical, emotional and professional impacts of living and working in post-earthquake Canterbury, New Zealand. *Prehospital and Disaster Medicine, 31*, 2-7. doi: 10.1017/S1049123X15005439

Johal, S., Mounsey, Z., Tuohy, R., & Johnston, D. (2014). Coping with disaster: General practitioners' perspectives on the impact of the Canterbury earthquakes. *PLOS Current Disasters, Apr 2*. doi: 10.1371/currents.dis.cf4c8fa61b9f4535b878c48eca87ed5d

Kamerman, S. B. (2002). Fields of practice. In M. A. Mattaini, C. T. Lowery, & C. H. Meyer (Eds.), *Foundations of social work practice* (3rd ed.) (pp. 319-339). Washington, DC: NASW Press.

Keenan, D. (2000). Hine's Once Were Warriors hell: The reporting and racialising of child abuse. *Social Work Review, 12*, 5-8. https://anzasw.nz/aotearoa-new-zealand-social-work-review-te-komako-tu-mau/

Kinealy, M. (2011, June 6). Social Workers still helping out in Christchurch. *Manukau Courier.* Retrieved from www.stuff.co.nz/auckland/local-news/manukau-courier/5091252/classifieds

Lynn, A. (2016, January 18). Christchurch study gives insight into impacts on children. *National.* Retrieved from www.stuff.co.nz/national/education/75931944/christchurch-earthquake-study-gives-insight-into-impacts-on-children

McGregor, I. (2011, January 29). It's broken, so let's fix it. *The Press.* Retrieved from www.stuff.co.nz/the-press/christchurch-life/mainlander/4596399/Its-broken-so-lets-fix-it

Marlowe, J. (2014). A Social Justice Lens to Examine Refugee Populations Affected by Disasters. *Advances in Social Work & Welfare Education, 16*, 46-59. https://search.informit.com.au/documentSummary;dn=820978529776496;res=IELHSS

Matthews, P. (2016, February 6). Talk about regeneration. *The Press.* Retrieved from www.stuff.co.nz/the-press/christchurch-life/76476808/Talking-about-regeneration

Matthewson, N. (2012, October 2nd). More cases of elder abuse reported after the earthquakes. *The Press.* Retrieved from www.stuff.co.nz/national/christchurch-earthquake/7874541/More-cases-of-elder-abuse-reported-after-earthquakes

Ministry of Civil Defence and Emergency Management (2015). *Guideline to the National CDEM Plan.* Retrieved from www.civildefence.govt.nz/assets/guide-to-the-national-cdem-plan/Guide-to-the-National-CDEM-Plan-2015.pdf

Motion, J. & Weaver, C.K. (2005). The epistemic struggle for credibility: Rethinking media relations. *Journal of Communication Management, 9*, 246-255. doi: 10.1108/13632540510621579

Murphy, E. (2016, September 19). Christchurch principals subject to unrealistic expectations after earthquakes-report. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/84332781/christchurch-principals-subject-to-unrealistic-expectations-after-earthquakes--report

NZPA. (2010, October 1st). Govt. announces quake help for Cantabrians. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/canterbury-earthquake-2010/4188310/Govt-announces-quake-help-for-Cantabrians

O'Callaghan, J. (2015, September 4). Student Volunteers will never forget feeling of helping others. *The Press.* Retrieved from www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/71616037/Student-volunteers-will-never-forget-feeling-of-helping-others

Pack, M. (2014). Northern exposure: Integrating disaster management in a humanitarian and community studies program in the Northern Territory of Australia. *Advances in Social Work & Welfare Education, 16*, 73-85. https://search.informit.com.au/documentSummary;dn=821015795719012;res=IELHSS

Pease, B. (2014). Hegemonic masculinity and the gendering of men in disaster management: Implications for social work education. *Advances in Social Work & Welfare Education, 16*, 60-72. https://search.informit.com.au/documentSummary;dn=820997162747754;res=IELHSS

RNZ. (2012, December, 21). Social recovery given less attention than rebuild – report. *News.* Retrieved from www.radionz.co.nz/news/canterbury-earthquake/124011/social-recovery-given-less-attention-than-rebuild-report

RNZ. (2014, February 21). Extra support for Canterbury students. *News.* Retrieved from www.radionz.co.nz/news/national/236806/extra-support-for-canterbury-students

Rubin, A., & Babbie, E. R. (2016). *Essential research methods in social work* (4th ed.). Boston, MA: Cengage Learning.

Shevellar, L., & Westoby, P. (2014). "Perhaps?" and "Depends!" The possible implications of disaster related community development for social work. *Advances in Social Work & Welfare Education, 16*, 23-35. www.ncbi.nlm.nih.gov/pmc/articles/PMC5036576/pdf/nihms785882.pdf

Shuker, R. (2003). Content analysis. In C. Davidson & M. Tolich (Eds.), *Social science research in New Zealand* (2nd ed.) (pp. 347-361). Auckland, New Zealand: Pearson.

Spencer, L., Ritchie, J., Ormston, R., O'Connor, W., & Barnard, M. (2014). Analysis: Principles and processes. In J. Ritchie, J. Lewis, C. McNaughton Nicholls, & R. Ormston (Eds.), *Qualitative research practice* (pp. 269-293). London, United Kingdom: Sage Publications.

Stanfield, D., & Beddoe, L. (2013). Social work and the media: A collaborative challenge. *Aotearoa New Zealand Social Work, 25*, 41-51. https://anzswjournal.nz/anzsw/article/view/62

Social Workers Registration Board (2017). *Public register.* Retrieved from: http://swrb.govt.nz/

The Press. (2011, July 29). Overcoming stress, fatigue and burnout. *The Press.* Retrieved from http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/5356766/Overcoming-stress-fatigue-and-burnout

Tiong Tan, N., & Yuen, F. (2013). Social work, strengths perspective, and disaster management: Roles of social workers and models for intervention. *Journal of Social Work in Disability and Rehabilitation, 12*, 1-7. doi: 10.1080/1536710X.2013.784170

Turner, A. (2013, October 1). Women's refuge may find homes for men. *National.* Retrieved from http://www.stuff.co.nz/national/9227758/Womens-refuge-may-find-homes-for-men

van Heugten, K. (2001). Social workers who move from agency employment to private practice. Part I: A study of their motivations. *Social Work Review, 13*, 15-21. https://anzasw.nz/aotearoa-new-zealand-social-work-review-te-komako-tu-mau/

van Heugten, K. (2013). Supporting human service workers following the Canterbury earthquakes. *Aotearoa New Zealand Social Work, 25*, 35-44, doi:10.1177/0149206307309264

van Heugten, K. (2014). *Human Service Organizations in the Disaster Context.* New York, NY: Palgrave Macmillan.

Whelan, J. (1998). A social work perspective on the response to the Port Arthur crisis. *The Australian Journal of Emergency Management, 13,* 52-54. https://search.informit.com.au/documentSummary;dn=400720087092014;res=IELAPA

Winkworth, G., Healy, C., Woodward, M., & Camilleri, P. J. (2009). Community capacity building: Learning from the 2003 Canberra bushfires. *The Australian Journal of Emergency Management, 24*, 5-12. http://ro.uow.edu.au/sspapers/2085/

Wood, A. (2013, May 8th). Recovery brings 15,000 new jobs to Canterbury. *The Press.* Retrieved from www.stuff.co.nz/the-press/business/the rebuild/8644573/Recovery-brings-15-000-new-jobs-to-Canterbury

Older adults' strategies for managing adversity through connection and purpose

Nicki Weld [1]

[1] Faculty of Education and Social Work, University of Auckland New Zealand.

Author correspondence:
Nicki Weld
Faculty of Education and Social Work
University of Auckland
Auckland
New Zealand
+64 9 373 7599
Email: n.weld@auckland.ac.nz

Abstract

Events such as disasters elicit a range of coping strategies and provide the opportunity to identify what does and does not help people in adverse situations. The voice of older adults has been less evident in relevant discussions, with older adults often seen as the recipients of services during and following adverse events rather than as a source of knowledge. The current article was developed from a qualitative study using a grounded theory design that explored the concept of courage with 20 adults aged over 70 years who experienced the Canterbury Earthquake sequence from 2010 and 2011 in New Zealand. It focused on their responses to a specific question on ways to manage adversity. Their responses emphasised themes of social connection, keeping things normal, being brave and calm, having a purpose or role, and positive thinking. This article discusses their ideas in relation to existing literature and highlights the importance of valuing how the wisdom of older adults can contribute to emergency management.

Keywords: *Post-disaster, Canterbury Earthquakes, Older adults, adversity, coping, resilience*

The current article describes ways to manage adversity, from the perspective of older adults who experienced the Canterbury Earthquake sequence. This sequence, namely the September 4th 2010 7.1 magnitude earthquake and the February 22nd 2011 6.3 magnitude earthquake, along with many aftershocks, had far-reaching effects for the Canterbury region and also for other regions of New Zealand.

