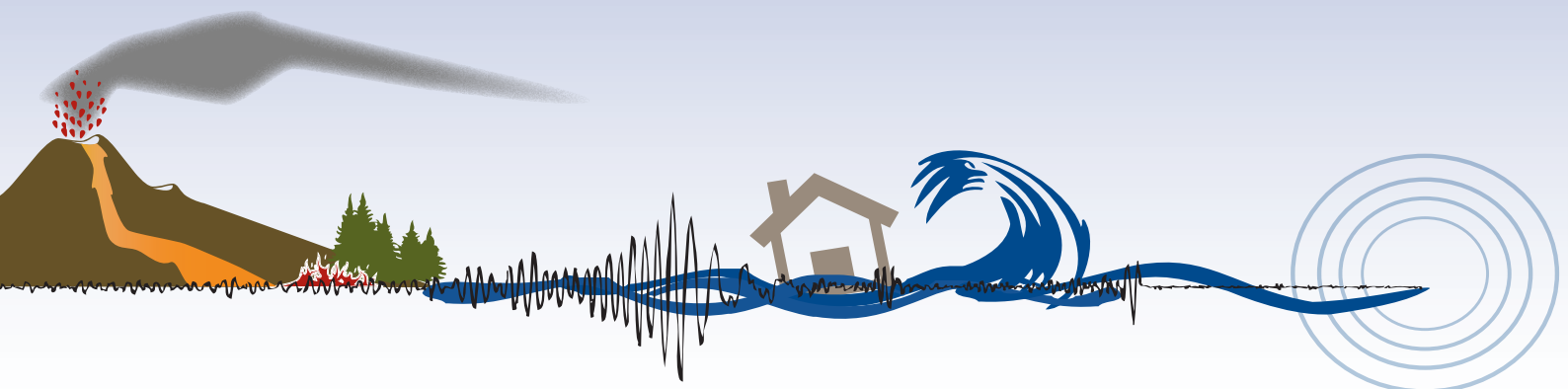




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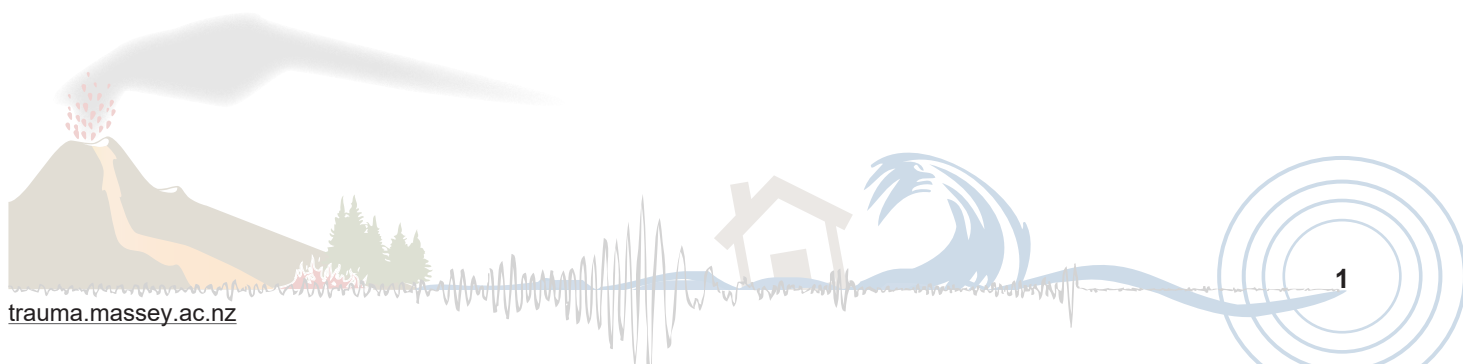
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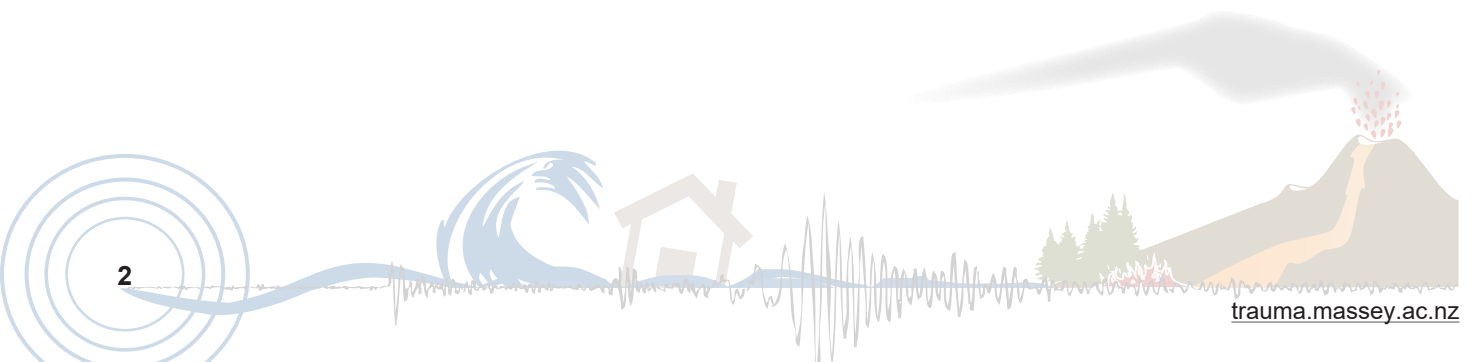
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Non-specific psychological distress following the Christchurch earthquake: 10 years later - How are they doing now?

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Abstract

Christchurch, Aotearoa New Zealand, had two major earthquakes in 2010 and 2011, with thousands of aftershocks relatively close to each other. Disasters affect peoples' lives in many ways resulting in changes to family and social relationships, employment, education, and other roles in life. Often these impacts are hidden while people struggle to cope with the immediate task of survival and surface later, after the initial reactions have subsided. This study uses in-depth interviews conducted between 2018 and 2020 to explore the longer-term impact of the earthquakes on the mental health and wellbeing of a randomised sub-sample of 60 clients out of the 858 who attended for counselling at the Canterbury Charity Hospital Trust (CCHT). Self-report measures on the 36-Item Short Form health survey (SF-36v2) and the Demoralization Scale (DS-II) were completed to ascertain the participants' current social, physical, and mental health functioning. A comparison of the CCHT SF-36v2 scores with age-specific respondents in the New Zealand 2006/07 national health survey showed that in terms of mental wellbeing the participants in this study had significantly poorer health than the national sample. The ongoing aftershocks and secondary stressors were

also causing continual disruptions in their lives. Overall, these findings show that many years later the participants in this study were still recovering from the psychological impact of the earthquakes. This indicates the need for the development of longer-term mental health care strategies that can be better integrated into future disaster planning.

Keywords: earthquakes, early intervention, SF-36, Demoralization DS-II, subjective incompetence, hopelessness

Background

Christchurch, Aotearoa New Zealand, had two major earthquakes in 2010 and 2011, with thousands of aftershocks relatively close to each other. The first was a 7.1 magnitude earthquake that occurred at 4.35am on a Saturday morning on 4th September 2010, in Darfield (40 kilometres west of Christchurch City). The second, a M6.8 earthquake, occurred on 22nd February 2011 at 12.51pm, devastating the city of Christchurch and affecting tens of thousands of citizens. There were 186 recorded deaths, 7,171 recorded injuries, and extensive structural damage to property, buildings, and infrastructure. Additionally, the ongoing significant aftershocks caused extreme levels of anxiety and feelings of hopelessness in the population (Potter et al., 2015).

As most disasters triggered by natural hazards are a single event it is important to acknowledge that the Canterbury series of earthquakes is more complex than many other disasters, as the region has experienced more than 10,000 aftershocks since the initial earthquake (Fergusson et al., 2015). These repeated aftershocks exposed people to recurrent acute stress. Earthquakes are extreme events that impact on the mental and physical health of entire communities, shattering people psychologically alongside the loss of homes, social networks, public supports, and employment. Immediately after a disaster the priority is survival, followed by a rapid, effective mobilization of resources to meet day to day necessities (safety, security, food, shelter, and acute medical problems; Trope & Liberman, 2003).

Fergusson et al. (2015), when exploring the impact of both short-term and long-term stressors on an individual's health and wellbeing, found that generally people do experience distress when the disaster first strikes and are

left with feelings of fear, horror, panic, disorientation, and confusion, alongside an inability to integrate information. All of these are considered natural and predictable responses to exceptional circumstances. After the initial reactions subside people may also experience a variety of thoughts and exhibit different behaviours. Common responses to a disaster include anxiety, irritability, isolation, increased interpersonal tension or conflict, sensitivity to environmental factors, loss of sleep, guilt, and stress-related physical symptoms such as headaches, nausea, and chest pains (Bonanno et al., 2010; Ferguson et al., 2014; Foa et al., 2006; Mooney et al., 2011; Norris et al., 2002).

However, given resources and good psychosocial support in the immediate response phase then most people can, and do, demonstrate an innate resilience that enables them to return to a reasonably stable level of mental health over a short time (Bryant, 2007; Mooney et al., 2011). The small minority of people who do experience longer term and persistent psychological distress, including post-traumatic stress disorder (PTSD), depression, anxiety-related disorders, and increased substance misuse, may need more specialized mental health care (Bonanno et al., 2010; Norris et al., 2002). Factors that make it more likely for people to develop mental health disorders may include prior exposure to disasters, significant loss from the disaster, the severity and intensity of the initial trauma, pre-existing mental ill health and social circumstances, gender, and overall resilience (Foa et al., 2006; Locke et al., 2012; Norris et al., 2002).

When exploring the mental health and wellbeing of earthquake survivors, secondary stressors (the follow-on effects) also need to be considered. Secondary stressors include, but are not limited to, repeated aftershocks from the main event, loss of employment, financial difficulties, lack of education opportunities, relationship difficulties, insurance claims, and making decisions about damage, repairs, and relocation. The chronic stress imposed by these ongoing secondary stressors can persist for long periods of time, thereby extending the recovery process (Johal et al., 2014; Locke et al., 2012). For example, high levels of hyper-arousal, re-experiencing of the event, and anxiety and depression were found among 101 people seeking treatment in the first few weeks following the February 2011 earthquake in Christchurch (Duncan et al., 2013). General practitioners reported that following the earthquake patients presented with a range of issues including anxiety, stress, sleep disturbance, panic reactions, and physical symptoms (Johal et al.,

2014). The repeated impact of the aftershocks on sleep and cognitive dysfunction, as well as heightened stress, depression, and anxiety among 240 self-reporting members of the public was also highlighted by Kemp et al. (2011). In the 35-year longitudinal Christchurch Health and Development Study, individuals who experienced higher levels of exposure to the earthquakes also reported higher levels of stress and distress (Fergusson et al., 2015). Exploring the psychological functioning of 198 medical students 7 months after the February 2011 earthquake, Carter et al. (2014) found that approximately 10% were experiencing moderate to extreme psychological difficulties at the time of the survey with 70% reporting sleep disturbance, 65% having difficulties with concentration, and 52% with symptoms of anxiety.

Dorahy and Kannis-Dymand (2012) compared two matched Christchurch suburbs, differentially affected by the September 2010 earthquake, and found significantly higher levels of anxiety and symptoms of depression in inhabitants of the more impacted suburb; however, the populations of both showed elevated levels of acute stress resulting from the ongoing aftershocks. While most staff of a Christchurch community outpatient psychiatric service appeared to have coped with the September 2010 earthquake, Beaglehole (2011) found that the ongoing and unpredictable nature of aftershocks appeared to contribute to ongoing anxiety and sleep disturbance for both staff and patients. Relating to longer-term stressors, Fergusson et al. (2014) found that approximately 2 years after the Canterbury earthquakes 57% of the cohort in the Christchurch Health and Development Study exhibited a small to moderate increase in major depressive disorders, PTSD, other anxiety disorders, and nicotine dependence. Eighteen months after the initial earthquake, Spittlehouse et al. (2014) explored the physical and mental health impact of the earthquakes on a random sample of 50-year-olds participating in the Canterbury Health, Ageing and Life Course study (CHALICE; a longitudinal study of ageing) and living in the Christchurch area. This study found significant adverse effects on the mental health, but not on the physical health, of earthquake-affected participants when compared to the pre-earthquake population.

A local Christchurch newspaper reported that there had been an overall increase in demand for mental health services since the 2011 earthquake with a corresponding higher than normal number of prescriptions for depression, anxiety, and insomnia issued (Hogg et al., 2014). Furthermore, when examining the spatio-temporal

change of mood and anxiety disorders in Christchurch between 2009 and 2012 to identify earthquake variables that may have caused such disorders, people living in the widely affected central and eastern parts of the city had a 23% higher risk of developing a mood or anxiety disorder than people living in other parts of Christchurch. These disorders generally increased with closer proximity to damage from liquefaction.

Greaves et al. (2015) used data from the New Zealand Attitudes and Values Study collected between late 2010 and late 2012 across three points in time. The aim of their study was to ascertain changes in psychological distress as reported by 267 residents of six different wards that formed Central Christchurch in three damaged-based groupings (the least, moderately, and most damaged). While psychological distress did not vary across the three groups between 2010 and 2011, by late 2012 the average levels of psychological distress varied as a function of the initial property damage sustained, with the moderately-damaged group faring the worst.

The initiatives, response, and recovery of Māori communities in Canterbury emphasised the resilience of Māori cultural values and skills. In Christchurch, a recovery assistance centre was established to assist with housing enquires, the Red Cross, and Work and Income New Zealand, while *marae* (communal and sacred Māori meeting grounds) were opened throughout the country to accommodate dislocated Māori and to provide places of support (Kenney et al., 2015).

Until the earthquakes occurred, Christchurch had been one of New Zealand's main resettlement centres for people coming from refugee-like backgrounds. Of the people killed or injured in the earthquakes, some were from the local refugee community. This contributed to high levels of worry and anxiety, challenging personal resilience and coping resources among the refugee population, to the extent that some fled the city (Osman et al., 2012).

