COMMITTEE FOR THE ADVANCEMENT
OF LEARNING AND TEACHING

CLOSING REPORT ON GRANT
As at 31 March 2013

Name: Sandra Richardson

Department: Centre for Postgraduate Nursing Studies

Title of Project: An exploration of the impact of Christchurch earthquakes on teaching by staff in an educational setting

Amount awarded: $19,967

Aims of Project:

Project Goals and Objectives

1) Identify the responses of administration, academic and clinical teaching staff to an unexpected crisis situation.
2) Report on the planned and unplanned role and systems adaptations which occurred as a result and explore the future applications thereof.
3) Identify and analyze the impact and implications of the responses to the recent earthquake event in relation to alteration of curriculum, course delivery, assessment and transition to greater levels of e-learning and support.
4) Develop recommendations relevant to a range of health settings and levels of education in terms of the actual or perceived needs of academic, administrative and clinical teaching staff, which would support them to continue in their roles under such circumstances.

Progress on Project

The project has been completed in relation to the two phases of data collection, with preliminary analysis of data undertaken. Secondary analysis is intended at a later date, with regard to comparison to previous and concurrent study findings, and also with relation to more detailed statistical analysis.

The project was undertaken in two phases – the first of these involved the dissemination of an electronic survey to University of Otago (UoO) and Canterbury District Health Board (CDHB) staff who have involvement with nursing education through the UoO and CDHB. A total of 67 individuals completed part or all of the survey. Demographic questions, rated statements related to the impact of the earthquakes on work role, general health and wellbeing and responses to psychometric scales exploring aspects of stress and anxiety. These included the Depression, Anxiety, and Stress Scale (DASS-21) which is a self-report scale designed to measure the negative emotional states of depression, anxiety, and stress; the Post Traumatic Stress Disorder Checklist (PCL) which is a 17-item self-report measure of the 17 DSM-IV symptoms associated with post-traumatic stress disorder; the Eysenck Personality Questionnaire – Brief Version (EPQ-BV) a 24-item self-report scale designed to measure extraversion and neuroticism; the Work and Social Adjustment Scale (WSAS), a simple 5-item self-report measure of functional impairment and the Connor-Davidson Resilience scale (CD-

RISC) is a 25-item self-report measure of resilience. Simple descriptive statistics have been undertaken in relation to this section of the study.

The second phase of the study involved follow up face-to-face interviews with participants. Twenty-six interviews have been completed, transcribed and initial analysis completed. Twelve participants were University employees and 14 were CDHB employees. Thematic analysis of the resulting transcripts has been undertaken.

When do you expect to evaluate the project?

While the initial project report has been completed, further evaluation still needs to be undertaken. A preliminary evaluation of the project is attached with this document.

Amount expended:

At last report: $15,109 remaining: 4,858

Since last report: Transcription fees $3,600
Survey Monkey: $299.25 (US) = 352.59 (NZ)

Anticipated remainder of approx. $905

Any other comments:

Despite the delays in the process of this study, the researchers believe that it will provide useful data and that the formulation of recommendations that can be used to inform practice developments will result. We appreciate the patience of the CALT committee in relation to the delays, and look forward to being able to share with you the final results.

Signature: S.Richardson

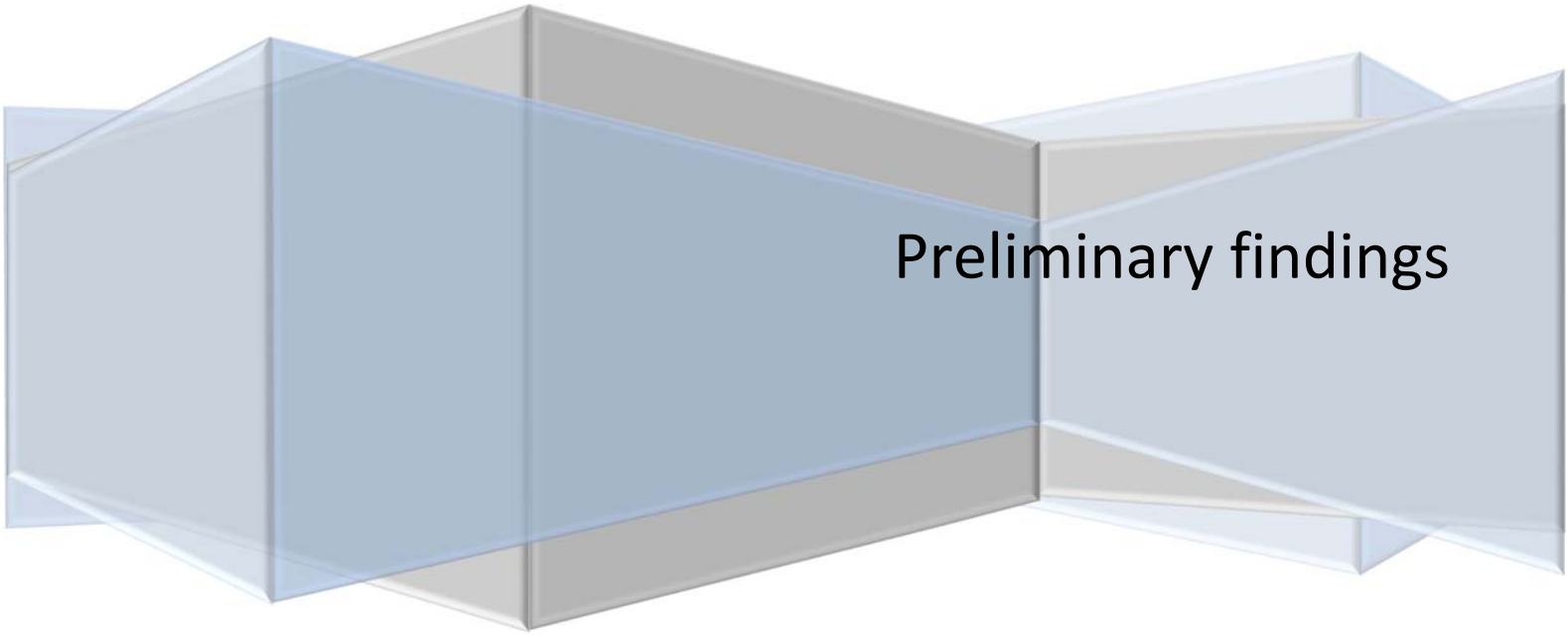
Date: 17/12/13

University of Otago, Christchurch

An exploration of the impact of Christchurch earthquakes on teaching by staff in an educational setting

CALT Project Report

Sandra Richardson



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Executive Summary

Background:

The Canterbury region experienced four major earthquakes following September 2010, together with significant aftershocks. This has impacted on teaching and learning in the tertiary education sector, including that provided by the University of Otago.