There have been several studies exploring the impacts of the Canterbury earthquake sequence on older adults, who are generally defined as those aged over 65 years old. Annear, Wilkinson and Keeling (2013) researched the immediate psychological challenges of the Canterbury earthquakes with 97 respondents. They noted that 55 percent of respondents did not experience any major psycho-social challenges following the earthquakes, with the rest of the respondents reporting varying degrees of psychological problems such as insomnia, depression, anxiety, irritability, loss of motivation, and problems adapting to challenges. Annear (2013) advocated for pro-active follow-up after a disaster or extreme event for those with an identified vulnerability such as social isolation or a pre-existing mental health condition. They also advocated for ongoing awareness of how health impacts could appear over the longer-term.

In examining possible long term effects of the Canterbury earthquakes, Keeling and Stevenson (2006) found that some impacts persisted for up to three years. These impacts included emotional and economic issues such as financial hardship and housing difficulties which remained stressful and difficult to face. Emotional loneliness was the exception and was found to have reduced in the short term following the earthquakes, suggesting an increase in social support, especially for older adults living on their own in the community (Keeling & Stevenson, 2006). Other difficulties experienced by older adults in this post-disaster context were influenced by a number factors at the individual level, including: reduced mobility; chronic health conditions requiring adequate heating, cooling, hydration and medications; cognitive issues with memory; sight, hearing and other sensory problems; and greater dependence on public transport and other services (Davey & Neale, 2013).

Along with individual factors, social and environmental issues also contribute to the outcomes experienced following a disaster. Regarding the impacts of a flood in New Zealand on older adults, Tuohy and Stephens (2011) noted social conditions that reduced people's ability to cope and recover. These conditions may

include neighbourhoods that lacked strong infrastructure prior to the disaster event; an issue seen in New Orleans following Hurricane Katrina in 2005 (Fussell, Sastry & VanLandingham, 2010). The importance of environmental and social conditions was also observed by Annear (2013) who noted that age was not "the sole predictor of resilience or vulnerability, with a variety of personal and circumstantial factors also contributing to how older adults are affected by a natural disaster" (p.65).

While much is known about the vulnerabilities that older adults may experience in disasters or other adverse situations (Ehrenreich, 2001; Fawcett, 2009), there has been less discussion of the skills and resources that older adults can offer. A documentary on the Canterbury earthquakes called When a City Falls, by Swadel, Smyth and Shannon (2011), demonstrated these skills and resources. In this film, a rest home manager shared the story of how, after the February 22nd 2011 earthquake, she and the other staff moved the residents down to the basement and set up mattresses between them so that personnel could comfort any of the residents who were distressed. Instead, she said it was the residents who comforted and supported the staff throughout the night. This highlights the relevance of literature by Davey and Neale (2013) which states that "Older adults are as diverse in their earthquake response as any age group, reminding everyone to look beyond the headlines and stereotypes" (p. 39).

In a shift from solely focusing on difficulties experienced by older adults, Annear (2013) noted that older adults are often more "psychologically prepared, resilient and adaptable" than younger people, likely based on prior life experiences (p. 52). He also stated that they may be at greater risk for physical injury or death, impacted by loss of lifestyle activities, and less able to recover financially. The same article concludes that, within an older adult population, there are likely to be both examples of "significant resilience and vulnerability" following a natural disaster (Annear, 2013, p. 52).

Resilience is a concept often discussed in post disaster situations as a way of managing ongoing adversity. Traditionally described as series of traits, literature on resiliency has broadened to describe resiliency as more of an adaptive process. Bonanno (2012), for example, reinforces this point by noting that resilience is not always a personality trait, instead defining it as "a stable trajectory of healthy functioning in response to a clearly defined event" (p. 753). Resilience can be viewed as "a

dynamic process, one encompassing positive adaptation by individuals who are experiencing significant adversity" (Luthar, Cichetti & Becker, 2000, p. 543). Luthar et al. (2000) therefore suggested that research on resilience "must accelerate from a focus on description to a focus on elucidating developmental processes" (p. 555).

Over the last two decades, the concept of resilience has been applied to different disaster contexts. While researching the bombing of the World Trade Centre in New York in 2001, Flynn (2008) developed a theory of community resilience. He identified four external factors that help communities cope after a disaster. These included: ensuring there is robustness in buildings and infrastructure, "resourcefulness, so skilfully managing a disaster once it unfolds", "rapid recovery so the capacity to get things back to normal as soon as possible", and "having the means to absorb the new lessons that can be drawn from a catastrophe" (Flynn, 2008, pp. 6-7). He also stated that communities need inspiring and less dramatic media portrayals, like stories of doing well despite the circumstances; rather than ongoing footage of devastation and destruction.

There is also an emerging field of resilience within the field of gerontology. Wild, Wilke and Allen (2013) explored the value of resilience within gerontology and acknowledged the move from resilience as a set of traits to one of a process of adaption to a negative life event or situation. They suggested that the ageing process offers several challenges, especially around the different types of loss that can occur. They also acknowledged the interdependence of different types of resilience, including the resilience of an individual, and also surrounding resilience at the levels of family, community, and wider society (Wild et al., 2013).

However, within resilience literature, there is now caution against labelling someone as *resilient*. This could inadvertently leave someone without help if they are seen to be resilient, or create a sense of blame or failure if they are not (Wild et al., 2013). In a similar vein, Adamson, Beddoe and Davys (2014) advise against labelling someone as essentially resilient, suggesting instead that people can show "resilient adaptation" to adversity or difficulty (p. 523).

In terms of older adults managing adversity, the benefits of prior experiences and practical behavioural and cognitive coping methods have also been documented. In their study of a South Eastern Kentucky area exposed to flooding, Norris and Murrell (1988) included prior

experience as a moderator of disaster impacts on older adults. They noted that, because of this, older adults could provide a useful resource in emergency management by helping others to prepare for a disaster event and also to manage in the aftermath. However, Norris and Murrell (1988) also cautioned that "prior experience in older adults may generally provide inoculation against recurring, but nonetheless acute stressors, but may not protect them from exhaustion and breakdown after extended or constant stress" (p. 681).

While studying older adults' responses to Hurricane Katrina, Henderson, Roberto and Kamo (2010) identified a number of coping techniques that older adults used to help manage what had occurred, including: modifying their thinking, staying busy, spirituality, and adopting positive attitudes. There are various definitions of coping including "the maintenance of homeostasis" and "cognitive and behavioural efforts in light of appraised stress" (Spurrel & McFarlane, 1993, p. 198). Utilising the Folkman and Lazarus (1988) Stress Appraisal and Coping framework, Spurrel & McFarlane (1993) identified the difference between problem focused strategies and emotion focused strategies. Following an appraisal of the situation, problem focused strategies are often utilised when "the problem is seen as solvable", while emotion focused strategies are used when the "problem is seen as not solvable" (Spurrel & McFarlane, 1993, p. 199).

This distinction was further explored by Adamson, Beddoe, and Davys (2014) who noted that emotion focused coping may be more beneficial when faced with an adverse event that is not easily changeable, such as a disaster or serious health diagnosis. They suggested that "primarily managing feelings of emotional distress may be more useful in the context of supporting resilience than coping that emphasises problem solving which focuses on the source of the stress" (Adamson et al. 2014 p. 527). This point was made with reference to a range of coping strategies included in the Coping Strategies Inventory, by Tobin (2001), including by: changing "the stressor, cognitive restructuring of the activity, re-examining a stressor from a different perspective, actively seeking social support, and expressing negative emotions" (Adamson et al., 2014, p. 526).

In their discussion of past, present and future points of adjustment to adverse life events, Frazier et al. (2011) suggested that "most stressful events are not objectively controllable in the sense that they are not desired or intended" (p. 750). By differentiating between managing a stressful event and managing one's emotional reaction to the event, Frazier et al. (2011) also outlined a process of adaptive coping that includes adjustment and acceptance. They made the point that variance in individual perception will determine the distress caused by an event. Frazier et al. (2011) also noted that trying to control adverse events that are beyond someone's control, such as many disasters, can cause distress and lead to hyper-vigilant and anxious behaviour.

Adversities faced in a range of events, and in life in general, create the need for support from others. This can form a kind of psychological intervention, as highlighted by Hobfoll et al. (2007), who described five key principles for intervention following a traumatic event: "1. Promote sense of safety, 2. Promote calming, 3. Promote self and collective efficacy, 4. Promote connectedness, and 5. Promote hope" (pp. 285 -286). These principles have since been reiterated as part of psychological first aid, as outlined by Bisson & Lewis (2009).

The research outlined in the remainder of the current article aimed to contribute to the existing body of knowledge on courage, and to give voice to older adults helping others to face adversities in a post-disaster situation. Given the length of life experience the participants had, data collection focused on participants' strengths, to elicit their thoughts and wisdom on supporting others. As outlined below, this and other aspects of this qualitative research were designed to validate each participant's existing coping methods and wisdom. Key themes were then identified, as outlined in the Results section. The current article will conclude with a discussion of these key themes and relevant implications.