The aftershocks that followed the Christchurch earthquakes continued with no way of knowing when they would end. The literature on demoralization suggests that stressful external conditions (such as the ongoing aftershocks) can lead to assumptions about self and *subjective incompetence*, a state of "unexplained ongoing non-specific psychological distress" (de Figueiredo & Frank, 1982, p. 353). Demoralization is a useful concept for explaining non-specific psychological distress; it is represented by a self-perceived incapacity to perform tasks and express feelings and is seen as

an appropriate reaction to stressful situations that result in pervasive uncertainty and doubts about the future (Briggs & Macleod, 2010; Clarke & Kissane, 2002; de Figueiredo, 1993, 2013). Thus, people affected by disasters where considerable human and material losses occur, especially in prolonged conditions such as the Christchurch earthquakes, are vulnerable to experiencing demoralization (Briggs & Roark, 2013).

In and of itself, demoralization does not require pharmacological treatments as, much like bereavement, it is now recognised as a natural response to adversity and loss and is part of the human experience (Briggs & Fronek, 2019; Griffith & Gaby, 2005). Demoralization is now generally understood to be an enduring state of suffering that is a normal part of the human condition rather than an abnormal state.

Nevertheless, as Tecuta et al. (2015) point out, although demoralization differs from depression, anxiety, or adjustment disorders by its persistent experience of hopelessness, powerlessness, and existential distress, health professionals can still mistake it for the above disorders. This can lead to misdiagnosis and the use of ineffective interventions that can cause further harm. Thus, it is important that health professionals, particularly in the context of disasters, can distinguish demoralization from mental illness. This allows for the implementation of timely, and appropriately targeted, psychosocial interventions that can assist vulnerable people who are at risk of becoming demoralized (Briggs & Fronek, 2019).

A few studies have found demoralization in the context of disasters. Erikson (1976) undertook 570 survivor interviews 18 months after the 1972 Buffalo Creek flood in West Virginia, USA, and found that most of the survivors were still suffering from identifiable emotional distress. The authors concluded that the continual experiencing of a sense of loss and disorientation so many months after the flood had passed was more consistent with demoralization than a psychiatric disorder. In a longitudinal follow-up study of the 1998 Hurricane Mitch disaster that impacted people in Honduras, 800 adult survivors were interviewed 2 months following the hurricane, and 640 were reinterviewed 2 years later (Kohn, 2013). Demoralization was a predictive and useful concept to examine the long-term impact of this disaster and could be measured using a simple screening questionnaire to identify individuals who may be at increased risk for PTSD.

Distress reactions can quickly appear following a disaster and common reactions, such as insomnia and anger,

can increase the risk for other psychosocial difficulties (Morganstein & Ursano, 2020). These factors, alongside the loss of faith in social institutions, distractibility, and decreased perceptions of safety can lead to people becoming demoralized.

Other studies used the Short Form health survey (SF-36) to measure self-reported health status and explore the impact of earthquakes on mental health and wellbeing. The Spittlehouse et al. (2014) sample from the CHALICE study consisted of 295 participants drawn from the electoral rolls. Self-report participant responses on the SF-36v2 from 50-year-olds were compared with same-age participant scores in the 2006/07 New Zealand Health Survey (NZHS). The CHALICE participants had significantly lower scores on the mental health, role-emotional, social functioning, and vitality scales indicating poorer overall mental health and wellbeing than the participants in the 2006/07 national survey.

Liang and Wang (2013) explored the impact of post-earthquake rescue policies on survivor management from a series of earthquakes in Sichuan, a province of China. They found survivors in the post-disaster areas needed assistance to restore pre-earthquake production to improve their living conditions. Based on these needs, Liang and Wang (2013) used the SF-36 to measure the health-related quality of life of the survivors and their satisfaction with the post-earthquake rescue policies in five hard-hit disaster areas in Sichuan. The mental health of the survivors was poor and there was limited satisfaction with the post-earthquake rescue interventions.

Three years after the 1999 Chi-Chi earthquake, Wu et al. (2006) used the Taiwanese version of the Medical Outcomes Study Short Form-36 (MOS SF-36) to assess and compare the quality of life of 405 survivors aged 16 years or older with the general population of Tong-Chi who were exposed to the earthquake. The same respondents were interviewed by psychiatrists with an adjusted response rate of 70.2%. Compared with the initial investigations conducted in 1999, the Chi-Chi survivors had a higher percentage of various psychiatric disorders than the participants in the general population of Tong-Chi.

All of the above studies found participants' scores generated from self-reported responses on the SF-36 were generally lower relative to their respective general populations. This indicates that the participants in these studies experienced poorer mental health overall with some requiring psychological intervention. Although

little research has been conducted on therapeutic and community practices in the recovery phase of disasters, such as the Canterbury earthquakes, it is recognized that a timely and sustained early intervention can help avoid stress reactions becoming chronic while allowing for people experiencing more extreme reactions to be identified and referred on for more assistance if required (Bryant, 2007). This involves undertaking psychosocial assessments and implementing short term interventions aimed at reducing the initial trauma and distress until the crisis is resolved, or until a referral for more in-depth interventions can be actioned.

Short-term interventions require setting realistic and manageable goals that can reduce the risk of people becoming overwhelmed by the enormity of the tasks occurring due to the loss of homes, employment, and communities. Boyd et al. (2010) recommend setting short term goals as they provide a firm foundation for dealing with the demands posed by the disaster over the medium to long term. Focusing on short-term goals initially reduces the preoccupation of dealing with long-term tasks, thereby assisting the affected population to gain a sense of control over their immediate environment (Trope & Liberman, 2003). When working with children and adolescents, the core actions employed are modified accordingly to ensure interventions are appropriate developmentally.

One week after the February 2011 earthquake, the Canterbury Charity Hospital Trust (CCHT) trustees, recognising how the sudden and potentially massive unmet need for counselling could overwhelm the local health services, established an early intervention service with 56 qualified health professional volunteers (Bagshaw et al., 2013; Briggs et al., 2016). In the main, the CCHT counsellors offered a triage service. Although there is considerable variation in clinical settings where mental health triage services may be operating and service delivery models vary (Sands, 2007), the essential function for the counsellors at the CCHT was to ascertain the nature and severity of the presenting problem and to determine whether an urgent referral to mental health services was required. All the counsellors were experienced senior health professionals who were able to undertake assessments and, if necessary, action a referral to another service. Following the initial assessment at the CCHT most clients were offered one or two follow-up sessions.

The initial phase of the service lasted for approximately 6 weeks with the demand for acute stress counselling declining by the middle of May 2011. Over the next few

months clients still attending the counselling service were reassessed and, where appropriate, people with existing mental health problems were referred onto the local health and community services. Some clients continued to attend the CCHT until their issues were resolved.

During 2011 and 2012, a total of 858 patients (23.2% male, 76.8% female; mean age 48 years; $SD = 19.2$; range 4 to 93 years) attended 1,784 counselling sessions (Bagshaw et al., 2013). The main interventions employed consisted of cognitive strategies to deal with stress, anxiety, and sleep disturbance alongside some specific training in the use of relaxation methods.

This paper presents the quantitative findings of a mixed method study exploring the longer-term impact of the earthquake on the mental health and wellbeing of a randomised sub-sample of the clients who attended the CCHT counselling service. The three main aims of the study were to:

- 1) ascertain the participants' current social, physical, and mental health functioning using self-report measures on the 36-Item Short Form health survey (SF-36v2) and the Demoralization Scale (DS-II);
- 2) to compare the CCHT participant SF-36v2 scores with age-specific participant scores in the New Zealand 2006/07 national health survey in terms of mental health and wellbeing;
- 3) determine the degree of demoralization among the sample.

Methods

Participants

This study is based on the data collected from a sub sample of clients attending the CCHT counselling service between 2011 and 2012. A search of the CCHT patient data base in 2018 identified 858 clients who had attended the counselling service between 2011-2012. A further search revealed 510 of the 858 client files contained contact telephone numbers. Deidentified study numbers were allocated to each file with a contact telephone number. A randomization tool (Urbaniak & Plous, 2013) was used to generate four sets of 25 clients per rotation until all the allocated study numbers had been though the randomization tool. Lists were drawn up and members of the research team telephoned each client to invite their participation in the study.

As other researchers found (Fergusson et al., 2015; Goldmann & Galea, 2014; Knack et al., 2006), recruiting participants following this disaster was challenging as the only way of contacting potential participants was from the

information held on the CCHT database. Three hundred and eighty five (76%) of the client telephone numbers on the hospital data had either been discontinued in the months following the earthquake or, despite ringing at different times of the day, the phones were never answered. Messages were left on each unanswered call inviting a call back. After three attempts on different days and times if the calls were not returned the researcher moved onto the next rotational set of numbers. A further 95 (19%) of the clients contacted declined participation, five (1%) reported they were too young at the time to remember attending the CCHT, and 25 (5%) were unable to attend for an interview as they had left the city.

Recruitment was further complicated by the occurrence of the COVID-19 pandemic from February 2020 as participation in the study required attending an in-depth interview. After several delays of planned interviews the last few were undertaken later in 2020. These challenges limited the final number of participants who were able to be recruited to the study. In total 60 clients were able to be contacted, recruited to the study, and interviewed by members of the research team between 2018 and 2020. All the researchers were qualified and experienced mental health social workers.

Instruments and Procedures

Data collection consisted of two parts. A questionnaire consisting of two sections specifically designed for this study was used in part one to collect socio-demographic characteristics (sex, age, education, living situation, employment status), referral source, and dates and numbers of sessions attended. In the second section a set of open-ended prompt questions was used to guide the discussion and collect information about participant experience of the counselling received and any factors that may have impacted on their mental health and wellbeing. All the interviews were digitally recorded. The findings from these interviews will be reported elsewhere, so further details are not provided here.

Part two involved completing two self-report instruments to determine the degree of any social, physical, and mental health issues among the sample. The first was the SF-36 (v2) short form health survey. This standardised, multi-purpose, generic 36-item self-report questionnaire has a past 4-week recall (Ware et al., 1994, 2000).

The eight-subscales in the SF-36v2 are physical functioning, role limitations due to physical problems (role-physical), bodily pain, general health perception, vitality, social functioning, role limitations due to emotional problems (role-emotional), and mental health.

The first scale (physical functioning) is primarily focussed on the state of a person's physical health and the eighth scale on their mental health. The subscale items are scored, coded, summed, and transformed to a scale of 0 to 100 (0 = worst health state and 100 = best health state). This process generates an eight-scale profile of functional health and wellbeing scores as well as a psychometrically-based physical and mental health profile (Ware et al., 2007). The SF-36v2 survey has high internal consistency; Cronbach's α coefficients range between .83 for physical health to .95 for mental health and the survey has good test-retest reliability (Ware et al., 2007).

The second instrument used was the Demoralization Scale (DS-II). This scale, originally developed by Kissane et al. (2004), was later revalidated and psychometrically strengthened by Robinson, Kissane, Brooker, Hempton et al. (2016). The DS-II is a self-report scale comprising two 8-item subscales (Meaning and Purpose and Distress and Coping Ability). The total DS-II measures the extent to which a person may be experiencing existential distress and despair along a spectrum from disheartenment (a sense of failure) to dysphoria, despondency, despair, and a loss of hope (Kissane et al., 2004). The Meaning and Purpose subscale combines and measures items relating to the loss of meaning, purpose, and helplessness, whereas the Distress and Coping Ability subscale combines items that measure the degree of dysphoria, disheartenment, and sense of failure (Robinson, Kissane, Brooker, Michael et al., 2016).

Responses are rated on a 3-point scale (0 = never; 1 = sometimes; 2 = often) where a higher score on the DS-II indicates a higher level of demoralization. The DS-II demonstrated high internal consistency ($\alpha = .89$ for the total scale, $\alpha = .84$ for the Meaning and Purpose subscale, and $\alpha = .82$ for the Distress and Coping Ability subscale; Robinson, Kissane, Brooker, Michael et al., 2016), making it a practical measure of demoralization in clinical and research settings to ascertain the degree of non-specific psychological distress among a sample. Given the prevalence of demoralization in the studies reviewed above it was important to include a measure to determine the degree of demoralization in this sample.

Analysis

The quantitative data was analysed using IBM SPSS Statistics (Version 26) predictive analytics software. Participants' responses from the subscales within the SF-36v2 were compared with age-specific published

scores on the SF-36 v2 in the 2006/07 NZHS (Ministry of Health, 2008). The 2006/07 NZHS survey was selected for comparison as subsequent New Zealand national population-based health surveys used different measures. Total scores and subsample scores on the DS-II were also entered into the SPSS dataset and analysed accordingly. The qualitative data collected in section two of the questionnaire will be reported separately as the focus of this paper is on the quantitative findings.

Ethical Considerations

Ethical approval for the study was granted in January 2018 by the New Zealand Ethics Review Committee (NZEC: 2017-34) and Griffith University (GU Ref No: 2018/074). All the participants gave informed written consent for the study. A 14-year-old participated in the study with signed parental consent and was interviewed with a parent present. The researchers were aware of the heightened vulnerability of study participants that can occur following a disaster. To minimise harm the interview was stopped if participants became too distressed during the interview, and they were offered a referral to the CCHT Counselling Service.

Results

Descriptive Analysis

Descriptive statistics were used to analyse the sociodemographic features of the sample. The subsample consisted of 51 (85%) females aged between 14 and 91 years ($M = 52$ years; $SD = 15.59$) and 9 (15%) males aged between 43 and 71 years ($M = 63$ years; $SD = 11.98$). Ethnicity was recorded as 96.6% Aotearoa New Zealand Pākehā and 3.4% Aotearoa New Zealand Māori.