A review of international literature has identified limited findings related to natural disasters and their impact on tertiary education (Shaheen, 2007; Lemieux et al 2010; Davis et al, 2010; Meyer & Wilson, 2011). This highlights the need to generate an evidential base from which to develop educational policy and to identify areas of likely resilience and need within the NZ educational system.

Understanding how teaching and learning were impacted and identifying the factors which enabled clinical, academic teaching and associated research activities to continue will contribute to future planning within the University of Otago. Following on from a study looking at student experiences during this time, this project explores the experiences of staff and their ability to respond and adapt to unexpected crisis events.

Project Goals and Objectives

1) Identify the responses of administration, academic and clinical teaching staff to an unexpected crisis situation.

2) Report on the planned and unplanned role and systems adaptations which occurred as a result and explore the future applications thereof.

3) Identify and analyze the impact and implications of the responses to the earthquake events in relation to alteration of curriculum, course delivery, assessment and transition to greater levels of e-learning and support.

4) Develop recommendations relevant to a range of health settings and levels of education in terms of the actual or perceived needs of academic, administrative and clinical teaching staff, which would support them to continue in their roles under such circumstances.

Findings: Phase 1

Participant profile

The survey participants were recruited from both the Canterbury District Health Board (CDHB) and the University of Otago (UoO). Criteria for inclusion in the study was an involvement in student support, whether through direct contact or by means of policy, management or associated activities that impact students. The particular area of focus was in regard to staff support for Registered Nurse students, engaged in study with either the Centre for Postgraduate Nursing Education, UoO or undertaking study within the CDHB.

Demographics

- 67 individuals responded to part or all of the survey
- Age ranged from 23-65, average age of 49

- 98% were female (n=59)
- 72% were in a married/de-facto/civil union partnership
- 35% had dependent children (n=23)
- 20% had others who were in a dependent relationship (n=13)

Impact factors

- 43% of participants identified that they knew someone who was killed or badly injured in the earthquakes and aftershocks (n=23)
- 91% of participants identified damage to their home (n=60) with only 9% (n=6) stating no damage was present
- 47% (n=31) were affected by the uncertainty associated with insurance processes
- 97% (n=62) were in Christchurch for the Sept 4th 2010 earthquake (7.1 magnitude)
- 88% (n=56) were present for the Feb 22 2011 event (6.3 magnitude)
- 94% (n=60) were present for the June 13th 2011 event (6.3 magnitude)
- 89% were present for the Dec 23 2011 event (6.0 magnitude)

Impact on work

Impact on teaching: at its worst, 60% were either moderately or severely impacted (n=30)

Impact on administrative role: at its worst, 58% were either moderately or severely impacted (n=30)

Impact on research role: at its worst, 42% were either moderately or severely impacted (n=15)

Impact on clinical role: at its worst, 44% were either moderately or severely impacted (n=19)

Access to resources

- During the first month post the earthquakes, the most commonly identified resource concerns were telecommunications, computer, printer and access to files
- At the 3- 6mths this was lack of teaching and office space and limitations in regard to library services
- At 6mths + the major concerns were still in regard to teaching, office and library space

Innovation and response

The following innovations / responses to deal with the post-earthquake issues were considered by respondents

- Working from home: this was an option for 41% of respondents; 28% hoped to see this continue
- On-line course / teaching: 47% saw this introduced, with 58% hoping to see it continue
- Remote access to library: 57% were aware of this, 66% wanted it to continu
- Collaborative opportunities (internal): 55% felt this was present, 67% wanted to see it continue
- Collaborative opportunities (external): 51% noted this to have occurred, 55% hoped to see it continue

Overall level of disruption (to practical aspects of job)

- 71% of respondents rated the experiences as being between 'somewhat' and 'extremely' disruptive in relation to practical aspects of carrying out their job(n=41)
- 16% identified no disruption (n=9)

The majority of examples given to illustrate disruption related to:

- Teaching impact
- Physical dislocation
- Library

Impact on role

- 69% agreed that there was an impact on their role as a result of the earthquakes
- 62% felt that there expectations relating to students had changed since the earthquake
- 67% identified that the way in which courses were delivered had changed

Examples given to illustrate this related to the following themes:

- Lack of control
- Additional responsibilities
- Reduced capacity

Perceptions of support

The most commonly cited source of support was family, friends and neighbours

Additional opportunities for employer support were identified:

- Acknowledgement of the impact of closed childcare services
- Provide roving IT support for staff working from home
- Put EQ leave in place earlier
- Improved communication
- Provide de-briefing opportunities
- Provide additional psychological support
- Thanking staff
- More resource to match increased workload
- Make contact early to check on well being
- University to be more involved in identifying additional venues
- More car parking facilities

Recommendations

To be finalised in follow up report

Findings: Demographics

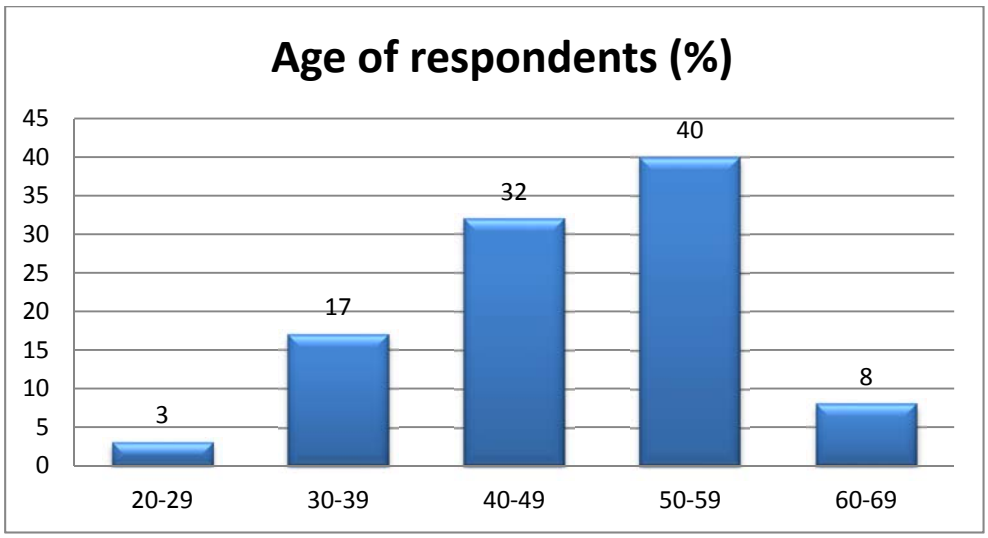
A total of 67 individuals responded to the survey, 98% of whom were female (n=59)

Ethnicity:

52 chose to respond to this question, with 15 entering no response. Of those who responded, 98% identified as New Zealand European.