Methods

Courage appears to have been an elusive concept to describe, without one agreed definition. Research into the concept of courage has only been more strongly evident in the past two or so decades. For example, Finfgeld's (1995) study into exploring the concept of courage amongst the chronically ill elderly, provides a significant example of applying grounded theory to understanding courage from the perspective of an older population group. Given the limited research on courage and lack of agreed definition, an inductive approach utilising a grounded theory design was elected. According to research methodologies outlined

by Patton (2002), this could contribute more to the existing body of knowledge on courage rather than testing an existing theory or hypothesis. The current research was therefore based on constructivist ontology and interpretivist epistemology, using a qualitative methodology and grounded theory methods from Grix (2002), Gray (2004), Charmaz (2014), and Charmaz and Bryant (2011).

Data collection included semi-structured interviews with three focus groups, as well as seven key informant interviews. The population of interest were adults over the age of 70 years who had experienced the Canterbury earthquake sequence and who identified as having coped with its impacts. As an older group, this population was likely to have more life experience and to be in a reflective phase of human development, of looking back at their life in retrospect (Butler, 1963, 2016). The participants were retired from, or still active in, a range of backgrounds that included nursing, farming, social work, and religious ministry. They were recruited through formal and informal means, such as advertising and snowball recruitment where one participant recommended another. Fourteen women and six men were interviewed, with the oldest participants being 95 years of age and the youngest being 70 years of age. Four couples were interviewed, among participants that were all either married, widowed, or separated.

Key ethical considerations concerned the prevention of re-traumatisation through discussing traumatic subject matter, and the management of researcher bias. To mitigate re-traumatisation, interviews focused less on direct experiences of the earthquakes or other adverse events and more on the concept of courage. In addition, invitations to participate were directed to people who felt they had managed the earthquakes rather than those who had become highly distressed. Focus groups were deliberately constituted by people who already knew each other, providing a naturally supportive environment with existing rapport and trust. A list of support services was made available for the key informants interviewed, and care was taken to ensure the interviews were positive and validating of each participant's skills and knowledge. Data analysis was kept as transparent as possible, with oversight from third parties, in an effort to consider research bias. Ethics approval for this study was granted by the University of Auckland Human Participants Ethics Committee on the 21st of February, 2014.

Detailed data coding was undertaken through each stage of data collection. This included an iterative process occurring during data collection from key informant interviews, where information shared by participants was further explored in the subsequent interview. Saturation occurred on the final two key informant interviews, in terms of repeated information and the confirmation of existing categories (Suddaby, 2006) and finally, no new codes emerging. This also aligned with Charmaz (2014) who stated that "Categories are 'saturated' when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical categories" (p. 213).

After completing key informant interviews, further analysis provided four key conceptual categories and several themes. These four conceptual categories and related themes were discussed with colleagues alongside the consideration of existing literature, in an effort to generate new theory. This approach did not aim to produce a concrete, incontestable explanation of courage, but rather to generate additional knowledge concerning the concept of courage from the perspective of older adults living in a post-disaster environment.

Results and Discussion

Life can include a range of situations that make the foundation of people's lives feel less than stable. It is therefore important to recall that many other events, besides disasters, can cause adversity. Participants in the current study described other adverse events, including: serious health issues for a loved one, being posted overseas for work, loss of an adult child, collapse of a long-term marriage, experiences of war, and an assault by a stranger. Indicators of adversity included: feelings of uncertainty, change, loss of control, being on your own, and not knowing what is happening.

A specific question asked participants for their views on how to manage adversity. This question elicited a richness and depth of responses that deserved further attention. The participants' responses indicated two ways of managing adversity, firstly what the person could do to help themselves, and secondly, what people could do to help each other. Participants then provided the examples outlined in Table 1.

Social Connection

A number of key themes were identified from the participants' accounts. The first of these was the value of *social connection*. Participants described the value

Table 1.
Strategies to Manage Adversity

What the person can do:	What we can do to help:
Get in touch with other people, remain social	Be calm, gentle, use comforting touch
Do normal day to day tasks	Befriend people and be reassuring
Have tasks to do or a role or purpose	Offer help and go with them if needed
Ask for help	Be encouraging
Trust in others	Be brave around them, keep it together for their sake. – display courage
Stop and think it through, one step at a time.	Provide reassurance and company for them
Take back control	Help connect people with professional supports
Have ways in place to be ready and prepared	Soften the anxiety
Take a deep breath	Be kind but not too much sympathy
Live in the moment	Let them know others have come through it
Stay positive	Talk about other things as well
Access faith or spirituality	Treat them normally
Think about someone who is strong and what they would do	Provide practical support
Talk about it, share the problem	

of getting in touch with other people, and remaining engaged in social interactions. They reported that loneliness and isolation worsened distress, while it helped to talk to someone, share the problem, and get professional advice. They also suggested befriending, reassuring, being kind, offering help, going with a person to an appointment, and being encouraging. This comment from one of the key informant interviews summarises the importance of social connection through being alongside someone, providing caring and listening, and helping the person to prepare and plan.

> [If] there something is happening that is pretty tough then you just stay with them, you are with them, you don't try to solve it, you don't do anything, but you are just there. You just care for them or maybe you hold them, it depends whether it is a sudden thing or what we are talking about something and that way you can make some plans, and I think sometimes you don't even need to make plans because things come if you ask for them or they just come from people's conversations or whatever.
>
> (Sue)

The importance of social ties and interpersonal support to manage adversity, among older adults affected by the Canterbury earthquakes, was previously identified by Alpass, Keeling, Stevenson, Allen and Stephens (2016). They noted that links to family, friends and communities both regionally and nationally help mitigate impacts and recommended that future disaster preparedness needs to consider all levels of support from "local to regional to national for maximum effectiveness" (Alpass et al., 2016, p. 123).

In the Canterbury earthquake sequence, Keeling and Stevenson (2006) found that emotional loneliness reduced in the short term following the earthquakes, through social support provided to older adults living on their own in the community. Their study provides a useful reminder of the benefits that increased social connection and support can offer. It is important that social support is not just provided initially because actual losses and impacts often become more apparent after the adverse event. Interpersonal support can reduce feelings of social isolation and hopelessness, by reinforcing connection, collaboration, and support in an adverse situation.

Research with middle-aged adults managing chronic health challenges, by Finfgeld (1999), highlighted both intrapersonal and interpersonal means of support. Intrapersonal factors included remaining strong for others (often linked to one's values), self-confidence, hope, and self-belief that the adversity could be managed (Finfgeld, 1999). Interpersonal supports for bolstering courage in particular included gestures of support, acts of kindness, a willingness to listen, encouraging a sense of belonging and hope, and being socially engaged in distracting and supportive activities (Finfgeld, 1999).

One participant outlined the idea of being kind but without too much sympathy, as an integral part of social connection. This idea concerns two different ways of supporting others. Kindness was interpreted as the recognition and understanding of something that might
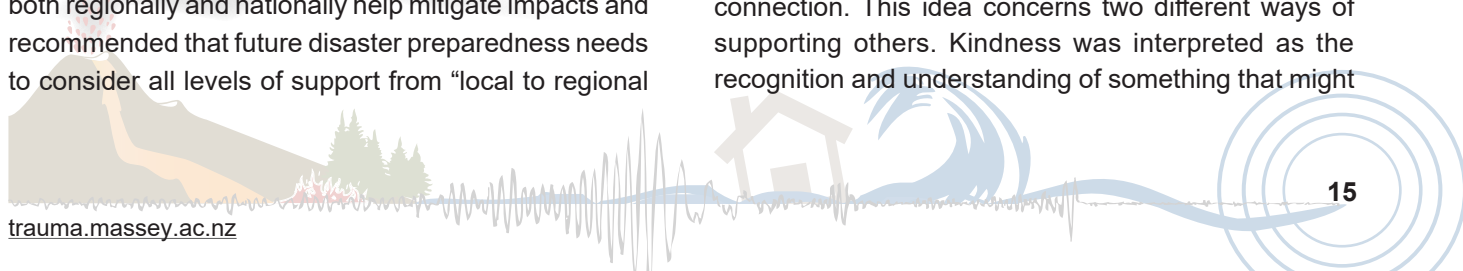
be difficult and conveying this understanding. The idea of not too much sympathy appeared to involve acknowledging when someone may choose to be emotional and when they may not, and respecting the difference. This relates to findings from Finfgeld (1999) who stated that being able to access one's own internal strengths, while also being open to support from others and knowing how to provide this, all help people face difficulty. Exploring other difficult times that the person feels they have coped with and the ways that they did this can constitute both interpersonal and intrapersonal support.

Keeping Things Normal

Participants also described the importance of *keeping things normal* in an adverse situation, constituting another main theme for the current analysis. They suggested that engaging in normal activities was reassuring and even comforting to others, as illustrated by this comment by one focus group participant:

> The woman across the road came over to me and when the power did come on we had no water, but the power came on. She said "Are you baking? And I said, "Yes it's for the grandchildren" and she said, "Fancy you baking in the middle of all this!" [Laughter] and she said, "I feel better now", you know, as if I was doing a normal thing.
>
> (Jill)

When people are experiencing adversity, helping them connect to aspects of their world that have not changed may provide a sense of control or anchoring. One key informant, Jim, talked about supporting friends who had cancer and how when he visited them he would "Talk about the old days and everyday things" rather than just their illness. He noted that this helped improve their mood and felt it reminded someone that they were more than the illness or disease. Reassuring people of what has not changed may assist them to be better able to face what has changed. Being able to focus attention on present controllable aspects of a stressful situation helps people maintain or regain a sense of overall control, especially when faced with events they can't control from the past or in the future (Frazier et al., 2011). As with the concept of being kind without too much sympathy, this approach can help people to develop plans based on what they still have and can still do, supporting self-efficacy.