Although many of the participants had experienced issues with ongoing employment immediately following the earthquake, at interview 53.3% of the total sample reported they were in full or part time employment (female employed = 55%; male employed = 45%), a further 35% were either retired, receiving a benefit, or a homemaker, 5% were students, and 3.3% were unemployed and still seeking work.

Of the referrals to the CCHT counselling service for the subsample, 86.6% came from medical centres and health services, 8.3% had self-referred, and 5% came from community agencies. The presenting problems were low mood (23.3%), high levels of anxiety (31.7%), acute stress disorders (23.3%), and sleep disturbance, symptoms of PTSD, bereavement, and grief (15%).

Relationship issues, substance misuse, and employment accounted for another 6.7%.

In terms of attendance for counselling, 96.7% attended CCHT during 2011 and 3.3% in 2012. The number of sessions attended ranged from one to 20 ($M = 3.28$; $SD = 3.23$) with anxiety, low mood, sleep disturbance, earthquake trauma, stress, and difficulties coping as the main presenting problems. Following assessment at the CCHT, 31.7% were referred to other services. A small number (3.3%) were later readmitted to the CCHT counselling service for further intervention. Most of the participants reported finding the counselling helpful.

Statistical Analysis

Age adjustment is important to consider in the SF-36v2 as comparison of unadjusted scores can be misleading. To determine whether the SF-36v2 scores in this study were different from the general Aotearoa New Zealand population the most appropriate method (Stevenson, 1996) was to subtract the age-specific SF-36v2 results from the NZHS (2006/07) to normalise the data as age significantly affected some SF-36 categories. Another way could have been to use a one-sample *t*-test to compare the CCHT cohort with the NZHS (2006/07) SF-36v2 average scores but that would have been biased as the CCHT ages did not proportionally reflect the population measure. As a result, the best option was to subtract each participant's SF-36 from their reference age national SF-36 value and then determine whether the mean difference was significantly different from zero. The SF-36v2 subcategories were deemed statistically significant (α level = .05) if the mean difference was different from zero.

Table 1
Characteristics of the CCHT Participants' SF-36 Items and DS-II Total and Subscales Scores

Variable	Mean \pm SD (N = 60)
<u>SF-36 Categories (range 0-100)</u>	
Physical Functioning	75.3 \pm 26.0
Role-Physical	67.6 \pm 39.8
Bodily Pain	66.7 \pm 23.1
General Health	62.9 \pm 22.0
Energy-Vitality	48.7 \pm 20.1
Social Functioning	74.1 \pm 25.8
Role-Emotional	58.6 \pm 44.0
<u>DS-II Items Total Sample and Subscales</u>	
DS-II Total Sample Score (range 0-32)	8.5 \pm 6.8
Purpose (range 0-16)	3.0 \pm 3.5

While no cut-off scores have been established for the DS-II using an extreme group design (Preacher, 2015), interquartile ranges have been used to determine severity with low scorers being in the 0-25th percentile, middle scorers the 25th-75th percentile, and high scorers above 75th percentile; higher scores indicate higher levels of demoralization.

Initially, the means and standard deviations for the eight-subcales in the SF-36v2 described above and for the DS-II total score and subscale scores for the CCHT sample were calculated; these are presented in Table 1. The CCHT SF-36v2 scores were then used for a comparison with the age-specific SF-36v2 participant scores in the NZHS (2006/07).

Comparison of CCHT SF-36v2 subscale scores with NZHS (2006/07) national figures. As Table 2 shows, in the eight SF-36v2 sub-categories the CCHT participant mean scores were significantly lower ($p < .001$) than the participants in the NZHS (2006/07) sample. The one exception to this was the CCHT physical functioning score where, while still lower than the NZHS survey control age-normalised participant scores, no significant difference was found ($t = -1.96$, $p = .054$).

The largest difference between the two studies was seen in the role-emotional subscale which was significantly lower in the CCHT sample (mean difference = 35.2; $p < .001$) than the control age-normalised participant scores in the national study. Other significant differences ($p < .001$) in the mean subscales scores (mental health, vitality, and social functioning) were also found (see Table 2). In terms of general health, the CCHT participants scored lower (mean difference = 10.7; $p < .001$) than the participants in 2006/07 NZHS. These findings indicate that overall the CCHT sample had significantly poorer mental health and wellbeing scores on the SF-36v2 subscales when compared with age-normalised participants in the New Zealand population in 2006-2007.

Demoralization. The scores on the DS-II generate ordinal data that is not normally distributed. As Velanovich (2007) suggests, to allow for skewness, nonparametric bivariate correlations Kendall's tau-b were computed to examine associations between demoralization and the other social demographic characteristics collected in part one of the study questionnaire. Kendall's tau-b was selected for this analysis as significant results can range in either direction from -1 = inverse correlation to +1 = positive correlation with 0 = indicating the variables are not correlated (Allen et al., 2019).

Table 2
CCHT SF-36v2 Subscale Scores Compared to NZHS (2006/07)
National Figures

SF-36v2 Category	Mean Difference (95% CI)	<i>p</i>
Physical Functioning	-6.3 (-12.8 to 0.1)	.054
Role-Physical	-15.0 (-25.5 to -4.6)	.006
Bodily Pain	-6.8 (-12.8 to -0.9)	.025
General Health	-10.7 (-16.5 to -4.9)	< .001
Energy-Vitality	-15.4 (-20.6 to -10.2)	< .001
Social Functioning	-14.1 (-20.9 to -7.4)	< .001
Role-Emotional	-35.2 (-46.5 to -23.7)	< .001
Mental Health	-16.9 (-22.1 to -11.7)	< .001

Note. Differences were calculated as the individual's score minus the age-normalised national figure. The range for all subscales is 0 - 100.

No significant correlations were found between age, ethnicity, or relationship status and the DS-II scores. Significant positive correlations were observed between employment and both demoralization (DS-II total score; $\tau_b = .311, p < .001$) and the DS-II subscale scores (Meaning and Purpose; $\tau_b = .378, p < .001$; Distress and Coping Ability $\tau_b = .310, p < .01$). Education was negatively correlated with the DS-II total score ($\tau_b = -.218, p < .05$) and the DS-II Meaning and Purpose subscale score ($\tau_b = -.234, p < .05$), but not with the Distress and Coping Ability subscale ($\tau_b = -.188, p = .058$).

Associations between DS-II and SF-36v2. The third aim of this study was to ascertain the prevalence of demoralization among the sample. As this study used both the SF-36v2 and the DS-II it was important to determine whether the self-report scales were measuring the same, or different, factors of mental health and wellbeing among the participants.

As the data collected in the SF-36v2 is also not normally distributed, nonparametric bivariate correlations with Kendall's tau-b were used to ascertain any significant associations between the SF-36v2 categories, the total DS-II scores, and the DS-II subscales. The results are presented in Table 4 below and show highly significant ($p \leq .01$) and significant ($p < .05$) negative correlations between the total DS-II total score, the DS-II subscales, and the SF-36v2 categories. Of all the categories in the SF-36v2, pain is the only one that was unrelated to the DS-II total score or either one of the DS-II subscales.

The significant correlations found between the SF-36v2 and the DS-II, alongside the comparison of the age specific participants in the NZHS (2006/07) indicating that the CCHT sample have poorer mental health overall, suggests that the participants in this study would also be more demoralized than people in the general population.

Table 3
Bivariate Correlation Coefficients Between SF-36v2 Categories, the
DS-II Total Score, and DS-II Subscales

SF-36v2 Categories	DS-II Total Score	DS-II Meaning and Purpose	DS-II Distress and Coping Ability
Physical Functioning	-.211*	-.189	-.223*
Role-Physical	-.272**	-.199	-.301*
Role-Emotional	-.432**	-.376**	-.423**
Energy-Vitality	-.484**	-.414**	-.532**
Mental Health	-.530**	-.490**	-.533**
Social Functioning	-.506**	-.526**	-.520**
Bodily Pain	-.169	-.120	-.150
General Health	-.267**	-.220*	-.294**

Note. *N* = 60. * $p < .05$. ** $p \leq .01$

Discussion

This study, undertaken between 2018 and 2020, a full 7 to 9 years after the 2011 earthquake in Christchurch, New Zealand, explored the longer-term impact of the earthquake on the mental health and wellbeing of 60 clients who had attended the CCHT counselling service. As this was a New Zealand study, finding that most of the sample self-identified as New Zealanders was not unexpected. Furthermore, across the helping professions it is common knowledge that there are gender disparities in people seeking help; therefore, finding that more females attended the Charity Hospital Counselling Service is not unusual.

Two validated scales (SF-36v2 and the DS-II) were employed to ascertain the participants' current social, physical, and mental health functioning. The findings were then compared with age-specific participant scores in the New Zealand 2006/07 national health survey in terms of overall mental health and wellbeing. While there was no control group and the participants' prior mental health and wellbeing was unknown, the findings from the SF-36v2 and DS-II scales are consistent with the literature reviewed in terms of the long-term impact of disasters on the mental health and wellbeing of a population (Fergusson, et al., 2014; Greaves, et al., 2015; Hogg, et al., 2014; Norris, 2006; Norris et al., 2002; Spittlehouse et al., 2014).

This finding was supported by a comparison between the SF-36v2 scores from the CCHT sample and the specific age-controlled normalised scores for participants in the NZHS (2006/07) survey. Except for physical functioning, the CCHT sample SF-36v2 scores were significantly ($ps .025$ to $< .001$) lower indicating that, despite the passing of time, the participants in this study had poorer physical

and mental health overall in comparison to same-aged people in the general population.

Examination of associations between the DS-II scores and the socioeconomic factors arising post-earthquake also showed that secondary stressors (loss of employment, education, damaged homes, issues with insurance companies) can impact on participants' mental health. Finding strong, significant associations between the factors on the SF-36v2 and the DS-II in this study suggests there was a degree of demoralization among the CCHT sample.

It cannot be confirmed that the observed differences between the CCHT sample and the age-specific participants in NZHS (2006/07) accurately reflect the differences in the health status 7 to 9 years later as the items in the SF36v2 are not anchored to questions around the earthquake. However, it is worth noting that in this study, as has been found in other studies where the SF-36 or a similar measure was used to compare the mental health of people following a disaster with the general population (Spittlehouse, et al., 2014; Wu et al., 2006), the results do indicate that the CCHT participants had poorer mental health overall and there was a degree of demoralization across the sample.

Limitations

Three big challenges were encountered in this study. One was recruitment as following the earthquake many of the clients had to leave their damaged homes and phone numbers were discontinued, which made contacting them difficult and sometimes impossible. The second was the COVID-19 pandemic lockdown as the imposed restrictions delayed completion of recruitment which resulted in a smaller sample than envisaged. It also needs to be noted that the impact of the COVID pandemic may have compounded the impacts on the mental wellbeing of the participants which, in turn, could have been reflected in their responses to the study questionnaires. Together, these factors potentially limit how representative the subsample is of the total number of clients who had attended the CCHT counselling service. Finally, as this was a follow up study there were no pre and post measures available for comparison.

Despite these challenges, the findings are important as they signal that for some people recovery from a disaster can take a long time. In this study, it was also found that both primary and secondary stressors can impact on mental health and wellbeing. This needs to be taken into consideration for the development of longer-term




mental health and wellbeing strategies that can be better integrated into future disaster planning.

Conclusion

This paper has presented the quantitative findings of a study that examined the long-term psychological impact of the Christchurch earthquake on the mental health and wellbeing of 60 clients who attended the CCHT counselling service. The SF-36v2 scores from the CCHT participants were compared with age-controlled normalised scores in the 2006/07 New Zealand National Health Survey. With one exception (physical functioning), this comparison showed that despite the passing of time, the CCHT participants had poorer physical and mental health than same-aged people in the New Zealand general population. Finding strong significant associations between the factors on the SF-36v2 and the DS-II in this study suggests the CCHT participants were also demoralized. It was also found that both primary and secondary stressors need to be considered when developing individual and community disaster recovery plans.

Overall, this study highlights that, although most people can return to pre-disaster levels of mental health, for some the impact of the disaster and the associated issues means recovery can take a lot longer. This has implications for clinical practice as it indicates the need for the development of longer-term mental health care strategies that can be better integrated into future disaster planning.

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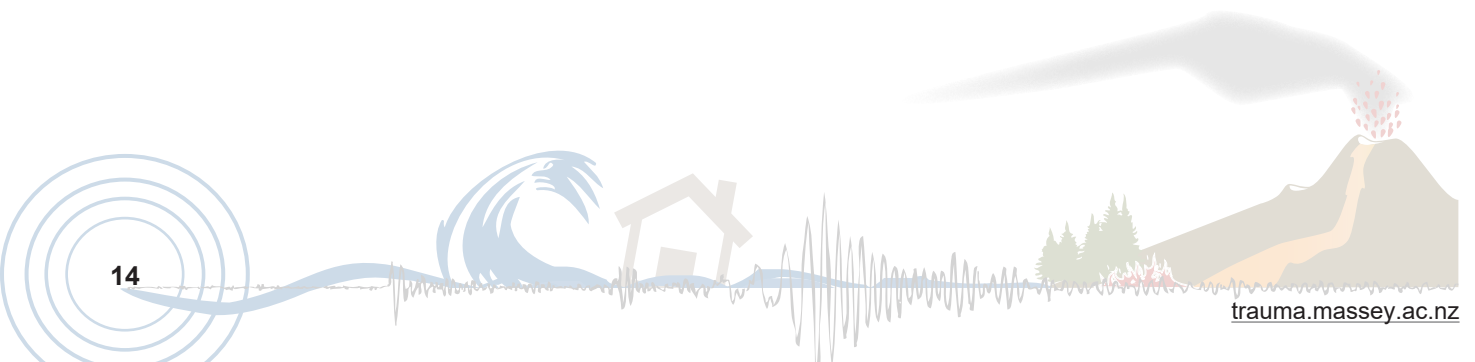
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Recovery workers who have also been personally affected by disasters: Exploring the perspective of people who have dual experiences of disaster recovery

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Abstract

People who are employed in disaster recovery roles while simultaneously personally recovering from the impacts of the same disaster hold a unique perspective into the dimensions of recovery. However, very little has been captured about the experience of this cohort. A qualitative study was undertaken with participants who had previously experienced disaster and wrote a letter to themselves about what was helpful or unhelpful to recovery. This paper presents emergent findings from a small sub-sample of participants who were both recovery workers and personally recovering from the impacts of a disaster. These recovery workers who had been personally impacted by the disaster event: 1) experienced a misalignment between their personal and professional experiences of recovery; 2) had their personal experiences of recovery reframed by exposure to others impacted as part of their professional experience; and 3) initially prioritised their professional roles, but reached a point where their personal recovery needs took priority. Self-determination theory is presented as a potentially useful way to understand the experiences of people who have dual experiences of personal and professional involvement in disaster recovery.