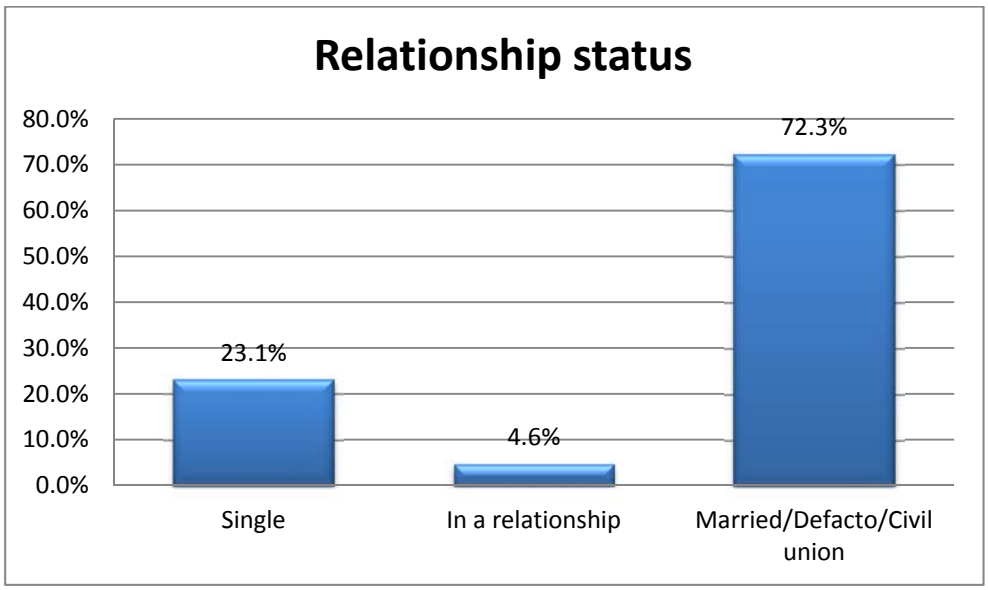
Age:

- 65 entered their age
- age ranged from 23 – 65
- median: 49
- mode: 53
- mean: 48



Relationship status

- 65 responded



Dependents

- 65 responded to the questions regarding dependent children; dependent others
- 35% had dependent children (n=23)
- 20% had others who were dependent on them (n=13)

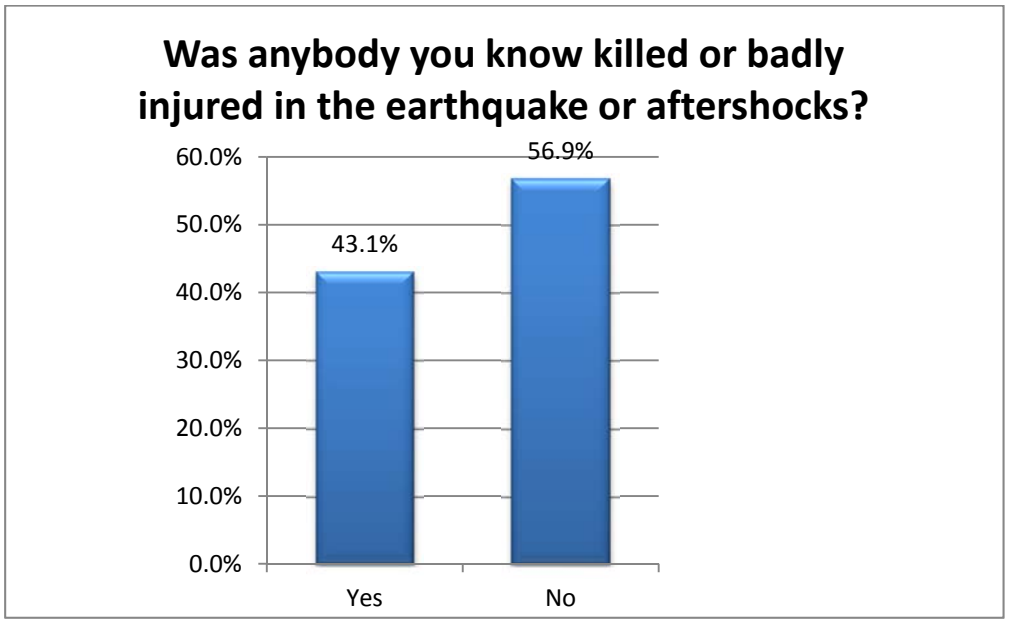
Impact factors

A series of questions were asked of respondent to gauge the degree of impact associated with the earthquakes/aftershocks. These were:

- Was anybody you know killed or badly injured in the earthquakes or aftershocks?
- How badly was your home damaged in the earthquakes / aftershocks?
- How much have you been affected by the ongoing uncertainty about your home/land/insurance claims?

Was anybody you know killed or badly injured

- 65 people responded
- 43% of respondents answered yes (n=23)