Psychological first aid reflects similar ideas regarding a balance between intrapersonal and interpersonal support. This approach is often put into place after a disaster, high stressor, or emergency and provides an interpersonal framework to assist another person immediately after a traumatic event. It has been described as a "humane and supportive response" for someone experiencing distress, towards meeting their psycho-social needs (Bisson & Lewis, 2009, p.3). Psychological first aid offers reassurance, normalisation, comfort, listening, supportive advice, immediate physical care, and compassion and encourages participation in everyday, normal activities, while linking people to natural supports and their own internal strengths (Bisson & Lewis, 2009).

Being Brave and Calm

A key idea within psychological first aid is the belief that people are resilient and that they can recover. Care is taken to not pathologise normal responses and distress in relation to traumatic events. Instead, people are supported to connect to their existing intrapersonal and interpersonal supports. Psychological first aid assumes an understanding of resilience as an adaptive process that includes adjustment to a difficult event, with care taken to realise that this is not a fixed personally attribute, but rather something that people have access to. The principles within psychological first aid provide an intentional focus when offering support to someone after a disaster or traumatic event. This and similar interventions appear to be facilitated by the interpersonal skills highlighted by Finfgeld (1999) and by the current participants. For the current participants, these skills included *being brave and calm* where the participants noted how this helps others and also oneself. The following conversation from one of the focus groups highlights how being able to be brave and calm for others helped participants and others cope with their emotional responses to the adverse event.

> I keep thinking of courage and calmness I don't know why I connect the two but I do…I think if you can be calm around other people like June who was in a terrible state it helps them to get more courage and relax…Well I spent my time keeping someone very calm and I felt quite calm, June, she was in a bad way and because I was keeping her calm it made me calm.
>
> (Kit)

> Yes, I am actually getting back to that again and I was just thinking too about my little granddaughter because I took her into the café you know have a little nibble and there was an earthquake there. So that

was kind of calm, I had to appear very calm because I didn't want to frighten her, she's only about four at the time. I can remember that sitting there very quietly and calmly you know and having a little chat about something totally different.

(Elizabeth)

Yes well I was at my art group and we were standing there and all of a sudden everything went and I held this 90 year old, dear old Maude, 92 I think she was, "You hold onto me Maude I won't let you fall", and now when I think about it if she had fallen and I fell on her I would have squashed the life out of her! [Laughter]. One hand on the table and the other one around Maude.

(Belinda)

Within these examples, the ability to firstly recognise someone else's possible distress and vulnerability highlights the importance of both empathy and compassion. Participants were then able to put their own possible fears and panic to one side and step into role of supporting the other person. This in turn helped them stay calm, creating a feedback effect. Providing calming is also a part of psychological first aid, to help people resolve distress and move into problem solving (Bisson & Lewis, 2009).

Being brave can also reinforce one's own coping skills and resiliency. Finfgeld's grounded theory study of courage in the chronically ill elderly (1995) includes the following exchange between participant and interviewer:

"You don't expect somebody else to make you feel better?" to which the respondent says, "Not at all." The interviewer then says, "You rely on yourself to do that?" to which the respondent says "Exactly. I don't want somebody else to take the pleasure out of being brave."

(Finfgeld, 1995, p. 8)

This exchange highlights the risk in emergency management, of only treating older adults as service recipients or as needing to be taken care of. This has the potential to deny them the opportunity to be brave or to access their own strengths. Davey and Neale (2013) commented that "Stereotyping older people as vulnerable leads to under-valuing their potential contribution" and that this could reduce the opportunity for older adults to access their own resilience (p. 8). Exploring how older adults could contribute to emergency management after a disaster would provide

opportunities to utilise their skills and knowledge and also to enhance their own resiliency.

Acknowledging diversity in the older adult population group could avoid assuming that all older adults need extra support in a natural disaster or adverse situation, while still recognising those that do. The second benefit is just as important. Tuohy and Stephens (2011) noted how the positive ageing movements of promoting independence and self-reliance could inadvertently contribute to people being more isolated and not feeling able to ask for help, creating an unintentional reduction in support (Tuohy & Stephens, 2011). These authors recognised the importance of respecting the independence of older adults while not reducing support for those who require it. A focus on supporting dignity and utilising existing strengths and skills appears to provide a helpful middle ground.

When talking with older adults in New Zealand about their preparedness for a disaster, Tuohy and Stephens (2016) also found that the discussion went beyond disaster preparation, into ongoing preparations for ageing. The adults in their 2016 study discussed being prepared for everyday situations such as trying to mitigate the risk of falling and adapting to issues such as reduced mobility. The motivations of holding onto autonomy, independence, and being self-reliant led their respondents to frequently adapt to the challenges that ageing was presenting them with. Older adults also appeared to be more likely to access existing resilience due to concerns about being a burden to others. This may lead them to directly think through how to manage situations posing a challenge or risk (Tuohy & Stephens, 2016). This kind of ongoing reflective and adaptive process is possibly a less recognised skill set that older adults are more likely to utilise and provide to others in adverse situations.

Having a Purpose and Role

Another key theme identified from participant accounts emphasised *having a purpose and role*. This might include helping other people to have a practical task to do as a distraction from what has happened or is happening. Shifting the focus from possible fear to practical tasks assisted people not to be as frightened and gave them a sense that they could carry on despite what had happened. The participants commented that having a task, role or purpose helped to provide focus. This is evident in this conversation from one of the focus groups:

We stayed longer than a week, we stayed, and he had the kids home, so to keep them from freaking out he had them picking up all the books and all the ornaments and all the bits and put them in newspaper and he was bolting the bookcases to the wall. And he had them occupied. He had been in the army. He said keep them moving, keep them doing something, don't let them think about it. They were quite amazing when they did it.

(Helen)

Yes, the first thing he did he dug a long drop.

(Tom)

Yeah, we had no toilets, no nothing.

(Helen)

Put a screen round it and it was all pretty professional!

(Tom)

The importance of having a purpose, focus or task was also acknowledged by Smith et al. (2017), in their article exploring post traumatic growth following the Christchurch earthquake sequence. They noted that having a course of action gave people "purpose and a sense of efficacy", resulting in less worry, while helping people to see themselves as "functional and coping" (Smith et al, 2017, p. 39). Being able to contribute and remain connected to others also helped with "post-traumatic growth such as a sense of increased personal strengths and a greater sense of community" (Smith et.al, 2017, p. 39). This is another important reminder that older adults also have the opportunity for roles and finding purpose in post disaster situations, rather than only being seen as service recipients.

It is likely that having a role and purpose also mitigates anxiety, an idea expressed by one of the current participants, and returns a sense of control and hope to many. Assisting people to take step by step actions helped people who were feeling overwhelmed by their traumatic experiences. This approach supported self-efficacy, an important objective of psychological first aid, and provided encouragement so that people felt better able to progress with their lives. It also helped people to prepare and plan, supporting them to have clear actions and steps that they could take. Having a task to do also appeared to create a diversion, as highlighted by Finfgeld (1999), giving people the opportunity to focus on something other than their adverse circumstances.

When examining the role and purpose of professionals supporting someone with adversity, Finfgeld (1995, 1999) highlighted on the need to provide a sense of caring, realistic optimism, with a gentle use of humour to reduce tension, while answering questions openly, honesty, and in a way that affirms a person's self-worth (Finfgeld, 1999). Being able to determine firstly if the stressor is changeable, and therefore appropriate for problem focused coping, can help professionals select whether problem focused or emotion focused approaches will help older adults coping with an adverse event (Spurrel & McFarlane, 1993). In the event that problems are outside of older adult's control, the professional's role therefore becomes about how to support older adults to emotionally adapt, perhaps utilising emotional focused ways of coping, to help them face current and forthcoming changes.

Positive Thinking

The idea of *positive thinking* evident in participants' accounts links well to the benefits of using emotion focused coping in situations that are not easily changeable. Participants noted the importance of observing what was still good and stable and noting the opportunities that upcoming challenges might offer. These more optimistic approaches may help people to draw on prior learning and experiences to find opportunities within an adverse context. At a social level, this could include talking with someone else in order to see the situation in a different way or even, as suggested by the current participants, from a more positive perspective.

The participants also suggested another way to think differently about an adverse event. This was to identify people who are, or had been, strong in an older adult's life. Reflecting on what these people would have done or would do in a current situation helped build confidence and courage to face current adversities. This approach appeared to provide encouragement to keep going and also ideas on how to face what was happening, which in turn supported accessing participants' own personal resilience.