Keywords: Disaster recovery, recovery workers, emergency management, disaster, recovery

Disasters are complex social phenomena whereby a hazard intersects with a human population, wreaking a wide range of disruptions and impacts. There is broad agreement that disasters are increasing in severity, frequency, intensity, and scale globally, and this trajectory is predicted to get worse (Glasser, 2019; Intergovernmental Panel on Climate Change, 2022). Individuals and communities often require a myriad of supports and services to address the wide range of impacts in the days, months, and years after a disaster. Disaster recovery is often characterised as a stage in the traditional emergency management cycle (prevention, preparedness, response, and recovery). In this paper, the term “disaster recovery” refers to a lengthy, complex, multifaceted social process following a disaster event, with no assured outcomes. Recovery can be conceptualised as a dynamic spectrum of possibilities from full restoration to pre-disaster status through to complete change (Brady, 2020). Locally-led recovery efforts are recognised as being generally more effective and sustainable than recovery efforts led by “outsiders” (Cretney, 2016). Contemporary disaster recovery arrangements in Australia and New Zealand and disaster recovery guidelines highlight the importance of efforts being locally led, despite challenges executing these arrangements (Australian Institute of Disaster Resilience, 2018; Inspector General Emergency Management, 2021; Ministry of Civil Defence & Emergency Management, 2019).

Many of the people who work (paid or voluntarily) in the wide variety of recovery roles needed following a disaster will be members of the same disaster-affected communities who have been personally impacted by the disaster themselves (Sakuma et al., 2015). These roles can be in a wide range of sectors such as construction, logistics, health, law, education, media, community services, governance, and private enterprise. These people may find themselves in dual recovery roles – as recovery workers and as people personally recovering from the disaster. Managing the stressors associated with each role simultaneously has been acknowledged as a challenge of community-led recovery after disasters (Hay et al., 2021; Inspector General Emergency Management, 2021).

Disaster recovery research is still a growing field (Jordan & Javernick-Will, 2013), given the increase in frequency and severity of disasters globally and acknowledgement of the long-term impacts on affected populations (Alesch et al., 2009). A paucity of research examines the impacts of working in disaster recovery, and very little work explores the impacts on people who work in disaster recovery while also being personally affected. This includes limited research using existing theoretical frameworks to explain the experiences of recovery workers.

Background

Disaster recovery research, policy, and practice are multi-disciplinary. The types of foundational assumptions made about recovery depend on the discipline and approach of the authors (Eyre, 2006; Jordan & Javernick-Will, 2013). In academic literature, the term disaster recovery is rarely defined, but authors tend to refer (either implicitly or explicitly) to recovery as either restoration to a pre-disaster status or change to a new state, with a descriptive focus that is often discipline centric (Jordan & Javernick-Will, 2013).

Recovery has been described as the most under-researched area of disasters (Phillips, 2009; Rubin, 2009). It is often characterised as being a gruelling, exhausting, and complex time, best measured in years rather than weeks or months (Cox & Perry, 2011; Sword-Daniels et al., 2016; Whittle et al., 2012). The positive impacts of social connections (Aldrich, 2011, 2012; Bryant et al., 2017, 2014), community-led decision making (Alesch et al., 2009; Cretney, 2016), and empowerment (Eyre & Dix, 2014) have been identified as helpful factors contributing to disaster recovery. Conversely, disruptions to important social connections (Green et al., 1990; Richardson et al., 2016) and overly burdensome, bureaucratic, and top-down recovery processes (Alesch et al., 2009; Easthope, 2018) have been identified as hindrances to strong recovery.

Locally-led disaster recovery. Locally-led disaster recovery initiatives and community involvement in recovery planning are seen as key characteristics of successful recovery efforts (Alesch et al., 2009; Cretney, 2016). One of the six principles of Australian national emergency management guidelines regarding recovery planning recommends using “community-led approaches”, stating “successful recovery is community-centred, responsive and flexible, engaging with community and supporting them to move forward” (Australian Institute of Disaster Resilience, 2018, p. 11).

Positive approaches that have been identified include drawing on local knowledge and expertise, reflecting cultural attributes of the impacted community, harnessing pre-disaster networks and relationships (Cretney, 2016; Kenney & Phibbs, 2015), ensuring buy in and trust from community members (Wilson, 2009), emphasising local empowerment and processes that facilitate deliberative democracy (Garnett & Moore, 2010; Wilson, 2009), and improving sustainability of efforts (Cretney, 2016).

Significant barriers to implementation of community-led disaster recovery practices are often observed, despite recognition of the importance of community-led recovery and the emphasis in emergency management guidelines and doctrine (Inspector General Emergency Management, 2021; Leadbeater, 2013). This has been variably attributed to the top-down approaches of political systems and emergency management practice (Easthope, 2018; Smith & Wenger, 2007), the difficulty for non-emergency management personnel or people not in an official position of power to be included in decision-making processes (Kenney & Phibbs, 2015; Weber & Messias, 2012; Wilson, 2009), and practical challenges in post-disaster environments where a perceived requirement exists for immediacy at a time when there are many needs, stressors, and impacts (Easthope, 2018; Leadbeater, 2013). Where community recovery initiatives are locally led, there may be an increased likelihood that people who have been impacted by the disaster events will also be in formal and informal recovery roles.

Impacts to disaster recovery workers. The term “disaster recovery workers” refers to people in a wide range of occupations in post-disaster settings, in paid and voluntary roles. Most research examining the impacts to disaster workers looks at first responders only. Much of the research looking at those involved beyond the initial response has been heavily focussed on psychopathology and physical symptoms related to hazard exposure.

Following the terrorism events in the United States of America on September 11, 2001, a number of studies examined impacts to people working in recovery. These studies found that recovery workers experienced a significant burden of mental and physical health complaints disproportionate to the broader community. The documented physical health complications included an increase in prevalence of asthma, gastro-oesophageal reflux, and respiratory disorders over time and compared to the general population (Herbert et al., 2006; Wisnivesky et al., 2011), with a high

co-morbidity between physical and mental health symptoms (Wisnivesky et al., 2011). The prevalence of psychopathology such as post-traumatic stress disorder (PTSD) and other mental health and emotional problems was found to be significantly higher in workers involved in disaster recovery efforts than in the general population (Stellman et al., 2008; Wisnivesky et al., 2011), with one study aligning the prevalence rates of psychopathology in World Trade Centre recovery workers to returning North American veterans from Afghanistan (Stellman et al., 2008). Risk factors identified for psychopathology in these workers include role commencement dates close to the disaster event, being an unaffiliated volunteer (Perrin et al., 2007), loss of family members and friends in the disaster, disruptions to work, family, and social life (Stellman et al., 2008), severity of disaster exposure (Wisnivesky et al., 2011), past trauma (Cukor et al., 2011; Ehring et al., 2011), work-related stressors, low social supports, and being a woman (Ehring et al., 2011). People who were in roles significantly different to their pre-disaster occupations, including performing their normal tasks in different circumstances or environments (for example, engineers, truck drivers, sanitation workers, and carpenters), were also found to be at higher-than-normal risk of developing psychopathology (Cukor et al., 2011; Johnson et al., 2005; Perrin et al., 2007). However, secondary traumatic stress was also found to be prevalent in unusually high levels in social workers supporting people impacted by disasters (Adams et al., 2008; Naturale, 2007), indicating that the nature of disaster recovery work may be distressing even for those trained to work with people impacted by trauma.

A study examining the probable rates of PTSD in local recovery health workers in Japan following the Great Eastern Japanese Earthquake in 2011 indicated lower rates of disorder when compared to rates following the events of September 11. The authors suggested that this may be due to differences in characteristics of the disaster events and cultural differences in approaches to coping with adversity and responding to disasters (Sakuma et al., 2020). A study led by the same research team noted that additional stressors existed for local recovery workers, who may struggle to balance the pressures of living and working in a disaster-affected environment (Sakuma et al., 2015).

Workplace-related factors have also been identified as both adding to and mitigating stressors for recovery workers. Case studies published about experiences of locally-based social workers supporting recovery from the Canterbury earthquakes in New Zealand identified

the challenges of workers having to manage their own exposure to the disaster event and subsequent stressors while supporting others. Additional challenges included reduced access to supervision and inadequate resourcing (Hay et al., 2021). Work-related factors identified as likely to cause additional stressors for municipal, construction, and health recovery workers in Japan included a lack of rest, additional duties, increased workloads, staff shortages, and poor communications (Sakuma et al., 2015). A study looking at burnout and PTSD in response and recovery workers following the 2010 Haiti earthquakes identified that training and autonomy at work were important in reducing and moderating PTSD symptoms. This research emphasised the importance of positive work environments with role autonomy, training for both technical and “soft” skills, offers of support and supervision, clear delineations between home and work life, and the use of humour in post-disaster settings to mitigate burnout in workers (Kroll et al., 2021).

A study examining the way recovery workers in Australia connect and cope with the nature of their work identified recovery workers as having psychological, physiological, and spiritual (secular and religious) responses to the impact of their work (Eriksen, 2019). Eriksen (2019) described recovery workers as often having a deep, visceral connection to their work which may put them at higher risk of fatigue and burn-out.

In her 2013 New Zealand Winston Churchill Memorial Trust Fellowship report exploring the experiences of community recovery workers who had also been impacted by a disaster, Wills (2013) outlined the conundrum facing local recovery workers and those who employ and support them. She identified that community members who had been impacted by the disaster needed to step up as part of community-led recovery efforts but highlighted that this came at a gruelling and exhausting time for those involved, often resulting in an impossible load of burdens to juggle for those both working in recovery and experiencing the impacts of the disaster. Wills (who had personally been in this position following the 2010-2011 Canterbury earthquakes) noted that while there is much existing guidance for managing stress in emergency management workers, it is almost exclusively targeted at first responders and foreign aid workers. Recommendations from this fellowship for organisations engaging recovery workers who are personally impacted by disasters included making deliberate efforts to facilitate connection between peers, providing training and professional development, lightening unnecessary workloads (e.g., by ensuring back-end organisational

systems were suitable), and systematising support for recovery workers. Wills (2013) also noted that for all of the emphasis on community-led recovery in emergency management doctrine, recovery workers are still assumed to come from “outside” the community and there is a gap in guidance for those who find themselves as both helpers and in need of help.

Motivation and well-being for recovery workers.

Self-determination theory (SDT) is one psychological theory that may offer insight into how recovery workers experience and integrate their work. Over decades, psychologists Richard Ryan and Edward Deci, with others, have developed SDT to explain motivation and well-being (Deci & Ryan, 2002). The central tenet of SDT is that all humans have a set of psychological needs which they naturally, instinctively, and continuously strive to fulfil. Ryan and Deci categorise these basic needs as competence, relatedness, and autonomy, and they describe them as needs which individuals continue to strive to attain and maintain. SDT posits that individuals’ well-being is enhanced when these needs are satisfied (Deci & Ryan, 2002, 2012; Ryan & Deci, 2000; Weinstein & Ryan, 2010). In SDT, humans are considered to be driven to develop their sense of self through both their internal psychological development and connection to others (Deci & Ryan, 2002). While Deci and Ryan consider this drive for development and well-being innate, they do not consider the ability to engage in activities and actions that enhance this as automatic or taken for granted. Rather, they suggest that there are a number of environmental factors (which they refer to as social contextual factors) which either encourage these innate tendencies to thrive or, conversely, thwart them (Deci & Ryan, 2002).

The existing literature points to both the meaningful nature of the roles for many recovery workers and also the increased risk of poor well-being outcomes that recovery workers may face. There remains a gap in the existing literature exploring the experiences of disaster recovery workers beyond the prevalence of psychopathology. This paper contributes to the gap in knowledge regarding the experience of recovery workers who have also been personally impacted by disasters.

This paper draws on research undertaken as part of a doctoral thesis, where the primary aim of the larger study was to examine what people who had been impacted by a disaster found helpful and unhelpful in the aftermath. This paper reports on the emergent themes specifically relating to the sub-sample of participants who were both personally and professionally involved with

disaster recovery. Descriptions of the broader sample and discussions of the doctoral thesis are outside the scope of this paper.

Method

Theoretical Framework

This research was approached from a constructivist perspective, using an interpretation that individuals are situated within a cultural and social context and construct meaning as part of an ongoing dynamic process between internal and external factors (Crotty, 1998).

Study Design

A qualitative approach was taken, and a number of ethical and pragmatic considerations influenced the design of the study. Disasters are, by their nature, potentially traumatic events which can impact all facets of life for those affected and create chaotic, disorienting environments with significant secondary stressors. Sensitivity in study design for topics which are potentially distressing is broadly acknowledged as important (Dyregrov, 2004; Gibbs et al., 2018). Some considerations specific to the study design of this project included: 1) a broad geographic spread of participants; 2) researcher positionality as a senior disaster recovery practitioner; 3) ensuring that a broad range of impacts could be explored by participants, rather than pre-identifying topics of interest; and 4) consideration of research fatigue in disaster-affected communities.