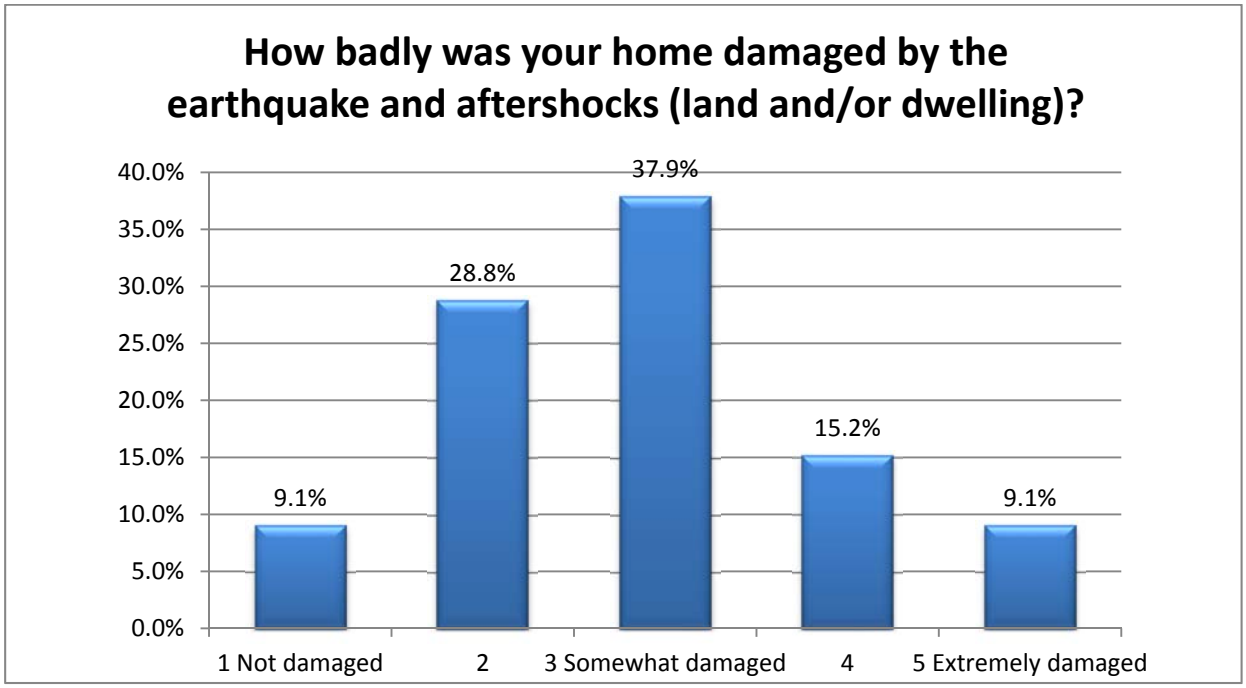


How badly was your home damaged

Respondents were asked to rate on a scale of 1-5 the degree of damage to their home, ranging from 'not damaged' to 'extremely damaged'.

- 66 people responded
- The most commonly selected response was 'somewhat damaged', at mid-point on the scale (38%; n=25)

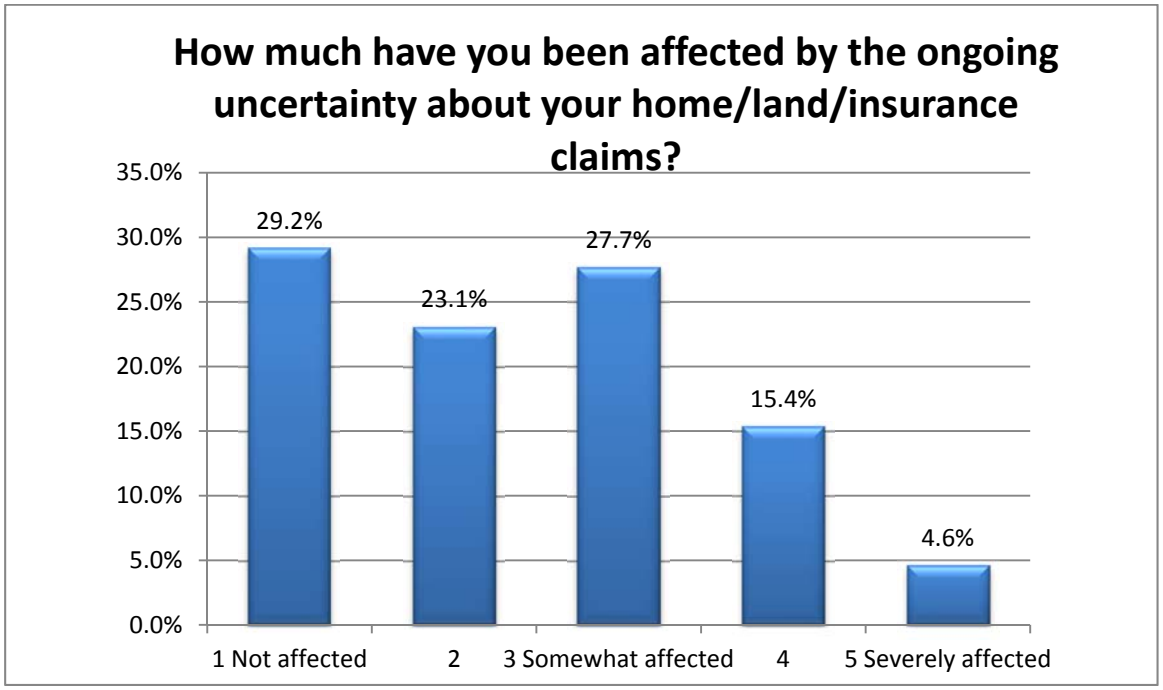
- Overall, 91% of respondents identified some degree of damage to their home with only 9% (n=6) noting no damage
- 62% (n=41) identified between 'somewhat' and 'extremely damaged'



How much affect from uncertainty with insurance claims

A further 1-5 rating scale was used to address this question, with response options ranging from 'not affected' to 'severely affected'.

1. 65 people responded
2. 19 identified that they were 'not affected' (29%)
3. 31 rated the impact between 3-5 on the scale ('somewhat affected' to 'extremely affected')