Conclusion

Participants' responses to questions about managing adversity confirm many conclusions from existing literature, especially literature concerning psychological first aid, emotion focused and problem solving coping, and interpersonal support. Tangible accounts and ideas shared by participants can serve to remind professionals working in emergency situations of the importance of

interpersonal connection and relationships. Eliciting social connections, keeping things normal, and being brave and calm, appear to have reduced participants' feelings of being alone and overwhelmed, while helping them share strategies and other ideas. This sharing appears to give older adults a sense of hope that their circumstances can improve. The importance of having a purpose or task was another key theme identified in the current research, and highlights how problem solving helped regain control over a situation where older adults were feeling helpless or not in control. This can help older adults find a way to move forward and reconnect them to their own existing strengths and resilience. The use of positive thinking highlights a form of emotion focused coping through changing perspectives and looking for opportunities rather than threats.

The participants' ideas on how to manage adversity in this study show how emergency management may be enhanced by actively promoting the knowledge and skills possessed by older adults. Further exploration of the roles that older adults could take in post disaster situations could be extremely beneficial while helping mitigate the risk of older adults simply being seen as service recipients. Older adult's life experiences and their ongoing attempts to adapt and meet the challenges of ageing offer wisdom and skills that could benefit disaster-affected populations in general. Promoting relevant roles would have an additional benefit, of providing older adults with the sense of purpose and social connection which appears to be very important to them.

References

Adamson, C., Beddoe, L., & Davys, A. (2014). Building resilient practitioners: Definitions and practitioner understandings. *The British Journal of Social Work, 44*, 522-541. doi: 10.1093/bjsw/bcs142

Annear, M., Wilkinson, T., & Keeling, S. (2013). Psychological challenges among older adults following the Christchurch earthquakes. J*ournal of Disaster Research, 8*, 508-511. doi: 10.20965/jdr.2013.p0508

Annear, M. J. (2013). *Urban environmental pathways to active ageing: A participatory investigation amidst natural disasters* (Doctoral dissertation). Retrieved from http://hdl.handle.net/10523/3931

Alpass, F., Keeling, S., Stevenson, B., Allen, J., & Stephens, C. (2016). Ripples of recovery and resilience: Tracking the effects of the Canterbury earthquakes on older New Zealanders. *Australasian J*ournal of Disaster and Trauma *Studies, 20*, 117-124. www.massey.ac.nz/~trauma/issues/2016-2/AJDTS_20-2_Alpass.pdf

Arvay, M. J. (2003). Doing reflexivity: A collaborative narrative approach. In L. Finlay, & B. Gough (Eds.), *Reflexivity: A practical guide for researchers in health and social science.* (1st ed.) (pp. 163-175). Hoboken, NJ: Blackwell Science.

Bisson, J.I., & Lewis, C. (2009). *Systematic review of Psychological First Aid*. Retrieved from www.researchgate.net/publication/265069490_Systematic_Review_of_Psychological_First_Aid

Bonanno, G. A. (2012). Uses and abuses of the resilience construct: Loss, trauma, and health related adversities. *Social Science and Medicine, 74*, 753-756. doi: 10.1016/j.socscimed.2011.11.022

Butler, R. N. (1963, 2016). The life review: An interpretation of reminiscence in the aged. *Psychiatry, 26*, 65-76. doi: 10.1080/00332747.1963.11023339

Charmaz, K. (2006). *Constructing grounded theory, a practical guide through qualitative analysis*. London, United Kingdom: Sage.

Charmaz, K. (2014). *Constructing grounded theory.* London, United Kingdom: Sage.

Charmaz, K., & Bryant, A. (2011). Grounded theory and credibility. In D. Silverman (Ed.), *Qualitative research* (3rd ed.) (pp. 291-309). London, United Kingdom: Sage.

Davey, J., & Neale, J. (2013). *Earthquake preparedness in an ageing society: Learning from the experience of the Canterbury earthquakes*. Wellington, New Zealand: The Earthquake Commission.

Ehrenreich, J. (2001). *Coping with disasters: A guidebook for psychological intervention*. Retrieved from www.toolkitsportdevelopment.org/html/resources/7B/7BB3B250-3EB8-44C6-AA8E-CC6592C53550/CopingWithDisaster.pdf

Fawcett, B. (2009). Vulnerability - questioning the certainties in social work and health. I*nternational Social Work, 52*, 473-484. doi: 10.1177/0020872809104251

Finfgeld, D. L. (1995). Becoming and being courageous in the chronically ill elderly. *Issues in Mental Health Nursing, 16*, 1-11. doi: 10.3109/01612849509042959

Finfgeld, D. L. (1999). Courage as a process of pushing beyond the struggle. *Qualitative Health Research, 9*, 803-814. doi: 10.1177/104973299129122298

Flynn, S. (2008). America the resilient: Defying terrorism and mitigating natural disasters. *Foreign Affairs, 87*, 2-8. http://opim.wharton.upenn.edu/risk/library/J2008Foreign_Affairs_Flynn.pdf

Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology, 54*, 466-475. https://pdfs.semanticscholar.org/f562/7f2f96185281d232d26ab61494ab51efe970.pdf

Frazier, P., Keenan, N., Anders, S., Perera, S., Shallcross, S., & Hintz, S. (2011). Perceived past, present, and future control and adjustment to stressful life events. *Journal of Personality and Social Psychology, 100*, 749-765. doi: 10.1037/a0022405

Fussell, E., Sastry, N., & VanLandingham, M. (2010). Race, socioeconomic status, and return migration to New Orleans after Hurricane Katrina. *Population & Environment, 31*, 20-42. doi: 10.1007/s11111-009-0092-2

Gray, D. E. (2004). *Doing research in the real world*. London: Sage.

Grix, J. (2002). Introducing students to the generic terminology of social research. Politics. *Political Studies Association, 22*, 175-186. doi: 10.1111/1467-9256.00173

Henderson, T. L., Roberto, K. A., & Kamo, Y. (2010). Older adults' responses to Hurricane Katrina: Daily hassles and coping strategies. J*ournal of Applied Gerontology, 29*, 48-69. doi: 10.1177/0733464809334287

Hobfoll, S. E., Watson, P., Bell, C.C., Bryant, R.A., Brymer, M. J., Friedman, M. J., & Ursano, R.J. (2007). Five essential elements of immediate and mid–term mass trauma intervention: Empirical evidence. *Psychiatry: Interpersonal and Biological Processes, 70*, 283-315. doi: 10.1521/psyc.2007.70.4.283

Kaul RE, W. V. (2005). Disaster mental health: A discussion of best practices as applied after the Pentagon attack. In A. R. Roberts (Ed.), *Crisis intervention handbook* (3rd ed.) (pp. 200-220). New York, NY: Oxford University Press.

Keeling, S., & Stevenson, B. (2015). *Tracking the health and wellbeing of older New Zealanders affected by the Canterbury earthquakes*. Palmerston North, New Zealand: Massey University.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 543–562. doi: 10.1111/1467-8624.00164

Medina, M. (2008). Everyday courage: Living courageously without being a hero. *Existential Analysis, 19*, 280. http://existentialanalysis.org.uk/vol-19-2-2008-sold-out-pdf-available/

Norris, F. H., & Murrell, S. A. (1988). Prior experience as a moderator of disaster impact on anxiety symptoms in older adults. *American Journal of Community Psychology, 16,* 665-683. doi: 10.1007/BF00930020

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Los Angeles, California: Sage.

Pury, C., & Kowalski, R. (2007). Human strengths, courageous actions, and general and personal courage. *The Journal of Positive Psychology: Dedicated to Furthering Research and Promoting Good Practice, 2*, 120-128. doi: 10.1080/17439760701228813

Suddaby, R. (2006). From the Editors: What grounded theory is not. *Academy of Management Journal, 49*, 633-642. doi: 10.5465/amj.2006.22083020

Smith, R., McIntosh, V., Carter, J., Colhoun, H., Jordan, J., Carter, F., & Bell, C. (2017). In some strange way, trouble is good for people. Posttraumatic growth following the Canterbury earthquake sequence. *Australasian Journal of Disaster and Trauma Studies, 21*, 31-42. www.massey.ac.nz/~trauma/issues/2017-1/AJDTS_21_1_Smith.pdf

Swadel, P. (Producer), Smyth, G., & Shannon, A. (Directors). (2011). *When a city falls – The people's story* [Motion picture]. New Zealand: Journeyman Pictures.

Spurrell, M. T., & McFarlane, A. C. (1993). Post-traumatic stress disorder and coping after a natural disaster. *Social Psychiatry and Psychiatric Epidemiology, 28*, 194-200. doi: 10.1007/BF00797323

Tobin, D.L. (2001). *User manual for the Coping Strategies Inventory*. Retrieved from www.peersupport.edu.au/wp-content/uploads/2014/08/Coping-Strategy-Indicator-Guide.pdf

Tuohy, R., & Stephens, C. (2011). Exploring older adults' personal and social vulnerability in a disaster. *International Journal of Emergency Management, 8*, 60-73. doi: 10.1504/IJEM.2011.040399

Tuohy, R., & Stephens, C. (2016). Older adults' meanings of preparedness: A New Zealand perspective. *Ageing and Society, 36*, 613-630. doi: 10.1017/S0144686X14001408

Wild, K., Wiles, J., & Allen, R. (2013). Resilience: Thoughts on the value of the concept for critical gerontology. *Ageing and Society, 33*, 137-158. doi:10.1017/S0144686X11001073

Practice update:
Building a data integration and visualisation platform for resilience research in New Zealand

Joanne R. Stevenson [1]
Elora Kay [1]
John Vargo [1]

[1] Resilient Organisations Ltd.