A novel approach to data collection was developed in an attempt to address these ethical and pragmatic research considerations. Participants who had experienced a disaster event at least two years prior were invited to write a letter to themselves addressing the single question “What did you find most helpful and unhelpful after the disaster/s you experienced?” They were then asked to send the letter to the researcher as an email, voice recording, or by postal mail. A second stage of the research regarding participant experience of the research was then undertaken by electronic survey. Discussion of this phase of the research is outside the scope of this paper.

Selection Criteria

Individuals who had experienced a disaster event at least two years prior were eligible to participate in the research. Participants were required to be over 18 years of age, living in Australia or New Zealand, and able to participate in English.

Recruitment Process

A combination of sampling approaches was used to recruit participants for the first phase of the research. A purposive criterion approach was used, by approaching people with known lived experiences of disasters. Noting that this is a contested term, purposive criterion approach is used here to reference a sampling approach where individuals who are especially knowledgeable or have experience with particular phenomenon and meet set criteria are invited to participate (Palinkas et al., 2015; Palys, 2008). A snowball sampling approach was used by asking key informants (including leaders from disaster-affected communities, people with known lived experience of disasters, and recovery workers) to share information about the project with their networks. Convenience sampling was also used by promoting the research project through social media.

A website with information about the research project was developed. The information was presented in written text and in video format on the website. The researcher sent emails containing brief information about the project and a link to the website to community leaders, organisations, and key informants within disaster-affected communities. Many of these people were known to the researchers through their professional work or were recommended by key informants. Some of these people then sent the information to their contacts. Additionally, study information postcards were distributed at some disaster-related community events and provided to community leaders upon request.

Analysis Approach

A constructivist grounded theory approach to analysis was used, with particular reference to the work of Charmaz (2011, 2014). This approach openly acknowledges that subjectivity is inherent in data analysis and inevitably guided by researcher positionality. This was considered suitable based on the researchers' professional exposure to disaster-affected communities. Data analysis commenced at the time the first letter was received and was conducted concurrently with data collection.

A line-by-line coding approach with a focus on participants' actions was initially undertaken. As more letters were received, newer letters were analysed using line-by-line coding and by testing the more focused codes which had emerged from the earlier letters received. A process of memo writing to further develop the ideas emergent in the coding was then undertaken. Charmaz (2008) notes that while memos are sometimes regarded as a procedural step between coding and draft writing

in grounded theory research, memos can be much more meaningful to researchers making sense of their data, giving the opportunity to learn more about the data and develop theory, rather than a mere descriptive summary of the codes identified. The findings presented in this paper emerged through an inductive approach to coding and refining themes. From there, links to self-determination theory were explored in subsequent analysis.

Reporting

No names of participants (real or pseudonym) or codes were used to refer to participants and concerted efforts were made to remove description markers where possible in participant quotes. While it is acknowledged that context may be reduced through this approach, this was weighed against the other considerations relating to anonymity and reporting, including potential mistaken identity and de-humanisation of participants through codes (Saunders et al., 2015). A further consideration was the anonymisation of location (Clark, 2006) and disaster hazards. Attempts were made to remove identifiers around location and hazard event.

Ethics Approval

This study was approved by the University of Melbourne Human Research Ethics Committee (ID: 1543703.1).

Results

Sample Characteristics

Twenty people impacted by a range of disasters in Australia and New Zealand participated in the first stage of the study by submitting a letter.

This article focuses on a sub-sample of participants - four individuals who had been personally impacted by disaster events and were also then employed as recovery workers. This sub-group was not specifically targeted in recruitment, but emerged as a cohort with an interesting perspective in their letters that was specific to their dual experiences of personal and professional involvement in disaster recovery. These participants had been impacted by rapid onset disasters in Australia and New Zealand approximately five to seven years prior to their participation. Three participants described their experience of recovery work as a mostly powerful, positive, and empowering experience. For the other participant, this was not the case, and the professional experience was described as mostly negative, disempowering, frustrating, and isolating. For three participants in this sub-group, these recovery roles

were completely new jobs in organisations with which they had not been previously employed, while for one participant the recovery-focused role was a variation of their previous (non-disaster) employment in the same organisation.

Misalignment Between Personal and Professional Lives

All four participants described a misalignment between their personal and professional experiences of recovery. The three participants who described an overall positive professional experience referred to their work as incredibly intense, powerful, and meaningful. One recovery worker recounted the tone and pace of the work to themselves in their letter:

There is so much to do you barely have time to stop to go to the toilet. Your work feels alive and full of meaning.

These participants recounted feeling that they were able to take meaningful action to support the broader recovery efforts and had agency in this domain of their lives, despite the intensity and volume of the work. Their descriptions of the work in their letters are characterised by a sense of propelling urgency and frenetic energy. These participants explained their motivation to toil so tirelessly as stemming from the value and importance they placed on the work and an immense sense of reward. One participant described their experience in their recovery role as feeling valued and empowered in a way they had not previously experienced:

I found the entire thing very empowering. I was appreciated in my work for bringing a particular skill set ... at least for a short period of time you are recognised for your work, people value it and you are thanked. I feel like I was able to come into my own during that time. People were able to see capacities that I was able to bring, like leadership, even though they had been there before, but they were recognised during it.

Another recovery worker summed up the intensity of their experience: "Working in recovery almost broke me, but it was also the best thing ever." Despite identifying that they felt out of their depth at times, these three participants who had mostly positive professional experiences felt supported by a collegiate team of co-workers who were going through similar experiences. For the most part, they felt that the people around them at work "got it", as described by this recovery worker:

...you [and your colleagues] mostly share similar feelings, 'we're building the plane while we're flying

it!'. Most of the time you'll feel like you are in it together, that you are part of something good. You are supported by, and are a supporter of, your team and others working in recovery and the wider community.

This sense of camaraderie at work was observed by the participants who had positive experiences, though one commented that this was diminished when their organisation decided to split roles into "business as usual" and "disaster recovery" focused teams. They noted that this was a turning point in their organisation and the shared sense of purpose significantly reduced following this split.

These accounts of the strong sense of autonomy, agency, and meaningful contribution was contrasted by the way these three participants reflected on their personal lives, where they described often feeling out of control and defeated in relation to disaster recovery. For one of the participants, this sense of loss of control in their personal life manifested through the swift, dramatic changes which took place in their surrounding environment, stemming not only from the physical destruction wreaked by the disaster hazard but also the decisions from authorities regarding reconstruction. Significant infrastructure and housing damage and subsequent housing shortages meant that friends had to relocate, and places of significance either had been destroyed or were no longer accessible. The sense of frustration and loss of control is apparent as they recounted the story to themselves in their letter:

Your previous life was made up of routines that reflected all the enjoyable parts of your life. Change occurs quickly and without your permission. You respond by pushing this part of your life to the side. Here you have little agency over the effects of the [disaster event].

For another participant, the impacts in their personal life were amplified by their relationship with their partner who became abusive after the disaster. At work, they felt like they had autonomy and power, but at home this feeling of control was absent:

It was totally a temptation to hide in my work. Work became a refuge. It was the one place in my life where I felt vaguely capable and in control. I could be the 'me' that I wanted to be at work. I felt more capable in that environment. In the next two years, work became a place where I was succeeding and everything else was falling apart.

The fourth participant with dual recovery experiences described their professional role as an overall negative experience. Despite this difference with other participants, they also identified the professional part of their life as misaligned from the personal part. While this misalignment did not stem from the same contrast of autonomy and power in their professional role as experienced by the other three participants, they described an experience of being disempowered in their personal life as a result of the formal recovery processes implemented in their community:

... you will no longer have control over what you do, who you speak to and how you feel. Your property will not feel like your own, your life will not feel like your own. You won't be asked what you want; you will be told what you need.

This participant then went on to identify how their professional role stifled their personal recovery. They perceived their professional role as a conflict to participating in the broader recovery efforts in the community where they lived or to seek assistance for their own impacts:

You will forget that you are a local. You won't speak up at meetings because you are being paid to listen not speak as a local. You will be disadvantaged with your recovery as you will feel that it's a 'conflict of interest' to ask for help.

This sense of powerlessness and isolation was further exacerbated by a sense of not being able to adequately support their loved ones who were also struggling from the impacts of the disaster. Despite the difference in the experience of working in recovery, all four participants described a misalignment between their personal and professional experiences of recovery.

The Professional Experience of Recovery Influenced the Personal Experience of Recovery

The four participants raised a number of points about how both the narrative of recovery in the professional realm and the exposure to a range of recovery experiences through their work roles altered the way they framed recovery in their personal lives. One participant reflected on the gap between the recovery narratives used in the professional realm compared to their personal experiences. The dominant recovery narrative used in their work – that community pulls together and neighbours help neighbours – did not ring true of their own experience as an impacted person. They reflected

that this disparity caused them to struggle to position themselves as a recovering person:

I was too busy working to fill up our water buckets at the water tanker so I didn't have those chats [to neighbours]. I was too busy working in it to be living it. And the working in it became my life. Was my work place my community? We so often differentiate our audiences by communities, but I genuinely don't think I fell into any of the segmented audiences – and if I didn't, who else didn't?

Another participant described this juxtaposition between the professional narrative and their personal experience simply by writing:

It's different outside of work... it feels like recovery doesn't make as much sense outside of that context.

All four participants observed that their professional role exposed them to a range of other people's experiences, which they may not have been privy to otherwise. This included people from socio-economic and ethnic groups different to their own. When reflecting on this process, one of the participants stated:

Our whole [house] repair process was gruelling, but we were the lucky ones. [At work] you saw all these burdens and complexities that others had, and you come home and it's genuinely shitty, but it also feels trivial.

Two of the participants specifically noted that this exposure to the broader impacts of the disaster caused them to reassess their personal experiences.

The Personal Experience Takes a Backseat to the Professional Experience... Until it Doesn't

All four participants described how all-consuming their professional recovery roles were. For the three participants who had a mostly positive experience at work, there came a point where they preferred to focus on work because of a sense of progress, reward, and recognition that was largely absent in their personal experience. In a letter from their "future self", one of the participants advised themselves to try to avoid this gap:

Start thinking of your life holistically again. Try not to separate out your work and home life to such a degree, deriving too much meaning and pleasure from one over the other. At times it will feel like this approach is okay, or justifiable given the situation, but be honest with yourself, don't make excuses. You will have to deal with the misalignment at some point. Recovery isn't something you are only helping others to do.

All participants with dual experiences described reaching a point where they could no longer sustain the misalignment between their professional and personal lives. All four participants made a decision to leave their professional roles, coming to the decision in different ways:

And then you will come to the point where you need to say no – that your time in the ‘recovery team’ is over. You will leave, and you will try to return to your ‘normal’ job and your normal life.

Interestingly, three of the four participants chose to relocate from their communities after finishing their roles, and the fourth also seriously considered moving away. Those that moved reflected on how the change of environment to a non-disaster affected location was a positive experience that allowed them to focus and process their personal experience of recovery:

... it helps to move away for a period, to live where everything isn't touched by the event. Where street life and nightlife occur without rubble and road works. But be patient about it. Regarding this point, you can look forward to the fact I think you get this right. You listened to yourself, your personal needs, and balanced these with the incredible experiences and career opportunities that were offered.

The participant who did not relocate (the same person who did not have a positive work experience) contemplated moving away as a way to manage their personal experience. Their attempts to reclaim their pre-disaster life didn't work as hoped:

... the people in that world won't understand. They will have no idea what you've been through, they will have no idea how you feel and they will not have the capacity to help you. You see people are starting to get to the end of 'helping' and you will be realising that you have left it too late... You will feel differently about your community too. You will struggle to go to social events and you will isolate yourself from the community. You will struggle with the physical scars of where you live and you will struggle with things that are built around you. You will think about moving away, and you will feel unsettled. Life will be different for you where you live.

Ultimately, this participant did not relocate, but eventually accessed professional assistance to help their personal recovery.

The intensity and ferocity of the pace of recovery work, and the misalignment between their personal and

professional experiences of recovery, seemed to only be sustainable for a limited period of time before all of these participants were motivated to make a dramatic change to their work roles in order to prioritise their personal lives. The similarity of the experiences described by the participants points to a number of aspects which require further examination: First, the intensity and all-consuming nature of working in the post-disaster environment; second, the misalignment of personal and professional experiences of recovery which seemed to be ultimately unsustainable; and third, the dramatic changes to both the personal and professional areas of their lives that recovery workers undertook when this misalignment became unsustainable.

Discussion

Recovery workers who are also personally impacted by the same disaster have a unique perspective, with interesting insights into disaster recovery. The importance of having locally-led disaster recovery has been recognised in literature and policy but also presents a challenge for those engaged in supporting others while also personally affected. The experiences and support needs of the people who have a dual experience of personal and professional involvement in disaster recovery are important to understand, considering the likelihood for recovery workers to be exposed to work-related stressors (Ehring et al., 2011; Wills, 2013), secondary trauma (Adams et al., 2008; Naturale, 2007), and the intensity of the post-disaster environment (Cox & Perry, 2011; Leadbeater, 2013; Whittle et al., 2012). One of the most significant components of the themes raised by these participants is the misalignment between their personal and professional experiences of disaster recovery, and how this impacted their sense of well-being. All of the participants in this sub-sample spoke of the intensity and volume of their workload but some also reported a strong sense of agency, purpose, and connectedness with others around them, which was largely absent in their personal life after the disaster.

While limited research is published about the experiences of recovery workers, we identified one especially resonant case that had similarities to the participants in our study. In their work on the 2007 Hull floods in the United Kingdom, Whittle and colleagues (2012) presented the story of a participant with dual roles who identified an uncannily similar trajectory to the recovery workers in this study. Marilyn (not her real name) was the headteacher of a school heavily impacted by these floods and whose own home was also flooded. She played

a central role in supporting the staff and student body who had almost all been directly impacted. In her diary entries, Marilyn describes the intensity and importance of her work, which is prioritised at the expense of her personal recovery, until she eventually retires (earlier than planned) due to the experience (Whittle et al., 2012).