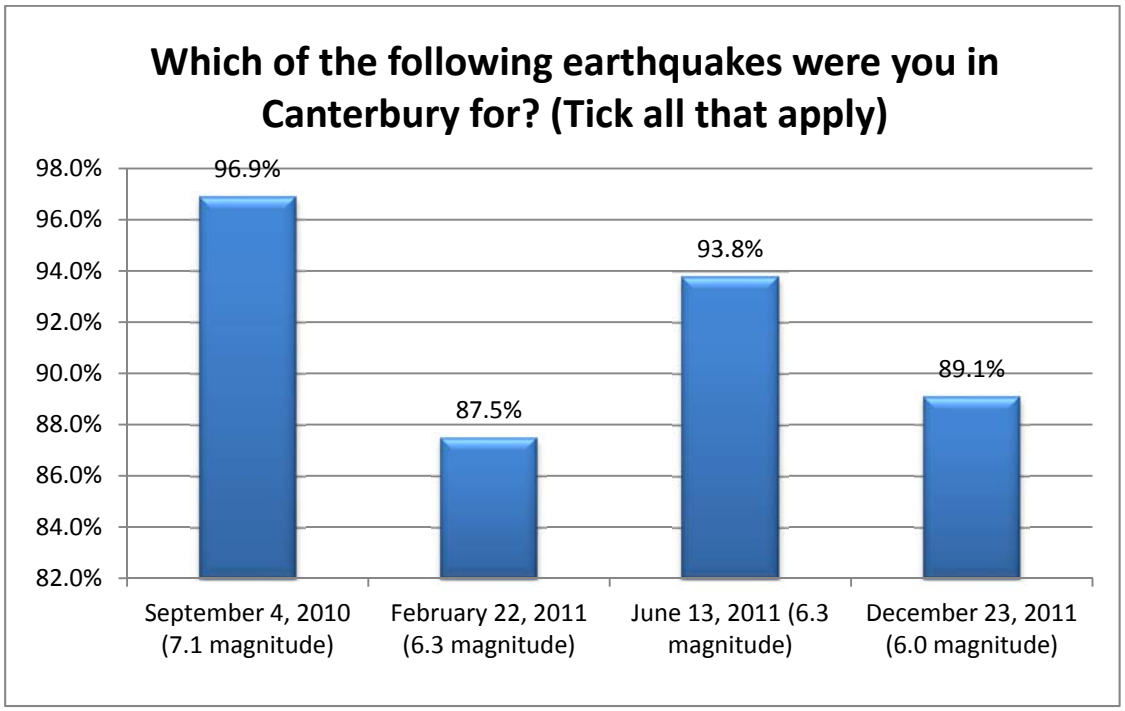


Exposure to the major earthquakes

Respondents were asked whether they were present in Christchurch for the four major earthquakes, those of :

- September 4, 2010 (7.1 magnitude)
- February 22, 2011 (6.3 magnitude)
- June 13, 2011 (6.3 magnitude)
- December 23, 2011 (6.0 magnitude)

The majority of participants were present for each event, ranging from 88-97% presence.



Impact on work

Respondents were asked to consider the impact of the earthquakes and aftershocks at two points – what this was for them 'at worst' – which was individual to each participant rather than a designated point of time; and what the impact was for them was 'currently', at the time of completing the survey. 59 participants responded to these questions.

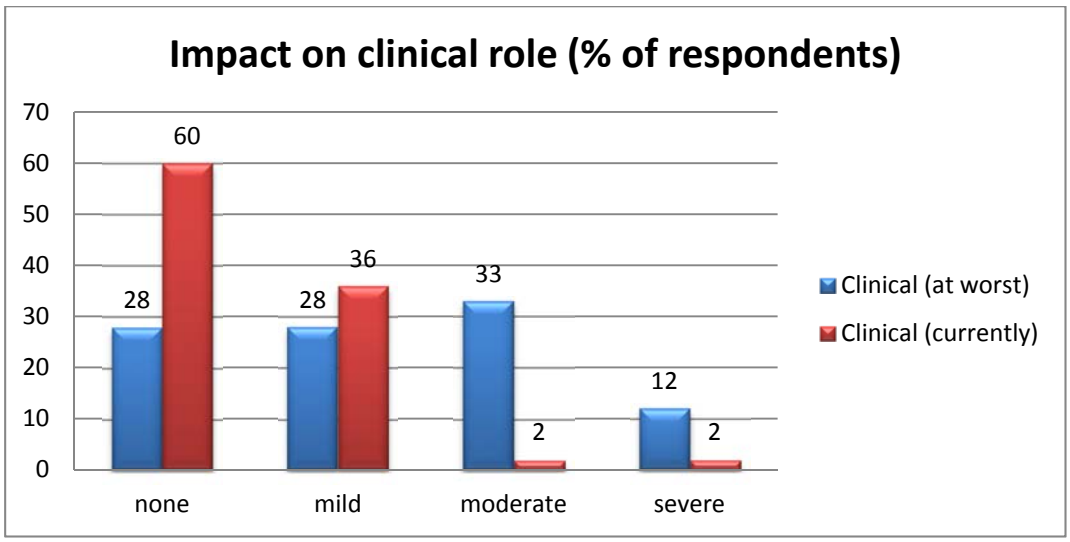
The question was applied to four key domains, designated as clinical, teaching, research and administration. Numbers of respondents varied in relation to each of these, which is likely to reflect the differing roles individual respondents held.