Author correspondence:
Resilient Organisations
Unit 2, 188 Durham Street South
Christchurch 8011
New Zealand
Email: joanne.stevenson@resorgs.org.nz

Abstract

This article summarises the process and progress toward developing the New Zealand Resilience Data Integration and Visualisation En Masse Platform, otherwise referred to as DIVE. The DIVE Platform is a prototype for online data cataloguing, sharing, and collaboration. It is being developed to enable integrated and engaged research that will enhance New Zealand's resilience to hazards. The development of this platform is intended to interface with, and supplement, other efforts to integrate data sharing across New Zealand and beyond. Development of a beta prototype for the DIVE Platform has been completed, allowing users to upload relevant metadata into the system through a data entry form. The prototype features the ability to effectively categorise data. It allows for user friendly data searching and the creation of virtual organisations to facilitate collaborative research. Testing of the beta prototype is currently underway, meaning that end users are already interacting with the web-based DIVE prototype. This stage allows them to provide valuable feedback and showcase examples of resilience research emerging within New Zealand. The beta version also enables users to contribute to the ongoing development of the DIVE Platform itself. The current paper concludes with a discussion of challenges surrounding the development of DIVE, alongside plans for the future development of this platform.

Keywords: *Resilience, data integration platform, metadata*

New Zealand is exposed to a wide range of natural hazards, in no small part because the country straddles the boundary between two tectonic plates with its attendant risk of earthquakes and volcanic eruptions. The New Zealand Government has committed across several platforms (for example: The Resilience to Nature's Challenges National Science Challenge; the New Zealand Centre for Earthquake Resilience, or QuakeCoRE; the Ministry of Civil Defence and Emergency Management's National Resilience Strategy; the Sendai Framework for Disaster Risk Reduction) to building the resilience of its people, places, and economy to ensure safety, stability, and prosperity in the face of significant exposure to disruption. Understanding the current state of the nation's resilience and achieving systemic improvements requires cross-institutional and transdisciplinary collaboration and research innovation. These aspects of systematic improvement, however, present challenges to the status quo of data sharing and management (Medyckyj-Scott et al., 2016). Information inefficiencies and gaps hinder the progress of those tackling the most complex and important issues in disaster risk reduction (DRR) and resilience building. Meaningful progress toward positive DRR outcomes requires collaboration across institutions and disciplines, and requires effective information management. This means creating spaces where data can be captured, safely shared, and managed to ensure quality, appropriate use, and ongoing development.

The Data Integration and Visualisation En Masse (DIVE) Platform aims to create such a space. This Platform is a research and development programme designed to examine how information could be managed to enhance the impact of the research emerging from QuakeCoRE and the Resilience to Nature's Challenges (RNC) - National Science Challenge. DIVE was developed between 2016 and 2018 through a series of consultations and iterative development phases. We have released several tools associated with DIVE on a web-based platform. The web-based DIVE Platform includes: a metadata[1] catalogue and data repository, capacity to search and access resilience data, and

---

1   Data about data, including keywords, data collection dates and other information.

a series of data literacy resources to upskill the user community. The current paper provides an overview of the DIVE Platform's development, it's current web-based offerings, and the platform's future. We also draw on the experiences of others working in similar areas, to frame how we will promote uptake and guide future developments of the DIVE Platform.

Background

In 2011, the New Zealand government approved a set of principles, asserting that the data and information it holds should be open, readily available, well managed, reasonably priced, and re-usable unless there is a reasonable expectation of information protection (Internal Affairs Te Tari Taiwhenua, 2011). This is underscored by the Open Government Data Programme which champions an *open by default* cross-government data ecosystem. Policy recommendations from the Ministry of Business Innovation and Employment (MBIE) extend this ethos to publicly-funded science data, with the intention of managing and sharing information for better collaborations, more efficient and powerful science, and greater connectedness to end-users (Ministry of Research Science and Technology, 2010). New Zealand has also become a signatory to the Sendai Framework for Disaster Risk Reduction, which promotes "real time access to reliable data, the use of space and in situ information, including geographic information systems (GIS), and use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data," (UNSIDR, 2015, p.14).

There are several ongoing projects designed to enhance the visibility and usability of data across New Zealand. For example, significant effort and resources have been invested across Government to construct the Integrated Data Infrastructure (IDI) (Statistics New Zealand, 2017a) and the Longitudinal Business Database microdata repositories (Statistics New Zealand, 2017b). Additionally, DigitalNZ (The National Library of New Zealand, 2018) and data.govt.nz (2018) are data cataloguing and search platforms designed to make New Zealand community and Government data easier to find.

There have also been numerous information management portals specifically designed in New Zealand and abroad, for hazards data. The New Zealand Geotechnical Database (NZGD, 2018) and the post-earthquake data clearinghouse system hosted by The Earthquake Engineering Research Institute (EERI) are largely driven by the earthquake engineering community in private industry, academia, and crown research institutes. The EERI established the Kaikoura Earthquake Virtual Clearinghouse website for those wishing to publish information relevant to the public and international researchers (Kaikoura, NZ Earthquake Clearinghouse, 2018). EERI data clearinghouses are geared towards initial data capture after an earthquake and are not updated with recovery data.

The Canterbury Earthquake Digital Archive (CEISMIC) mainly catalogues documentary resources, with an emphasis on images, news media, video and audio files, and cultural heritage collections associated with the 2010/2011 Canterbury earthquake sequence. Other aggregation portals for hazards data in New Zealand include NIWA's Historic Weather Events Catalogue, GeoNet's Geohazards applications and data, and portals for data captured by the public, such as GeoNet's Felt Reports and NIWA's community air quality observation network (GeoNet, 2018; NIWA, 2018a, 2018b). Internationally, programmes like the AGORA project, DataONE, and the Sahana Foundation provide interdisciplinary research and information networks to enhance environmental and community outcomes in the face of disruption (AGORA, 2018; DataONE, 2018; Sahana Foundation, 2018).

Despite these efforts, New Zealand does not yet have a unified space where researchers and research stakeholders can share and locate the information they are collecting across multiple hazards, in a way that is curated and archived. As a result, in 2016, the NZ Centre for Earthquake Resilience (QuakeCoRE) and the Resilience to Nature's Challenges (RNC) – National Science Challenge, funded a small team of researchers to investigate how to best enable teams of researchers to access and share data and information to enhance resilience outcomes for New Zealand.

Procedures

The DIVE research team used a design-thinking approach to scope and design the first prototype. Design thinking is a solution-focused process which incorporates the in-depth insights of end-users into iterative prototype development (Brown & Wyatt, 2010). Proponents of design thinking refer to this process as a system of overlapping spaces, as opposed to sequential steps. Brown and Wyatt (2010) identify several spaces in the design thinking process: *Inspiration,* "the problem

or opportunity that motivates the search for solutions" (p. 33); *Ideation*, "the process of generating, developing, and testing ideas" (p. 33); and *implementation,* "the path that leads from the project stage into people's lives" (p. 33). Each of these spaces were explored in the development of the DIVE Platform.

Inspiration

Between March and November 2016, the team initiated a consultation process involving workshops, surveys, interviews, and software prototype design and testing. The inspiration phase begins with a 'brief', a general framework of constraints and goals of the design process and benchmarks against which progress can be measured. For DIVE, the brief was to: Create data management systems that enable teams of researchers to address complex social problems that make New Zealand more resilient to hazards and disasters. The standard against which this system was benchmarked is whether it is useful, usable, and used. These principles were loosely defined in the early phase of the project and can be guided by a series of questions based on an evolving understanding of the system, as shown in Table 1.

Table 1.
Principles for Evaluating the Success of DIVE

Criteria	Description
Useful	Is the data up-to-date? Is the quality of the data being managed? Can others understand and use the data that is being uploaded?
Useable	Is data searchable and accessible for a wide range of users? For example, can it facilitate 'citizen science' or council data collection efforts if that is what the users need?
Used	Are communities of practice being established and self-sustaining?

Once the brief is set, the inspiration phase explores the needs of stakeholders through direct consultation and observation. The initial stakeholder group was comprised of QuakeCoRE and RNC researchers and representatives from several key data providing organisations, such as government ministries, local councils, and the Earthquake Commission. We began this phase with a series of workshops and an assessment of the way stakeholders were interacting with other data management systems. These procedures were supplemented by an online survey and several informal interviews with subject matter experts to gather more in-depth information about user-needs and processes that may be useful. Detailed results of this data collection

and subsequent analysis are summarised in Stevenson, Vargo, & Brown (2016) and Stevenson et al. (2017).

Ideation

The ideation phase involves synthesizing and translating outcomes of the inspiration phase into visions and choices that can guide the design of a system (Brown & Wyatt, 2010). We developed a series of operational use cases, which are user journeys that describe a flow of operations for interacting with a system, and that can be used to identify the functions, operating systems, boundaries, and constraints that are relevant to potential users (Summers, 2012). The operational use cases focused on important data-related challenges facing QuakeCoRE and RNC researchers. More details concerning these use cases can be found in Stevenson, Vargo, Thomson, and Walsh (2017). In a second stakeholder workshop in mid-2016, we presented the synthesized findings and use cases to collaboratively examine workflow and problem-solving processes. We also received and incorporated additional feedback from participants at this stage.