Self-determination theory (SDT), as described by Ryan and Deci may provide a useful theoretical framework to better understand the experiences described by these participants and to identify supports that could a) reduce personal and professional misalignment of recovery, and b) improve the well-being for people in dual recovery roles. SDT is underpinned by the premise that all humans have a set of psychological needs that they continuously strive to fulfil and maintain. These psychological needs are categorised as competence, relatedness, and autonomy.

Recovery workers who were also personally impacted by disasters identified frustrations in their post-disaster personal lives, characterised by a loss of control, disrupted social connections, and limited ability to make changes to restore their lives. That is, they experienced a reduced sense of competence, relatedness, and autonomy, resonant with existing literature relating to disaster recovery hindrances (Norris & Kaniasty, 1996; Whittle et al., 2012). Where their work experience was positive, it was characterised by components that Ryan and Deci identify as central to meeting the needs of well-being. In other words, these workers were in roles that afforded them a sense of competency, autonomy, and relatedness. For the participant who experienced a negative work experience, they described a reduction in their sense of competence, relatedness, and autonomy, largely driven by “outsiders” who did not understand the nature of the work and demands of the role, the environment in which they were working, and the disconnection between their professional and personal experience. This sense of damage to relatedness continued even when they left the professional recovery role, affecting the participant's relationship with neighbours, friends, family, and colleagues. The framework of SDT is a useful way to consider the misalignment between personal and professional experiences of recovery as identified by participants and may serve as a useful framework for further research in this area.

Implications

The challenges and experiences identified by this sub-sample of participants with dual experiences of recovery has implications for the way locally-based recovery

workers are engaged and supported. Additionally, these findings have implications for the way external agencies and organisations working in disaster-affected communities interact with locally-based recovery workers. Those “outsiders” working to support recovery efforts should be particularly mindful of the dual burdens being negotiated by locally-based recovery workers, especially when they are in a position to influence these workers' experiences. This may include flexibility in work arrangements, additional support to reduce workload to assist those workers to balance home and professional recovery work, and explicitly considering how these dual roles may affect local recovery workers' ability to fully participate at work and within their communities. Professional supervision, access to communities of practice, and support with a focus on enhancing competency, relatedness, and autonomy may assist these workers to recognise and negotiate the difficult terrains of dual roles in recovery. More broadly, these preliminary findings support existing research and policy promoting community-led recovery approaches which enhance a sense of competency, relatedness, and autonomy at a time where much in the lives of those affected by disaster may be feeling out of their control.

Strengths, Limitations, and Future Opportunities

One of the strengths of this paper is that the findings emerged from a larger study that included a range of perspectives from people who experienced different hazards in different locations. The smaller sample size was well suited to the analysis approach undertaken and allowed for a deep and nuanced interpretation of the rich data provided by participants. While this paper draws on the experiences of a small sub-sample of participants, the findings and recommendations for application are resonant with existing work following disaster events in New Zealand, Japan, and Haiti (Kroll et al., 2021; Sakuma et al., 2015; Wills, 2013).

Due to pragmatic decisions in the research design, eligibility criteria excluded people without sufficient confidence to participate in English. The researcher notes this limitation and hopes in future projects there would be capacity for a linguistically-diverse research team, or funding for interpretation and translation, so these barriers could be overcome.

These findings that emerged from a sub-sample of participants should be considered preliminary. However, the link to an established theory and literature is promising and supports the potential for the findings to have a broader application beyond the sample. For

example, future research with this group of workers could focus on mechanisms which foster a sense of cogency between personal and professional experience, and approaches which support recovery workers to have high levels of competence, relatedness, and autonomy.

SDT presents a useful lens to explore motivations for helping behaviour following disasters, and potential barriers to satisfying psychological needs and feelings of well-being (Deci & Ryan, 2002). The psychological domains of SDT (competence, relatedness, and autonomy) are resonant with issues commonly identified in post-disaster settings in relation to the role of social connections, power in decision making and community led action (Aldrich, 2011, 2012; Bryant et al., 2017, 2014; Cretney, 2016; Eyre & Dix, 2014; Leadbeater, 2013; Norris & Kaniasty, 1996).

Conclusion

People who have dual experiences in disaster recovery, through both professional and personal involvement, have a unique insight into the dimensions of this setting. Very little is known about this cohort from a research perspective. The limited existing literature indicates that these people carry a significant burden and may be more susceptible to psychopathology, physical health complaints, and stress related to both living and working in the post-disaster environment (an environment known for its chaotic, gruelling nature and compounding stressors). Given the predictions of increased frequency and severity of disasters, and a push for locally-led recovery efforts in emergency management guidelines, it can be reasonably predicted that this cohort will grow.

This emergent theme from a sub-sample of participants in a broader study offers interesting insights into the experiences of people who hold a dual role in disaster recovery. This study presents findings that people who hold these dual roles may: 1) experience a misalignment between their personal and professional experiences of recovery, 2) have their personal experiences of recovery reframed by exposure to others impacted as part of their professional experience, and 3) initially prioritise their professional roles but reach a point where their personal recovery needs to take priority over their professional role. Recovery workers who also have personal experience of the disaster play an important role in broader disaster recovery efforts and may experience their work as overwhelming or empowering, or both. The findings indicate a clear need for further enquiry into the experiences of people in these roles and how they can be

best supported through the relentless recovery process. Self-determination theory may offer a helpful framework for future research to understand how competence, relatedness, and autonomy are differentially affected in the dual roles of recovery workers who are also personally affected by the impacts of disasters.

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Sustaining research and researchers during the COVID-19 pandemic: A dose of the collective method as a strategy

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Abstract

This inquiry stems from work documenting the role of reflexivity in our research on redefining family during the COVID-19 pandemic. As social science researchers engaging with the collective method on this complex and dynamic pandemic, the tendency to divert our attention away from human behaviour to the topic-du-jour (biology, contagion curves, variants, virology, etc.) was strong. We are scholars who, as survivors, are also insiders. Introducing an autoethnographic lens in the analysis became a necessity; it was unavoidable if we were to recognize our role alongside the most vulnerable. We needed, therefore, to acknowledge that the pandemic – like the climate crisis – dissolved any illusion of being able to reflect as distant outside observers, while still affording us new and emerging opportunities for collaborative dialogue. We chose to entertain reflexivity as a core dimension for research during a pandemic through which to analyse and explore legitimate research questions and not just add a few sentences in the methodological section. The purpose of this paper is to reflect on how the collective method fuels a collective of researchers with 10 unique projects in different locations to conceptualize and operationalize a wide range of projects focused on re-defining family during this pandemic, and how the collective method

functions to promote a reflexive research process.

Keywords: *Collective method, slow disaster, reflexivity, COVID-19*

Navigating the collective method has been difficult since the pandemic has been global, delocalized, boundless, and temporally undetermined. The entire global population was affected and with so many emerging uncertainties we were not able to envision what a post-COVID-19 pandemic landscape would look like. Like in other disasters, as researchers we are not simply studying it, we are also evaluating dynamic changes and secondary and tertiary consequences as a lived experience. Our discussions yielded a significant resolve; namely, we focused on being proactive about what we could learn in the here and now from these lived experiences, in the hope that we would be better prepared for other similar slow disasters in the future.

The pandemic evoked challenging questions for us as researchers, in part because the field of disaster studies has still not fully conceptualized how to position our research or how to place our own lived experiences within the context of an unfolding slow disaster (Haney & Barber, 2013; Henderson & Liboiron, 2019). In this case, we do not have access to a wealth of social scientific disaster research about the flu pandemic (circa 1918) and there is no roadmap to show how to study a pandemic with disaster research methodologies that incorporate researchers as an intricate part of the process. Our group was intentional about intersubjective questions in our individual projects; namely, how might or should our projects shift throughout the pandemic (e.g., in response to political, health, and epidemiological changes, wars, and in some places such as the United States (US) the killing of, and police brutality against, people of colour and mass shootings). How do we evolve the collective method to help each other conduct our individual research projects whilst simultaneously contributing to the disaster field and public policy? How do we bring our research to life in such a way as to help others also conduct research in an environment where its components are dynamic and shifting constantly?

As social science researchers engaging with the collective method during the pandemic, the tendency to divert our attention away from human behaviour to

the topic-du-jour (biology, contagion curves, variants, virology, etc.) was strong. We embraced seeing ourselves as “scholar-survivors” (e.g., scholar-survivors who are insiders; Barber & Haney, 2016, 2013; Pardee, 2015) and asked how a “disaster-affected researcher creates the space for critical reflection to achieve insights beyond the limits of one’s own personal experience” (Pardee et al., 2018, p.673) whilst continuing to live through the ensuing slow pandemic (Barnett & Blaikie, 2005; Knowles, 2020). Introducing an autoethnographic lens in the analysis was unavoidable if we were to recognize our role alongside the most vulnerable in any disaster. We needed, therefore, to acknowledge that the pandemic – like the climate emergency – dissolves any illusion of us being able to objectively analyse this disaster separately from what unfolds around us. We aimed at integrating reflexivity as an integral part of our studies and not just as a few sentences in the methodological section. Not only were the challenges of living through the pandemic non-trivial, but the synchrony of conducting disaster research amid that same disaster has been quite unusual. In most disaster research, there has been a unique event or series of events and the researcher analyses the consequences of the disaster after the fact.

COVID-19 emerged globally on January 31, 2020, when the World Health Organization (WHO) confirmed that the virus was transmissible to humans, highly infectious, and likely to produce a high mortality rate. By March 20, 2020, following its European and Asian counterparts, most of the North American continent went into strict lockdowns to control the spread of the virus and not overwhelm healthcare systems. As borders closed, so too did educational and healthcare facilities, businesses, and recreational spaces, among others. In the US, at the onset of the pandemic, the lockdown was initially defined as a temporary 2 week measure which changed to months. It became clear, then, that the pandemic was not a disaster in the traditional sense (with a notable beginning, middle, and end), but a slow disaster with no foreseeable conclusion. For disaster researchers, the onset of the pandemic marked a time when, instead of looking “from the outside in,” we, as social researchers, opted to become the subjects of our own research in an autoethnographic process. This process confirmed that it is not simply the carriers of vulnerability who were affected by the ever-changing landscape of the pandemic, and brought into sharp focus the evolving nature of the threat and the need for evaluating previously established metrics.

Natural hazards and viruses are not elements that should be constructed in a negative light. Instead, all the components relating to the disaster under study (hazard, exposure, and vulnerability) are social constructions (Lavell & Lavell, 2020). Following any disaster, how a society or country responds influences how the incident, impacts, response, and recovery are experienced by the affected population (Lavell & Lavell, 2020). Although disasters and risk are social constructions, researchers and the public may forget it as the disaster itself is unfolding. The virus is homologous to a natural hazard and its impact is connected to the level of social vulnerability of the population living in a specific territory. However, COVID-19 has been exceptional compared to other disasters in many ways. The pandemic has affected almost every country in the world and the functioning of the global economic system. Second, unlike many disasters that may cause immediate damage but then allow for a recovery period, COVID-19 has had a prolonged impact; the virus has continued to spread and mutate, requiring ongoing efforts to manage and control it. Third, the health impact associated with the virus has been profound; while some disasters primarily affect infrastructure or property, COVID-19 has had a significant impact on population health. The virus has caused widespread illness and death, and many people who have recovered continue to experience long-term health effects. Fourth, the pandemic had a significant impact on many local economies, with shortages of basic supplies and higher prices than prior to the pandemic for necessities like food, petrol to fuel cars, and healthcare. The pandemic has also led to widespread job losses and financial hardship for many individuals and families. Lastly, the impact of the pandemic on social interactions has been profound. COVID-19 disrupted social and cultural norms in numerous ways as restrictions on gatherings and travel limited social interactions and how people work, learn, and live their daily lives.

In response to the continued lockdowns globally, and in the face of the rising death toll, strain on hospital and healthcare resources, and fear about the unknown, the Natural Hazards Center at the University of Colorado at Boulder issued a call for working groups under their CONVERGE network programme. Our working group was designed to foster inclusive qualitative and quantitative research on “Re-Defining Family during COVID-19”. We began meeting with scholars of all levels (professors of all ranks, graduate students, independent researchers, a medical doctor, and a high school intern) to define the projects and linkages to family that

connected our research endeavours. We defined the concept of family loosely, thereby not only including the traditional definition of the nuclear versus chosen family but also extending our working definition to the groups that we were studying. This meant that anyone who was part of, and felt membership to, a cohesive group was also considered a family for the purposes of our research. Focusing on different researchers and research communities around the world, our team used the collective method in such a way as to foster support, understanding, and intellectual, social, and methodological assistance for research projects on re-defining family during the pandemic.

The collective method is a metamethod that transforms the traditional working group experience into a process where one learns from reflection on action (Schön, 1993) but not just as a solo practitioner activity. We know from experience that learning only takes place when we interact with the knowledge that we possess collectively. Specifically, the collective method is defined as:

an integrated, reflexive process of research design and implementation in which a diverse group of scholars studying a common phenomenon—yet working on independent projects—engage in repeated theoretical and methodological discussions to improve (1) research transparency and accountability and (2) the rigor and efficacy of each member's unique project. (Pardee et al., p. 671)

Since reflection is an essential component of transformative learning, the collective method allows us to work on and apply the concepts we learn as we move through the research process. The main objective is to create an open working group that can help members develop their independent research studies, provide scholarly feedback at each stage of development for that work, and provide a space for completing the often-neglected emotional work for which researchers receive little, if any, training.

The slow and irregular nature of the COVID-19 disaster created a myriad of methodological issues. As such, it became necessary for us to think creatively and in such a way as to re-define what it means to do “adaptive, inclusive, and collaborative” research (Pardee et al., 2018, p. 672; see also: Aldridge, 2014, Browne & Peek, 2014). We discussed regularly (weekly or bi-weekly) our projects to provide methodological, content, and personal support. We asked each other hard questions and held one another accountable for our respective work whilst

simultaneously keeping each researcher grounded in the thematic substance of family during this disaster.