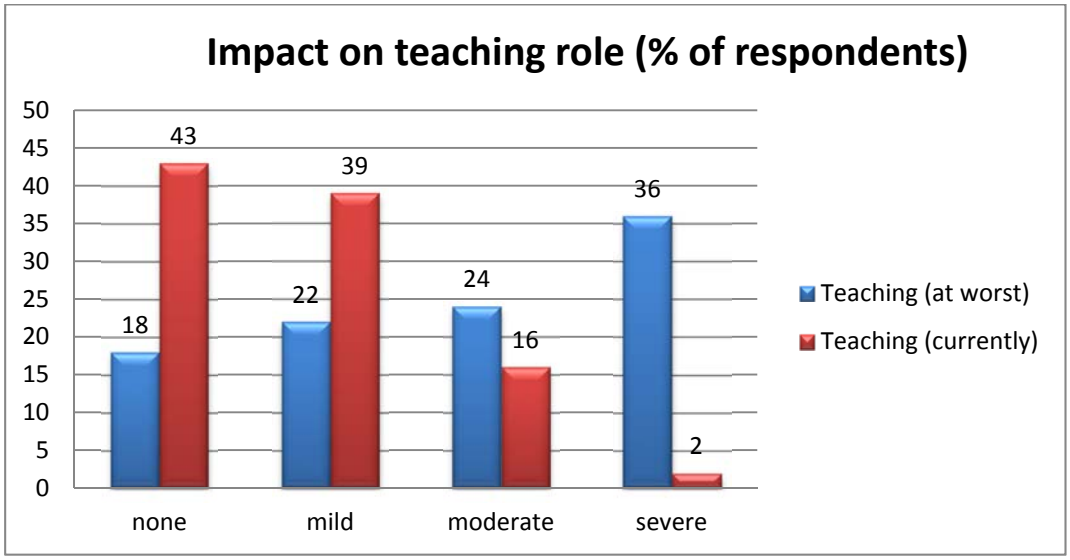
At its worst

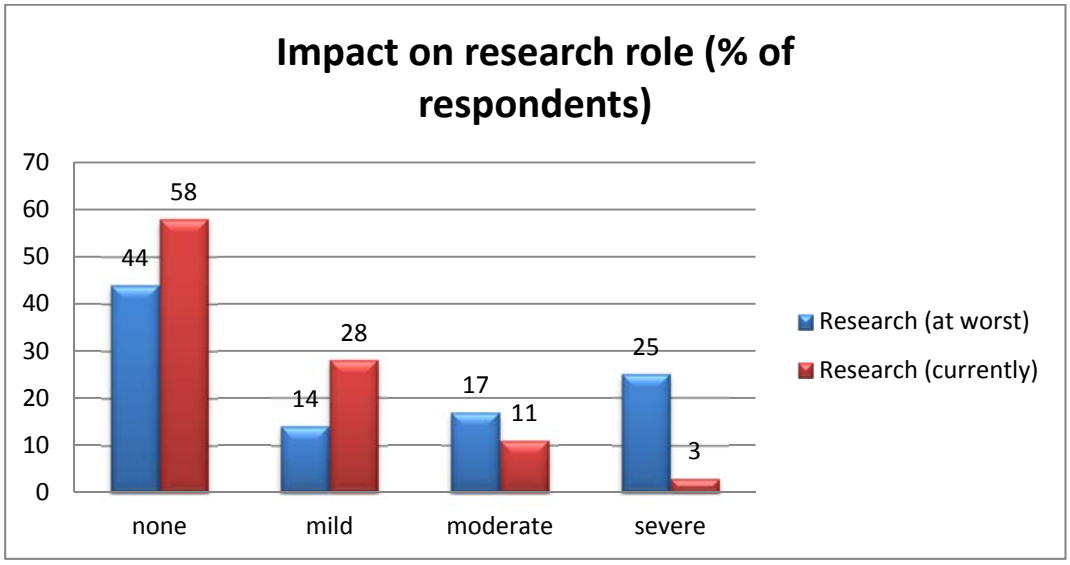
The least affected of the four domains at the worst point was that of research, with 58% of 36 respondents stating there was either no or mild impact on this activity (n=21)

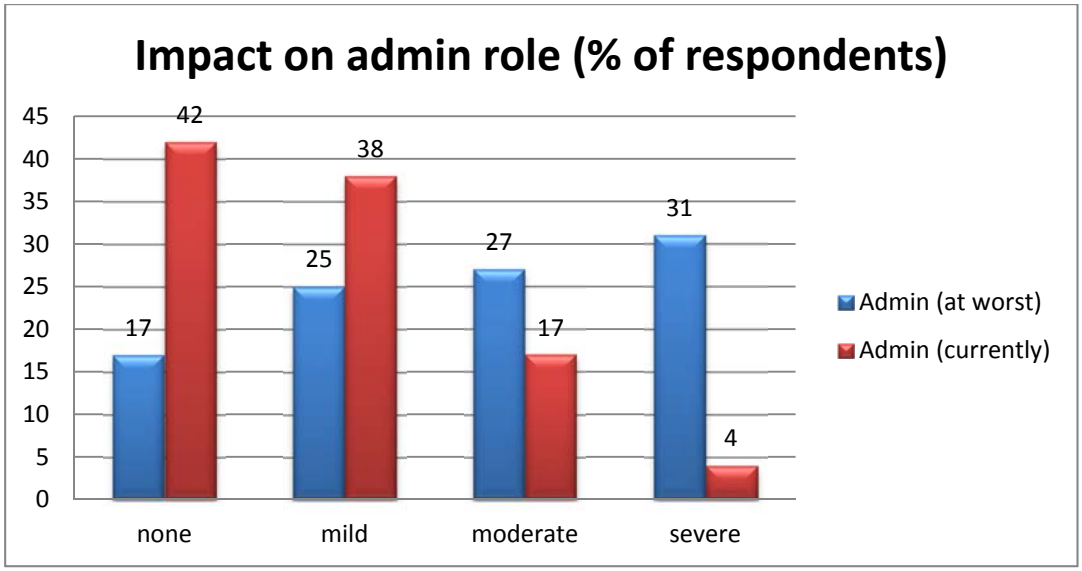
The most severely affected aspect was that of teaching, with 60% of 50 respondents noting this was either moderately or severely impacted (n=30).

In the remaining two categories, 58% (n=28) of the 48 respondents identified that there had been a moderate or severe impact on administrative work, while 44% (n=19) of 43 respondents experienced moderate or severe impact on clinical work.