Implementation

The subsequent, implementation, phase involved developing a pre-alpha prototype[2] of the DIVE software system. In a third workshop the DIVE Platform development team demonstrated the DIVE prototype's current features and facilitated discussion about how such a system could be used to address key issues in resilience research. Approximately 65 stakeholders and subject matter experts contributed to this initial DIVE development process. In addition to informing the design of the DIVE Platform, the workshops were also a helpful starting point for forming relationships that will be central to the successful implementation of a transdisciplinary and cross-institutional collaborative platform.

In December 2017, the DIVE programme received additional funding from QuakeCoRE to develop the beta prototype[3]. The ensuing project's objectives were to:

1) Develop metadata entry and data sharing processes
2) Develop a prototype web-based metadata interface and data catalogue
3) Continue producing educational content for the metadata and geospatial data literacy programme to increase DIVE platform uptake

---

2   Pre-alpha refers to all software development activities before formal testing.
3   A *beta* prototype is a product that is closer to completion compared to an alpha prototype and is often tested by product end users.

We are hosting the DIVE platform on the Comprehensive Knowledge Archive Network (CKAN), which is an open source data platform. CKAN makes it possible for DIVE users to process register their user information, upload and share their metadata (with an optional upload data function), search metadata, and categorize data and users to better enable collaborations.

The focus was on delivering a minimum viable product that would allow users to catalogue metadata for all resilience-related material and share critical unique datasets. For example, a dataset of heritage churches of the Anglican diocese in New Zealand was entered into the beta prototype. This dataset contains information including the location, year built, construction type, proneness to earthquake damage, notes about vulnerabilities and other useful and vital data. Datasets such as these are often unavailable in the public domain but may enable innovative research in disaster risk reduction and resilience. The front-end layout of DIVE was also updated from the pre-alpha to beta stages, creating an interface that was much more visually engaging (see Figure 1).

The use of metadata has allowed researchers to share information about past and current research endeavours even if they cannot share datasets themselves. The current beta prototype contains a comprehensive data entry form, allowing users to enter high quality metadata, improving the ability for others to interpret and build on past and current resilience research. The *organisations* feature has allowed users to see and search all of the datasets from a particular organisation in one place. Additionally, it has allowed members of that organisation to categorise their data by selecting their respective organisation during the data entry process. Users are now also able to create their own groups and compile pre-existing DIVE datasets into one readily accessible folder. This feature has the potential to facilitate collaboration through the cataloguing of datasets for a project, team, or data-related theme. The development of this minimum viable product has led to a beta version that is now ready to be delivered to QuakeCoRE and RNC researchers for testing. CKAN's ability to link to other CKAN based platforms has also allowed the DIVE team to enable searches across more than one platform.
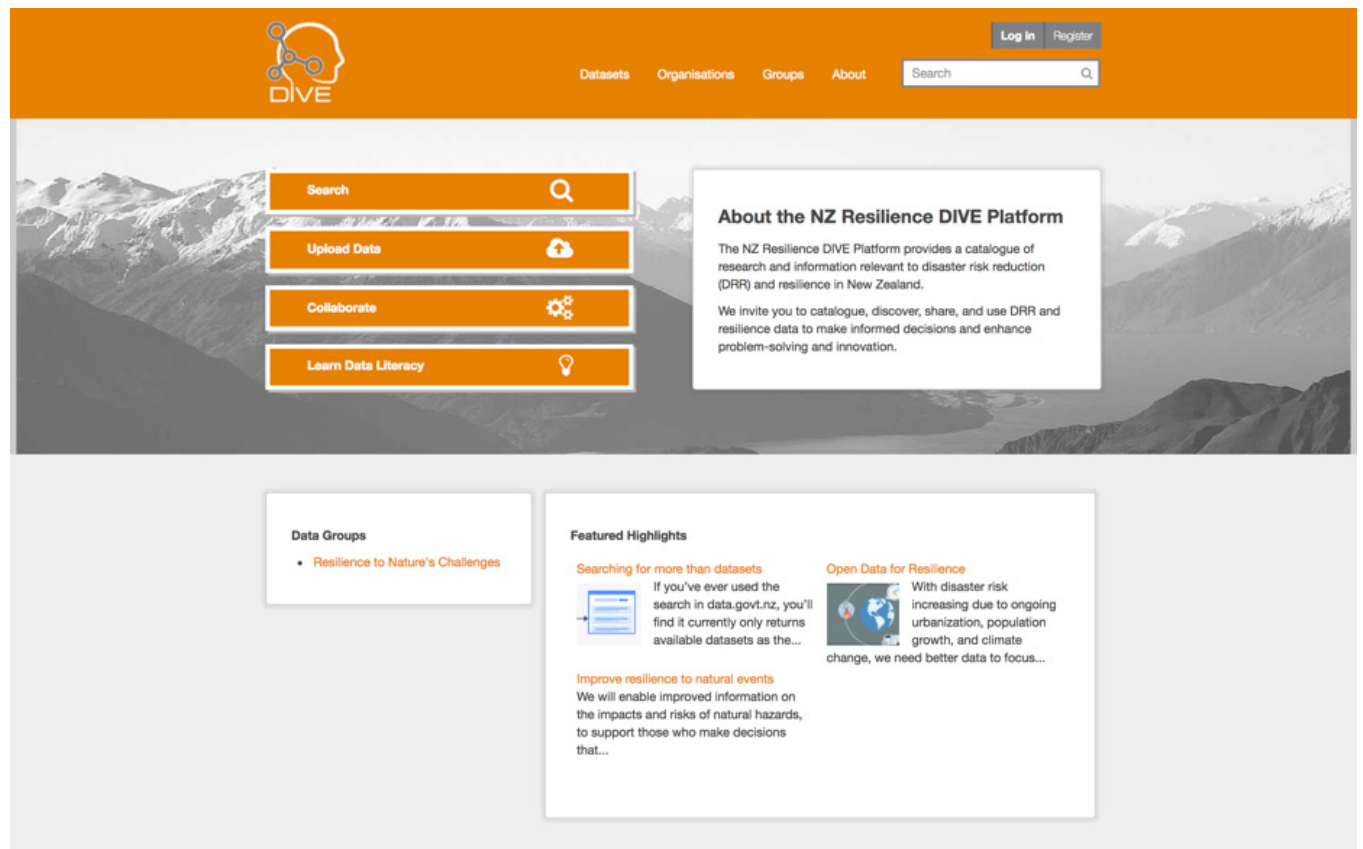

Figure 1. The DIVE homepage (beta version), showing the visual style of the beta prototype.

For example, data.govt.nz is one other platform that also uses CKAN, and which may now be included in multi-platform, or federated, searches.

Ideation: Beta testing phase

During the beta testing phase, researchers from within QuakeCoRE and the RNC will be encouraged to enter their data into DIVE using a step by step guide and assistance from the researchers. This phase will allow us to elicit feedback from users regarding the ease of data entry, and will allow us to showcase some of the exciting and important work being undertaken within New Zealand. If possible, the DIVE prototype will be further refined based on user feedback. Current funding constraints may mean that further software development may not be viable.

DIVE is currently available in a live production environment and is accessible to anyone through the website www.resiliencedata.org.nz. The feedback gained from the beta testing phase of the production environment will help us develop future use cases which can be used to justify ongoing funding for continued DIVE development. We also stress to our testing users that no effort will be lost, even if future development funding is not secured. DIVE has deliberately been created in a CKAN platform to ensure that the metadata catalogue can be transferred to another host such as data.govt.nz in the eventuality that the original DIVE Platform is decommissioned.

Observations, Conclusions & Recommendations

The outcomes of a system intended to enable better resilience research are likely to be enhanced by a problem-focus, rather than being divided by funding or disciplinary boundaries. A problem-focused system will enhance the visibility of the work going on to improve the resilience of New Zealand. It will be a place where communities of researchers, decision makers, data holders, private industry, and citizen scientists can view, upload, and download data. Such a system should facilitate the creative collision of secondary and primary research data, local narratives, real-time hazard monitoring, *Mātauranga Māori* indigenous knowledge, and multi-media information.

There are, of course, challenges to promoting and maintaining a system like DIVE. There has been extensive research on the factors that influence technology acceptance among end-user populations,

including the system's perceived usefulness, perceived ease of use (Schweik et al., 2005), social influences (Venkatesh et al. 2003), the way the project is communicated to potential users, and their belief in the system (Seymour et al., 2007). DIVE uptake management will draw on lessons from previous work such as research by Prasanna and Huggins (2016), whose work on information system adoption in emergency operations centres found that there were several factors mediating and moderating technology adoption. They found, for example, that performance expectancy significantly impacted information system acceptance. As a result, they recommend providing clear guidance for system implementation and investing in efforts that will boost performance expectancy (Prasanna & Huggins, 2016).