The notion of family was interrogated differently by each member of our working group, and thus our projects reflected the myriad interests held by each respective researcher. Examples of this research included: A participatory journaling methodology to study COVID-19 pandemic experiences of “vulnerability bearers” (cf., Peek, 2019); citizens' access to information during the quarantines in Chile; the experiences of medical professionals charged with diagnostic tests in a laboratory setting, the caring for patients, and vaccine clinical trials in Germany; the role of lived experience of vulnerability and the importance of integrating voices from the field, especially of those in front-line capacity, with precarious employment and/or limited social support; interpersonal communication during the continuous pandemic media coverage; pandemic safety plans in childcare centres; the coping mechanisms of underrepresented minoritized or more socially and geographically isolated groups; the impact of lockdowns among families with children studying; the impact of losing athletic facilities on the perceived mental and physical well-being of athletes; and the impact of the pandemic on intellectually disabled individuals. In sum, all researchers in the working group came together from varied disciplines to define “family” as a group of people engaging in similar social actions or behaviours that bound them together as a unit.

While the collective method has roots in pre-pandemic research (circa Hurricane Katrina), it is appropriate but needs adapting for pandemic research. Such an adaptation is consistent with the CONVERGE protocols and the overall mission of the working group. The CONVERGE mission is to increase knowledge production by encouraging scholars from different disciplines and backgrounds to work together to find solutions to key problems and issues, encouraging disaster researchers to find and share possible solutions that might lead to lessening the impact of an incident on a group of people. In essence, given that this is a paper on how we used the collective method reflexively as a form of knowledge production, our working group interrogated the definition of family in novel ways “transcending disciplinary and organizational boundaries” (Peek et al., 2020, p.1).

Our research exemplifies how the collective method and convergence theory can be used together to encourage, promote, and enhance transdisciplinarity such that we are contributing to the depth, breadth, and integration of knowledge production, a key issue in reflexivity.

Reflexivity is generally understood as awareness of the influence that a researcher has on the people or topic being studied, while simultaneously recognizing how the research experience affects the researcher. It is a fundamental component of inductive processes of research practices in the social sciences (Ben-Ari & Enosh, 2011; Gilgun 2008; Probst 2015). The researcher and the subject shape each interaction in such a way as for both to shape the construction of knowledge (Finlay 2002; Lynch 2000).

COVID-19 has been a disaster within a disaster. The world was confronted with a serious and scary public health issue while also contending with its economic, social, and political ramifications. Life as we knew it came to an abrupt halt as lockdowns, quarantines, and other restrictive measures disrupted all sorts of routines. Researchers became the outsider within (Collins 1986; Simmel 1950). In essence, through our own work observing the social world, not only did we become autoethnographers, but we also became subjects of our own research. Reflexivity requires that researchers reflect upon the research process to assess the effect of their presence and their techniques on the nature and extent of the data collected. The purpose of this paper is to reflect on how the collective method sustained a group of researchers to conceptualize and operationalize a wide range of projects focused on re-defining family during the pandemic and how the collective method functions reflexively to promote the research process. With 10 unique projects and researchers located across the USA, Canada, and Germany, the form and nature of each project was defined and took on additional meaning through online discussion, interaction, and interrogation from fellow working group members.

Method

Reflexivity addresses personal, interpersonal, methodological, and contextual issues. It involves concrete practices. In our joint effort, we promoted collaboration and reflexivity as an intrinsic dimension from the beginning of research design to manuscript writing (Charmaz, 2011). Methodologically, our aim was to assess the role played by the collective method in the conceptualization and operationalization of our individual projects within the working group. We started writing freely about our individual projects on the topic “Redefining Family During COVID-19” and shared our writings in web conference meetings. Everyone was held accountable for their own projects, as the questions and comments from others strengthened

our commitment to explore and highlight the role of reflexivity in our research. A recurrent question, among others about intellectual rigor in the methodology, was how our existence both as scientists and as survivors of the slow-moving catastrophe/pandemic affected the research questions and analysis.

The primary goal of our research – usually in groups using the collective method – was to translate our data and information on how family has been redefined because of the COVID-19 pandemic into actionable policy and practice recommendations. Each of our discussions focused on justifying our own positions as researchers and focusing our own actions as coordinated co-productions in the research field (Smith, 1987). The collective work examined our own research interactions as empirical texts “grounded in interpretative sociology rather than realism” (Crawley et al., 2021, p. 130), “linking interaction with material and discursive macro-practices” (p. 128). We had to question the multiple roles and viewpoints that we saw emerging, not only in our own projects but also in the work of the other members of the group. This allowed us to better interpret and understand our dual roles as researchers and subjects in a changing landscape. By its very nature, the uncertainty posed by the pandemic played a significant role in our understanding of the realities we observed in our research subjects and environments. Therefore, the anchoring in our own reflective standpoints and their constant definition and redefinition formed an essential core of the work.

As a working group, we aimed to understand the role that our own individual viewpoints played in our research along with the definition of reflexivity with which we were operating. Once we negotiated this critical point, each researcher was asked to return to what had previously been written on the subject and revise their work. As with each of our discussions, the members of the working group asked each other hard questions to encourage more critical thinking, discourse, and explanation of the members’ interactions, reports, and analysis.

Once group members submitted their revised writing, we began the process of qualitatively coding each submission to highlight the role of reflexivity in both our individual and collective work. Given that the mission of the collective method is to encourage critical thinking about a common theme that runs through our research projects (redefinition of the family during the COVID-19 pandemic), along with the mission for this scholarly work (reflexivity in disaster work), the process of defining the categories into which our writings were coded became

a source of significant discussion, definition, and then redefinition. At the end of our negotiations and discursive polling of coding options, we agreed to code each writing based on the following critically defined categories: (1) The salience of our individual identities, social locations, and experiences with the choice of our COVID-19 research topic; (2) The impacts of learning from other working group members on our individual studies; (3) The social and emotional support system woven into the working group process; and (4) Continuous reflexivity, uncertainty, and the ongoing nature of disaster as part of the research process. Each of these themes shaped the adaptation of the collective method used by the working group during this pandemic.

Results and Discussion

Our use of the collective method stimulated theoretical, methodological, and analytical forms of triangulation, expanded the transdisciplinary implications of the work, and positioned the research within a disaster risk reduction framework. The ability to sustain reflexive thinking on the researchers' part(s) was significant because the COVID-19 slow disaster required (and continues to require) careful attention and adaptation to several issues that unfolded simultaneously. Foremost, the balancing of work and family life was particularly complex for research participants and researchers because of mandated and voluntary quarantines and other restrictive measures. The collective method did not bury the question of asking what we were doing or what was desirable. It is tempting to address the research question and to settle into the assumption – sometimes emerging from marginal thinking and denial – that we were in a post-disaster stage rather than struggling with the slow disaster as we continue to carry out our research projects. Moreover, this disaster pushed us into axiological questions about values and not just epistemology. Some of the reflexivity-related themes that emerged from our individual free-writing were shared by all members of the working group, while others were important to only a few members. The following section presents and discusses each of the main themes, illustrating them with excerpts from our writing.

The Salience of our Individual Identities, Social Locations, and Experiences with the Choice of our COVID-19 Research Topic

The choice of a research topic is necessarily personal or linked – even tangentially – to our identities, social locations, and/or past experiences. As the spread of

COVID-19 quickly shut down options for in-person and travel-based research, we, like other researchers across the disciplinary spectrum, focused more acutely on aspects of our own lives in determining our revised and reconstructed research agendas. In our working group, different members foregrounded their individual identities such as scholar-athletes, scholar-activists, or mothers of school-aged children in shaping their initial research topics.

This reflexivity is illustrated in Greene's identity as an athlete. As she struggled with the challenging restrictions imposed by the pandemic, she began forming her research questions:

When COVID-19 hit, all athletic facilities closed forcing athletes to pause their training, and then recreate it, often using makeshift technologies and implements (cans of soup or bottles of laundry detergent instead of hand weights, team meetings, running or biking instead of swimming, etc.). Every time that we were told that athletic facilities would re-open "with restrictions," something would shift so that reopening would be delayed. Athletic equipment was in high demand and, often, either on backorder or subject to supply chain issues; thereby, making purchasing it a challenge. As a competitive athlete, myself, I found myself grounded in my daily workouts during the lockdown but yearned for a return to a new normal. This yearning prompted me to study athletic adaptations during the COVID-19 lockdown/ pandemic, and to categorize my primary focus (athletes) as a family.

Gibb's personal experiences at home with her daughter during lockdown instigated her own research project, as she reflected on in this excerpt from her writing:

My study began in mid-March 2020 with a simple question to my then 7-year-old daughter, "do you want to keep a journal about your life in COVID?" Over the following months, this invitation grew into a full-fledged study examining the pandemic experiences and mobilities of children, teens and older adults in Canada and the United States.

Yet, there always remained some tie-ins with our earlier research interests and expertise. As Bendeck explains, it was the coupling of her intimate connection to children with learning and developmental disabilities and her academic experience with vulnerability and disaster that shaped the origins of her project:

This project was motivated by my personal experience with the pandemic, as a doctoral student and instructor,

and as a mother of school-aged children with learning and developmental disabilities. My prior studies in social vulnerability and disasters along with my experiences with school shutdowns and quarantine led me to question the strategies being implemented by the education system and its impacts on children with disabilities and their families.

Given that researchers in the social sciences can never be divorced from personal and positional biases, the principles of standpoint theory and reflexivity came into play in both our research projects and in our interactions as a working group. Indeed, it was acknowledging our own biases and perceptions within the ever-changing COVID-19 landscape that served to strengthen our individual projects and collaborative efforts. While the principles associated with a reflexive standpoint can be acknowledged prior to embarking on a project, the process of truly acknowledging our own reflexive positionality within our research necessarily occurred after the fact. As the above referenced excerpts suggest, our conversations were informed by certain urgency. Making sense of the uncertainty could have been constructed as a research question as much as resolving some of the challenges we were facing in our apparently distinct personal, professional, and political lives.

The Impacts of Learning from Other Working Group Members on our Individual Studies

The working group was organized such that there were opportunities to learn from each other through our regular meetings that included writing together. As noted earlier, we are scholars of various academic ranks, we work in different types of academic, research, and practitioner institutions, we are trained in different disciplines, and we live and work in different locations around the world. These differences enriched our discussions about research design, methods, data collection, analysis, and other emerging issues. Having the group as a sounding board shaped the contours of our individual projects. Greene described this process of dialogue and its impact on her study design:

Sharing my ideas and receiving feedback from others provided me with important considerations for selecting a population and sample. For example, I had considered focusing on the experiences of people living with two or more disabilities. It was helpful to hear from others in the group, some of whom had research experience with disabled populations, share their experiences and cautioned against the possibility

of being both too broad and too narrow in terms of defining the population.

Bacigalupe described how the collective method informed his research design and positionality of his work:

The collective method stimulated theoretical, methodological, and analytical forms of triangulation, expanded the transdisciplinary implications of the work, positioned the research within a disaster risk reduction framework, and sustained the thinking during times in which the push is for accomplishing the task that the disaster imposes on those committed to make sense of what it is unfolding.

Bendeck described how the collective method and constructive process with other working group members enabled her to expand the scope of her research topic and develop a more robust methodology:

Knowles' concept of the slow disaster concept helped frame my study and developed the purpose, methods, and theory. The purpose of the study evolved from being primarily a study of educational and developmental outcomes, to being focused on the experiences of families as they were cut off from friends, family, co-workers, and educators. As this study took shape, the working group analyzed the data collection methods critically and made suggestions for improvement. Aspects of sampling, data collection tools, recruitment strategies, and interview protocols were improved throughout this collective method as I reflected on the group's feedback and made critical changes. In addition to qualitative interviews, it became clear to me that social network analysis was needed to understand how networks were interrupted or enhanced during the pandemic and how families-built resilience through use of these networks. This method was added to the study design following many discussions with the working group.

Reflecting on the peer review process, Gibb describes how her own work and reflexivity were impacted by the accountability provided by the working group:

Being in conversation with a larger cohort of social science disaster researchers, each pursuing their own COVID-19 pandemic studies, added a whole new layer of depth/complexity to the reflexivity I apply to my own work. In our meetings, we give short updates on our projects, then share our thoughts, reactions, and questions about each other's projects. Feedback from other group members has been particularly important in determining strategies for navigating research ethics

approvals as my project targets often vulnerabilized populations, as well as for understanding some of the emerging trends in how different groups of people are navigating the pandemic.

As described above, the working group offered both proactive and reactive peer review and accountability to individual projects. Disaster research is at the core an interdisciplinary effort and the push for integrating frameworks and defining a research agenda “together” is highly valued. Pursuing a collective team research methodology may support not only the “sharing” of knowledge but also fulfil the need for a transdisciplinary effort.

The Social and Emotional Support System Woven into the Working Group Process

The importance of social and emotional support was integral to our working group process and emerged as another theme that was notably critical to people around the world during the pandemic (el-Zoghby et al., 2020). This support was operationalized through a variety of coping strategies. The working group process as a *supportive family unit* paralleled the research topic that brought the working group members together.

Greene wrote reflexively about the sense of belonging she experienced as a working group member:

Athletes met with significant uncertainty and disconnection from “families of choice” during the pandemic. Being a part of this working group enabled me to have a sense of belonging and connect meaningfully with other social science scholars.

Bendeck discovered similarities between the modes of connection her study participants made during the pandemic to connect with family and the similar methods used by the working group to establish their own supportive family unit:

Many families stayed in contact through video platforms and texting apps, creating new traditions of connection via virtual pathways. Similarly, as a working group, we used web conferencing software regularly for critical discussions, check-ins, social hours, and community writing sessions. The continuity and consistency of these virtual meetings formed a supportive system that encouraged members of the group in their research projects and in their personal lives. While many academics felt cut off from their departments and project teams during the pandemic, the collective method of the working group was

situated in a way that it created a sense of family and support.