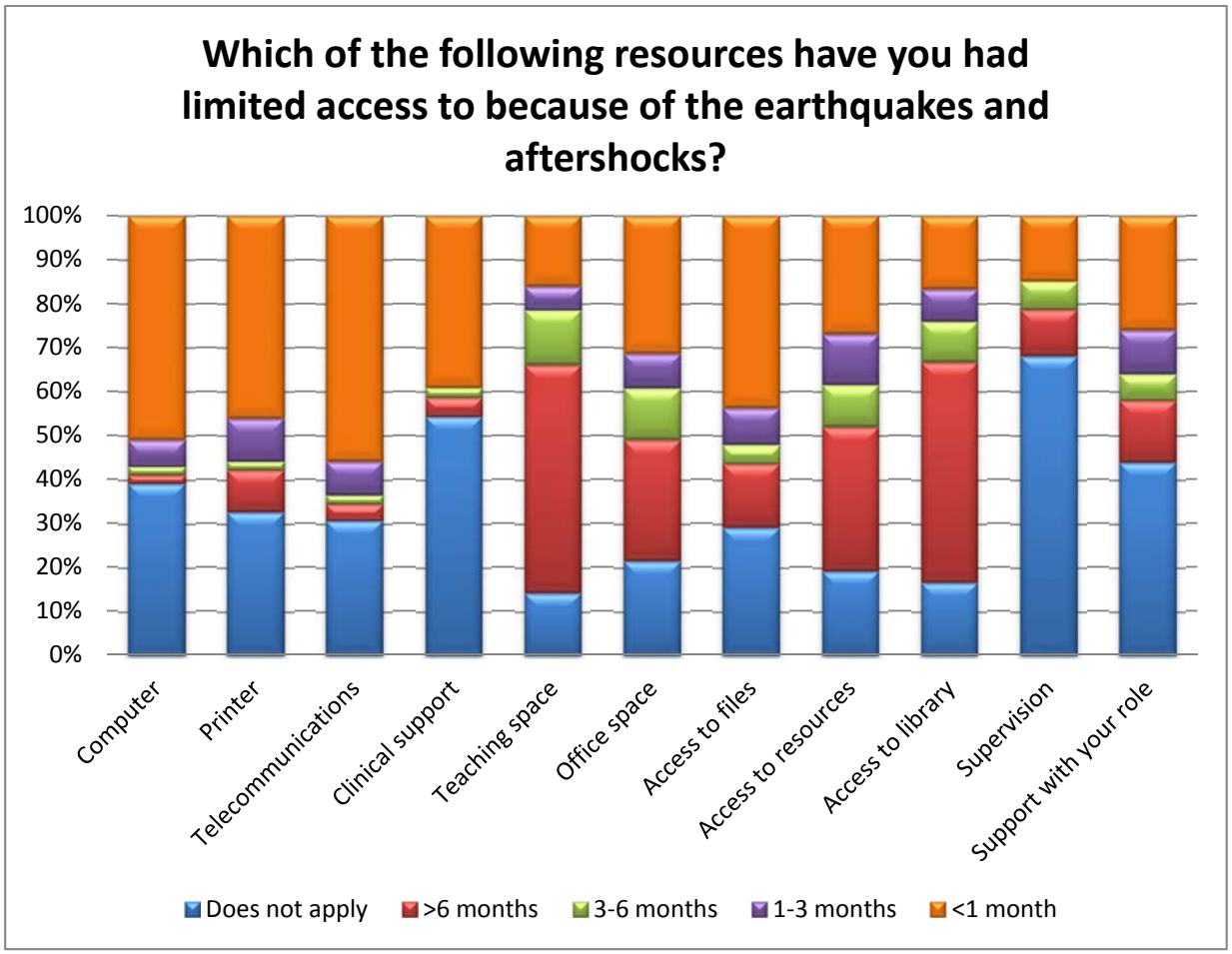




Improvements were seen across all parameters between the 'worst' and 'current' time periods.

Access to resources

Participants were also asked to identify whether there were problems accessing key resources related to their roles, across a series of time points. 58 participants responded to this question.



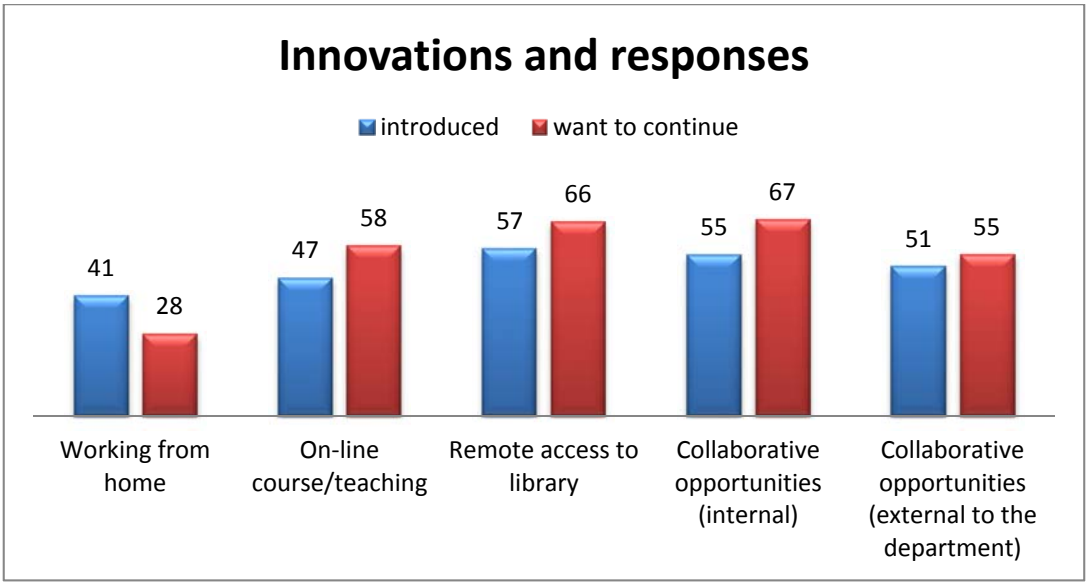
In the initial phase of the response (<1 mth), key components that were difficult to access were primarily telecommunications, computer, printer and access to files. At the 1-3mth period, while these continued to be an issue, they were overtaken by a general limitation on access to resources and limited support with the individual's role. At the 3-6mth point, the focus shifted again, with lack of teaching and office space the highest Rated, followed by concerns around access to library and to general resources. After 6 mths, the concerns continued to focus on lack of teaching space and library access, followed by concern with access to general resources and office space. Across all periods there were a group of respondents who found that consideration of these factors 'did not apply' to their role.

Innovation and response

Respondents were asked to consider a range of innovations that have been identified following disasters, and to identify whether these occurred, and if they did, would they like to see them continue. The options provided were:

- Working from home
- On-line course/teaching
- Remote access to library
- Collaborative opportunities (internal)
- Collaborative opportunities (external to the organisation)

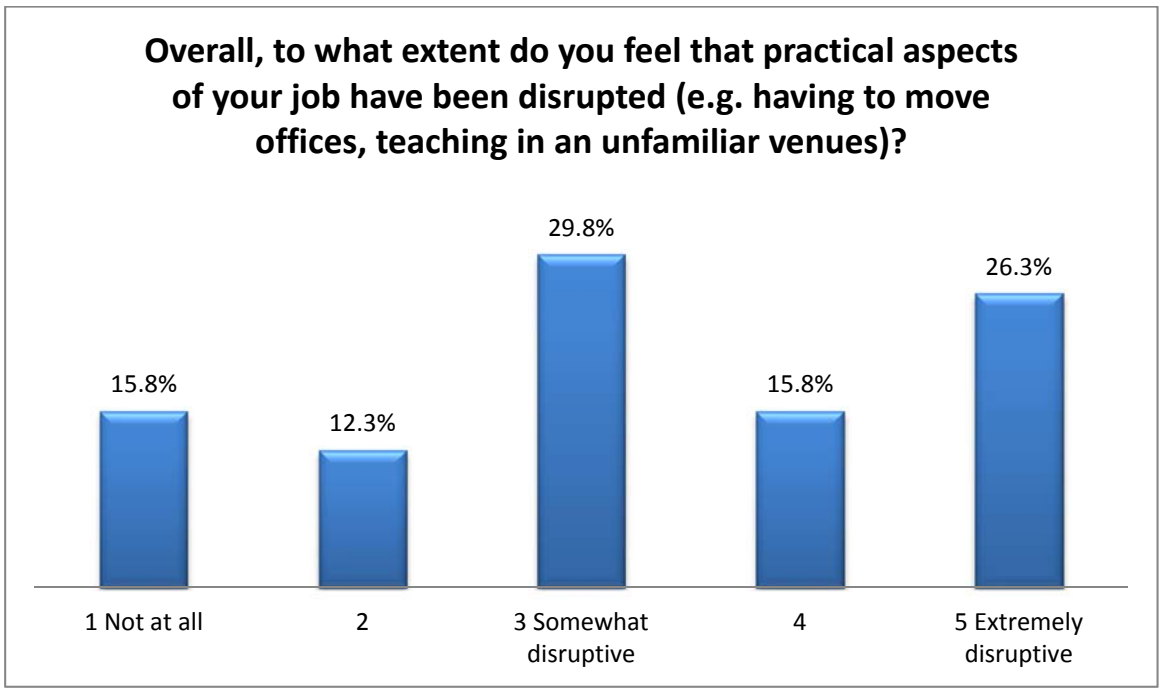
The majority of the innovations / responses introduced in response to the earthquakes were identified by at least 50% of respondents as something they would like to see continue. The exception to this was in relation to the shift for many to working from home; this was noted to have occurred by 41% of respondents, but was only identified as an innovation to be continued by 28%.