Although many researchers within the RNC, QuakeCoRE, and other research programmes have indicated that a system like DIVE is needed, one anticipated challenge is that potential users may not believe they have time to input their data into the platform. This is a common issue faced by metadata collection initiatives (Schweik et al., 2005; Jones & Vines, 2016). To capture good quality metadata, multiple available input fields should be populated within the data entry form. This will allow future users to fully understand each dataset in line with Dublin Core standards. Dublin Core is a well-established, set of internationally recognised metadata standards that recommends fifteen general properties for resource descriptions that are broad enough for almost any type of resource (Dublin Core Metadata Initiative, 2012). It is possible that the length of the data entry form may deter some researchers, many of whom may already be experiencing time pressure in their current projects. For DIVE, this has meant making only the most essential metadata items mandatory. Users are given the option of adding additional detail.

The development of the beta prototype of the DIVE Platform was funded by QuakeCoRE. Our current development budget has been fully allocated, and useful features that could be developed in the future cannot be enabled until additional funding is available. We propose the continued funding and development of DIVE, towards an interactive online space for researchers and practitioners to share information relevant to their ongoing research and the information gathered from disaster events as they unfold. Capturing this data in a federated portal that is curated, properly archived, and strategically shared will facilitate future research, aid

response and recovery actions and decision making, and may become a resilience building tool when broader communities are able to contribute data on the hazards they are experiencing or relevant trends that they are seeing unfold in their communities.

Acknowledgements

References

AGORA Project. (2018). *A geospatial open collaborative architecture for building resilience against disasters and extreme events*. Retrieved from www.agora.icmc.usp.br/site/agora/.

Brown, T., & Wyatt, J. (2007). Design thinking for social innovation. *Stanford Social Innovation Review*, *12*, 29–43. doi: 10.1596/1020-797X_12_1_29

Data.govt.nz. (2018). *Discovery and use data*. Retrieved from https://data.govt.nz/.

DataONE. (2018) Retrieved from www.dataone.org/data-life-cycle%209

Dublin Core Metadata Initiative. (2012). *Dublin Core Metadata Element Set, version 1.1: Reference description*. Retrieved from http://dublincore.org/documents/dces/

GeoNet. (2018). *GeoNet: Geological hazard information for New Zealand*. Retrieved from www.geonet.org.nz/

Internal Affairs Te Tari Taiwhenua. (2011). *New Zealand Data and Information Management Principles*. Retrieved from www.ict.govt.nz/guidance-and-resources/open-government/new-zealand-data-and-information-management-principles/.

Jones, M., & Vines, R. (2016). Cultivating capability: The socio-technical challenges of knowledge management. *Records Management Journal*, *26*, 242–258. doi: 10.1108/RMJ-11-2015-0035

Kaikoura, New Zealand Earthquake Clearinghouse. (2018). Retrieved from www.eqclearinghouse.org/2016-11-13-kaikoura/.

Medyckyj-Scott, D., Stock, K., Gibb, R., Gahegan, M., Dzierzon, H., Schmidt, J., & Collins, A. (2016). *Our Land and Water National Science Challenge: A data ecosystem for land and water data to achieve the challenge mission*. Wellington, New Zealand: Landcare Research.

Ministry of Research Science and Technology. (2010). *Environmental Data Management Policy Statement (Report SW230201)*. Retrieved from www.mbie.govt.nz/publications-research/publications/science-and-innovation/MBIE_Environmental-Data-Management-Policy-Statement.pdf/view?searchterm=environmental%20data

The National Library of New Zealand. (2018). *DigitalNZ A-Tihi O Aotearoa*. Retrieved from https://digitalnz.org/.

NIWA. (2018a). *Community observation networks for air*. Retrieved from https://www.niwa.co.nz/atmosphere/research-projects/CommunityObservationNetworksforAir

NIWA. (2018b). *NZ Historic Weather Events Catalogue*. Retrieved from https://hwe.niwa.co.nz/

NZGD. (2018). *New Zealand Geotechnical Database*. Retrieved from www.nzgd.org.nz/Registration/Login.asp

Prasanna, R., & Huggins, T.J. (2016). Factors affecting the acceptance of information systems supporting emergency operations centres. *Computers in Human Behavior, 57*, 169-181. doi: 10.1016/j.chb.2015.12.013

Sahana Foundation. (2018). *Sahana Foundation open source disaster management software*. Retrieved from https://sahanafoundation.org/

Schweik, C. M., Stepanov, A., & Grove, J. M. (2005). The open research system: a web-based metadata and data repository for collaborative research. *Computers and Electronics in Agriculture*, *47*, 221–242. doi: 10.1016/j.compag.2004.12.006

Seymour, L., Makanya, W., & Berrange, S. (2007). End-users' acceptance of enterprise resource planning systems: An investigation of antecedents. In *Proceedings of the 6th annual ISOnEworld conference* (p. 26). Las Vegas, NV: ISOnEworld Conference.

Statistics New Zealand. (2017a). *Longitudinal business database (1 January 2017)*. Retrieved from www.stats.govt.nz/integrated-data/longitudinal-business-database/.

Statistics New Zealand. (2017b). *Integrated data infrastructure (16 November 2017)*. Retrieved from www.stats.govt.nz/integrated-data/integrated-data-infrastructure/

Stevenson, J. R., Vargo, J., & Brown, C. (2016). *Data integration and visualisation: Prototyping the QuakeCoRE Data Platform for diverse needs*. Retrieved from https://wiki.canterbury.ac.nz/pages/viewpage.action?pageId=52692301

Stevenson, J.R., Vargo, J., Thomson, C., & Walsh, L. J. (2017). *Resilience & data in New Zealand: The Data Integration and Visualisation En Masse (DIVE) platform 2016 summary*. Retrieved from https://wiki.canterbury.ac.nz/pages/viewpage.action?pageId=52692301.

Summers, B. L. (2012). *Effective methods for software and systems integration*. Boca Raton, FL: CRC Press.

UNISDR. (2015). *Sendai Framework for Disaster Risk Reduction 2015– 2030*. Retrieved from www.unisdr.org/we/coordinate/sendai-framework.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *Management Information Systems Quarterly*, *27*, 425-478. doi: 10.2307/30036540

Instructions for Authors

This journal has been established to provide a resource for the Australasian region (New Zealand, Australia and the Pacific), and as such we prioritise and seek contributions from Australasia. We will occasionally consider contributions from other parts of the globe but only if the articles cover issues directly relevant to an Australasian readership.

MANUSCRIPT FORMAT:
Well written English manuscripts of NOT MORE THAN 5000 words will be considered for publication.

The format and style of the article, including referencing, must follow current American Psychological Association (APA style) conventions.

Authors are requested to supply an abstract of no more than 300 words when submitting an article. The abstract should be a condensed, accurate representation of the rationale, methodology, significant results, conclusions and recommendations contained within the article.

Authors should also provide 4 - 5 keywords that clearly describe the subject matter of the article. Other options for manuscript formats are provided at http://trauma.massey.ac.nz/info/submissions.html.

TABLES, FIGURES AND GRAPHICS:
Each table and figure should possess a brief title and a concise description of its content and should be included in full at the end of a manuscript.

Care should be taken to ensure that tables and figures will be viewable within the limitations of web browsers. Tables and figure numbers and titles should also be inserted into the manuscript text at an appropriate position.

Other pictures or other graphics required for the article should be attached as separate files.

Web compatible GIF, PNG or JPG image formats are preferred.

OTHER DETAILS:
Contributions should be original and not published or submitted for publication in any other journal, electronic or otherwise.

One corresponding author should be designated. Their email address should appear on the manuscript cover page.

As an electronic journal, article reprints will not be provided in the traditional sense. Authors wishing to distribute published copies of their article may do so with the proviso that they clearly acknowledge the source of the publication.

Papers should be submitted, in Microsoft Word format, to the editor via email: **ajdts@massey.ac.nz.**

Peer Review Process

On receipt of an article, the editor will assess its appropriateness for inclusion in the Journal. If the content of the article as appropriate and in an acceptable format, the editor will send the article for review. A final decision on acceptance will be made after the submission has been reviewed.

Acceptance or rejection of a contribution will be based on the "blind" peer review of a submission by at least two members of either the Editorial Board or by others invited to review the article due to their particular expertise. The editors will make a decision to accept, seek revision, or reject a contribution based on the reviewers' comments and recommendations. Contributors will receive a copy of the reviewers' comments at the same time as they receive a response from the editor. Copies of reviews and the editors' decision will also be sent to each reviewer. It is anticipated that the review process should take from 4 to 6 weeks.

The Editor will assume that the paper is an original contribution. Papers appearing in the journal should not be published elsewhere without the written consent of the Publisher of the journal. A copyright declaration will be required of all papers accepted for publication.

Contact Details

WORLD WIDE WEB SITE
Australasian Journal of Disaster and Trauma Studies
http://trauma.massey.ac.nz/

EDITOR
Professor David Johnston
Email: D.M.Johnston@massey.ac.nz
Telephone: +64 (04) 801 5799 ext. 63672

MANAGING EDITOR
Thomas Huggins
Email: ajdts@massey.ac.nz

POSTAL ADDRESS
Joint Centre for Disaster Research
Massey University
P.O. Box 756
Wellington 6140
New Zealand