Gibb further expounds on this process and how her own research findings regarding coping strategies matched a characteristic of her experience with the working group:

We discuss the challenges we’re facing, and how aspects of our non-professional live bleed into our research projects - for better or for worse... Curiously, or perhaps obviously in hindsight, there are parallels between the topics in my individual study and my engagement with the working group. For example, my study investigates the coping strategies of children, teens, and older adults in navigating the pandemic. My desire to connect meaningfully with other researchers during the pandemic is threefold. One, it stems from a motivation to construct rigorous and relevant scholarly work. Two, it acknowledges that professional networking and advancement remain important during the pandemic. Three, it reflects a personal motivation and curiosity of how other disaster researchers are thinking through the merging of their professional lives and expertise with the wider global context. Coping strategies have thus become both object-of-study and method.

Bacigalupe reflected on his personal experience as part of a collective research process and how the process mirrored his own use of social media as a preferred mode for keeping connected:

It is difficult to embrace research and activism without the support of a collective. Activism can be absorbing and extremely demanding. The work I was doing included members of the public who respond to Tweets and other social media and traditional media to enable triangulation. The collective method is both mobilizing not only a form of knowledge creation but also facilitating the bridging of science and politics and of embracing axiological and ontological questions (not just epistemology).

We confirmed the power of an interdisciplinary and geographically distributed set of researchers to provide the depth of understanding and support as well as the accountability required to complete the inquiries. This grounding helped us address one of the most emotionally excruciating dimensions of the pandemic and the subject of the next section: uncertainty.

Ongoing Reflexivity, Uncertainty, and the Ongoing Nature of Disaster Become part of the Research Process

When COVID-19 emerged, there was a great deal of uncertainty around the virus itself, including how it spread, how long it could survive on surfaces, and how effective different measures were in preventing and treating the disease. This led to changing recommendations from health authorities and a constant need for new research and data. The pandemic created significant economic instability, with many businesses forced to close or operate at reduced capacity due to lockdowns and other restrictions. There was significant fluctuation in opinions of how long the pandemic would last, how effective government stimulus measures would be, and how quickly the economy could or would recover. Socially, the pandemic disrupted social norms and led to confusion around what was safe and permissible in terms of gatherings, travel, sports, education, and other activities. There were also questions around how long social distancing and masking measures would be required, and how people's social and mental health would be impacted in the long term. The pandemic highlighted political and policy uncertainties, including differences in approaches to managing the virus between different countries and regions. There was also uncertainty around the effectiveness of government responses and the long-term political impact of the pandemic.

Overall, the COVID-19 pandemic created a high level of uncertainty in many areas of life, leading to anxiety and stress for many individuals and communities. The nature of the pandemic compelled our working group to consistently revise our individual research foci. The questions we asked about the experiences of research participants were also part of our own lives and became integrated into the research process. They served to inform not only the questions that we asked, but also the ways in which we analysed the responses. The pandemic is a disaster that is unlike other events in its category; namely, while there is a well-defined beginning, there is no clear end. Certainly, the way that we used the collective method to highlight reflexivity in our research enabled us to recognize more fully our own unique mixed and intergenerational academic ranks and brought critical insights into our discussions of research design, methods, and emerging issues throughout the pandemic, all while focusing on and living in different geographical locations around the world. These issues became key in our acknowledgement of how reflexivity played a role in

our making sense of the uncertainty and ongoing nature of the COVID-19 pandemic.

Bendeck describes how the uncertainty of the pandemic influenced discussions with working group members and led to changes in the framing of her research project:

As the pandemic wore on, it became clear within the working group that the concept of the slow disaster must be adopted to better understand the ongoing paradigm in which we and our research participants are living and how this impacts further outcomes on education, development, and wellbeing. Through reflexive conversations with the group, the slow disaster concept took on a more prevalent role in my own research and ways of thinking about the experiences of my study's population.

Gibb's quote below explains how the working group helped her to manage the ever-changing landscape of the pandemic and the constant uncertainty to which she was exposed while living and working within the pandemic context:

Right from the start, reflexivity has been a recurrent theme in our research team meetings as we deliberated over the ethical, practical, and strategic implications of pursuing questions, methods, populations, research partner organizations, etc., and navigating the hiccups that transpired over multiple waves of COVID-19 outbreaks and restrictions. Within my small research team, the continual critical examination of the research process strengthened our collective endeavor, in terms of the quality of our methodology and analyses as well as our commitment to each other's personal and professional successes.

Bacigalupe reflected on how his research topic and methods were influenced by the uncertainty of the pandemic and led to changes in his process:

Collaborative research that also intends to exert change is a complex endeavor, doing so while a disaster unfolds adds another layer of complexity as the pandemic cycles of illness and death added existential angst. It is possible to define a focused research subject, but it may seem futile as shared assumptions are questioned repeatedly. We think we know what we are pursuing one week and the next, but things change and/or while we expect that they will change again. At the start of the pandemic, I intended to study its impact on the most vulnerable families since my work in disaster risk reduction and environmental decay was with public schools

and communities exposed to natural hazards in coastal and mountain communities in Chile (Watson et al., 2020). As mobility restrictions became more permanent, and long quarantines were implemented, schools didn't open, my research work not only engaged with larger national audiences through traditional and social media, but also started to shift from the more traditional long term community building process to advocacy and dissemination of information related to COVID. The shift reflects how uncertainty also became part of the research process. Further, uncertainty remains ever present as we attempt to get back to our life before the beginnings of this slow disaster.

Greene shared how uncertainty impacted her research participants and led to innovation in athletics. Reflecting on these changes led her to key findings in her work:

Interacting with other scholars who had different experiences in their daily lives prior to the pandemic expanded my thinking and research practices in such a way as to examine more critically key social networks that came into play of athletes navigating an uncertain world of practice, training, competition, and interactions with coaches. Moving some aspects of workouts online and adapting to outdoor "facilities" with makeshift weights and apparatus also emerged. What struck me most is the innovation and creative thinking with which athletes found ways to continue training despite the lockdown restrictions and prepare for an uncertain competitive season (were organized competitions happening or not?) together with how scholars in my area of disaster sociology encouraged expanding disaster research into the realm of athletics.

Greene later reflected on her own experience with uncertainty during the pandemic. She acknowledged the positive role that the working group played on her ability to cope with these challenging times, both as a researcher and in her personal life:

I felt detached and considered that others likely did, as well, and thus was content throwing myself into my work. I needed the working group as a means of community and critical like-mindedness, as well as the sense of belonging in a world that made little sense suddenly. The working group grounded me in the critical research process whilst simultaneously working together to do and disseminate critical research on how non-familial "families" formed during the pandemic lockdown. The research connections within our working group and the family of scholars

that we assembled remain critical to my work today as we learn to live with COVID-19 in the same way in which we learned to live with influenza and HIV/AIDS.

Conclusion

The use of the collective method to conduct our individual research projects enabled the working group to interrogate both our individual and collective research data collection, analysis, and write ups in a more cohesive, coherent, and reflexive manner. Our discussions afforded us the opportunity to question deeply how we approached our research questions, our subjects, and our reflexive positionality within our own research projects as concomitantly researchers and subjects. Through "in-depth discussions over issues of our own, and our participants', positionality, intersectionality, and the applied ethics of post-disaster field research" (Pardee et al., 2018 p. 672) we produced collaborative, reflexive, and intersectional informed research studying the effects of the pandemic on family lives.

The impacts of learning from other working group members on our individual studies, the social and emotional support system woven into the working group process, and the ongoing reflexivity and uncertainty of the disaster became part of the research process. The uniqueness of the social isolation that the pandemic required created different discussions for our working group, thereby enabling more rigorous analyses. Applying the collective method not only produced improved and reflexive work but also provided the working group members with a socio-emotional support system throughout the research process. As researchers battled the uncertainty and social isolation of the pandemic in their own lives, they were able to support each other personally and professionally.

Research communities are important to improve the quality (rigor, trustworthiness, etc.) of the research (process, product) and to ensure the wellbeing of disaster researchers, especially in prolonged disaster situations. The collective method operates as one way to sustain a research community with researchers located in multiple locations and disciplines and with diverse social science disaster research projects. Like other researchers across the globe, the pandemic forced us to innovate regarding how to conduct research as well as build research communities. Working as a team, the collective method provided a roadmap to make sense of a constantly shifting research environment. Despite

the geographical distance, the pandemic had us living through the “same” disaster we were studying. While this situation might create some methodological and epistemological conundrums, we understand there is no such thing as value-free research. The collective method enables us to make sense of doing research when the direction of that research changes constantly. Indeed, as the pandemic continued, public health preventive measures and vaccination became increasingly politicized and, as we navigated a “new normal”, we recognized a common existential angst regarding the significance of our research. Instead of looking “from the outside in,” we, as social researchers, also became the subjects of our own research in an autoethnographic process. This autoethnographic process showed us that it is not simply the most vulnerable in society who are affected, disparately and differently, by the ever-changing landscape of the pandemic. It also showed us the critical role of dialogue and why these terms are dynamic and require continued re-examination and negotiations of the social and individual. Finally, we note that a similar process took place as we revised this manuscript based on the critical feedback provided by peer reviewers.

We joined other social scientists who tracked the pandemic to uncover, analyse, and share data, and were intentional in writing for more than just academic audiences. Furthermore, some of us challenged authorities and policymakers by advocating for decisions based on either an ethics of care, the precautionary principle, or evidence-based medicine models for making decisions, and others in the back and forth. These aims and perspectives shaped the content and process of our working group and the ways in which we adapted the collective method to the pandemic context. The initial research projects were contextualized within those frameworks but the isolation and necessity of resolving individually the challenges of daily living during a pandemic made us de-emphasize how privileged we are as research scholars. We prioritized the need to advocate and recognize that this disaster, like others, impacted the bearers of vulnerability. The discourse centring on the biological characteristics of the virus and its modes of contagion could have served as a distraction from our greater goal of understanding the significance of human behaviour, as influenced heavily by concomitant social, structural, and political determinants, on defining COVID-19 as a disaster. In sum, the collective method allowed us to interrogate our individual research projects and counteract depoliticized discourses.

Authors' Note

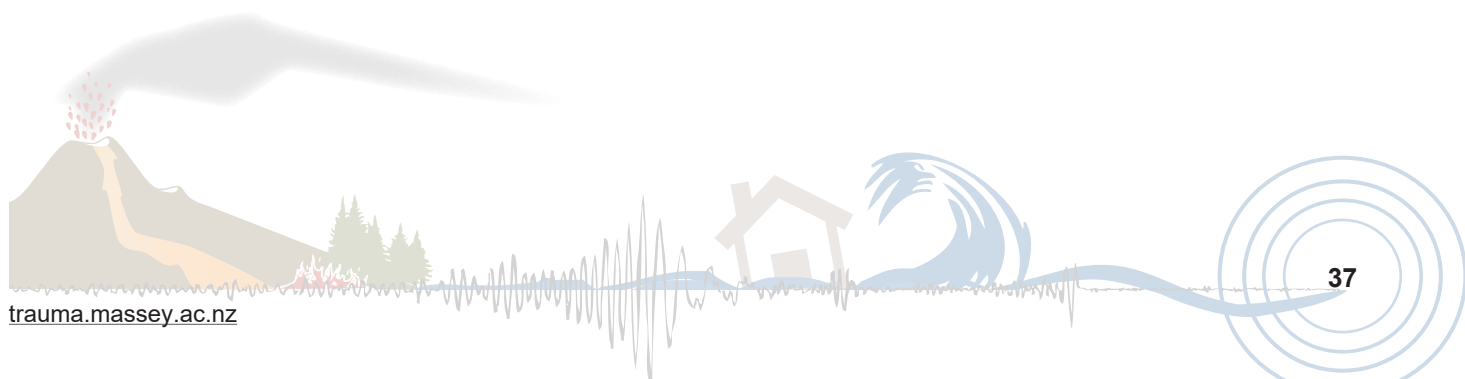
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We have no conflict of interests to disclose.

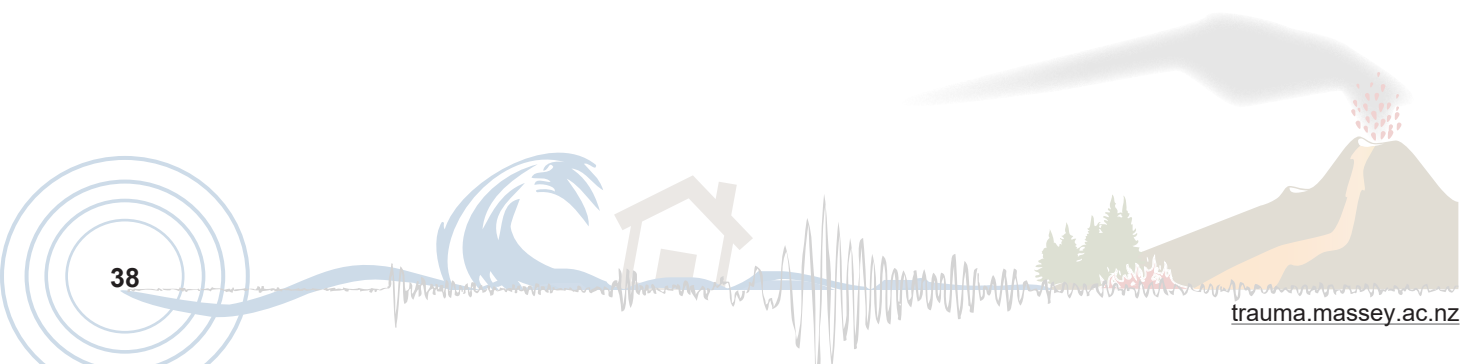
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