Estimate of overall disruption

Individuals were asked to rate the extent of any disruption in regard to the practical aspects of their roles, for example taking into account the need to move offices, relocate, work from unfamiliar environments). 57 responses were received for this question.

Respondents rated the degree of disruption on a five point scale, from 'not at all disruptive' (1) to 'extremely disruptive' (5). The most commonly selected response was 'somewhat disruptive' (n=17); a total of 41 respondents (71%) selected response 3, 4, or 5 indicating from somewhat to extremely disruptive. 26% (n=15) rated the experience 'extremely disruptive'.



Participants were also given the opportunity to describe the type of disruption experienced, with 29 taking the option of describing their experience. Most of the responses related to teaching issues. Comments made related to physical movement from usual workspaces; lack of access to library, difficulty for staff who were also students in their own right;

Examples of staff experiences included:

Teaching

> *…we have had to become creative in the teaching situation due to ongoing challenges re: damage to teaching facilities on site or staff having to use teaching facilities due to losing their offices.*

> *…changing study days to different divisional venues, advertising and contacting people of changes has not always been easy as people had moved also because of the earth quakes. Txting was invaluable. Initially transporting between divisions within central and rural Canty. Carting numerous boxes of resources between teaching sites.*

Teaching & meeting spaces have reduced, have reduced in-service education because of this. Have moved to more online in-service education to open up access for staff…

…trying to demonstrate physical exam techniques using tables as exam beds with no privacy at Addington raceway was no fun, students needed to be exposed for thorough assessment, and learning was compromised quite severely…

Physical dislocation

First 3 months were very disruptive after Feb earthquake. Have moved offices 5 times since Sept 2010. Still not in permanent office, but portacoms are very safe and a good shared working space. They promote better networking and psychological support.

Has been a nightmare. Have lost count of how many times we have physically moved our services. I travel in everyday from Rolleston for work. Having to work from multiple locations, not having a desk or a locker to call my own, walking in all sorts of weathers, including rain and snow, whilst carrying a backpack has not been fun.

Since February 2012 we have had a number of moves, some at very short notice and some where we did not have anywhere to move to which in a practical sense was incredibly disruptive and stressful as the University at times did not seem to help out and it was all down to us to find a new location…

Moved locations first to my house, then to cricket club, then back to office, then back to home, then to apartment building, one room for 9 months

Library

The library moved to the basement of the hospital building, which meant that there was no space for students to study. I work in the evenings at the library, which is mainly open then to allow students to study there. The library then moved to Ward 30, where there is still no study space. This means that the library patronage has dropped from about 10 people a night (studying and getting out/returning books and searching for material) to mostly no patrons.

Is is still very difficult to provide library services and library staff are exhausted with the continual movement between locations and with trying to provide adequate (or better) support to staff and students in the current circumstances. It can be very difficult to maintain communication with all groups and to ensure that people and their needs aren't slipping through the cracks…

Working at the Riccarton Cricket Club has been challenging too, with minmal heating all last winter (a heatpump has now been installed, and has made quite a difference), and during the cricket season, having to pack up all our work and computers each night, and unpack each morning results in a lost 45-50 minutes of work

Impact of on-going difficulties and role maintenance

How have the earthquake, aftershocks, and on-going difficulties affected your role?					
Answer Options	**Strongly agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Response Count**
I have less time to spend on my work role	7 (12%)	10 (14%)	25 (43%)	16 (28%)	58
Home/personal obligations have impacted on my ability to fulfil my role	1 (2%)	15 (26%)	25 (49%)	16 (28%)	57
Overall, there has been an impact on my role	10 (17%)	30 (52%)	10 (17%)	8 (14%)	58
My expectations of students have changed following the earthquakes and aftershocks	5 (9%)	29 (53%)	16 (30%)	5 (9%)	55
I have tried to keep students informed of any changes to their timetable	17 (33%)	31 (61%)	1 (2%)	2 (4%)	51
The way in which the course is being delivered has changed	13 (25%)	22 (42%)	13 (25%)	5 (9%)	53
The quality in performance of my role has been affected	3 (6%)	16 (29%)	25 (46%)	11 (20%)	55
My accessibility and responsiveness to students has been affected	2 (4%)	13 (23%)	32 (58%)	9 (17%)	56
The quality of experience I provide in my role has been affected	2 (4%)	19 (35%)	23 (42%)	11 (20%)	55

Respondents were asked to consider a 4 point scale indicating levels of agreement / disagreement with a number of statements in relation to their role.

Those statements which received more than 50% agreement (either agree or strongly agree) are listed below:

- Overall, there has been an impact on my role (69% agreement)
- My expectations of students have changed following the earthquakes and aftershocks (62% agreement)
- I have tried to keep students informed of any changes to their timetable (94% agreement)
- The way in which the course is being delivered has changed (67% agreement)

27 respondents provided additional free text response to this question, identifying problems associated with their role following the earthquakes.

Lack of control

…meetings with student when you don't have access to files, noise from demolitions beside your building all disrupt the experience for students, and are outside our control…

It was difficult to facilitate an online course with limited computer access and the stress of ongoing quakes during work and home life, yet my role was to keep the course going for the other students enrolled across the country

I used to have duties to carry out at the library, but due to the limited space and access to files, and the disruption to the full time library staff, I have not had duties since the February earthquake. This has made me feel my job is redundant

Additional responsibilities / stepping up

I have continued to offer the same level of service and education opportunities with extra effort on my part, - my ability in my role has not been affected

…took on a double role of acting manager and also continuing my educators role. no extra assistance was provided…

... performance quality has been affected for the better in that the high esteem I already held the younger generation in surged as their response to the EQs has been magnificent.

Reduced capacity

Lots more time spent doing the basics, phone/printer/computer, communication, so less time able to develop research, update website, ability manage anything beyond basics is reduced

Being deployed elsewhere meant that a very new team had to cover my role for a significant period of time. The quality of experience I provide in my role has been somewhat affected in that a number of areas became neglected due to the greater need of the earthquake response. Things such as programme evaluation, quality plan, research, etc have decreased

The main impacts on my role is working in different places has created uncertainty for patrons locating the library and communication with colleagues about processing issues when we are at different sites or have a five minute changeover

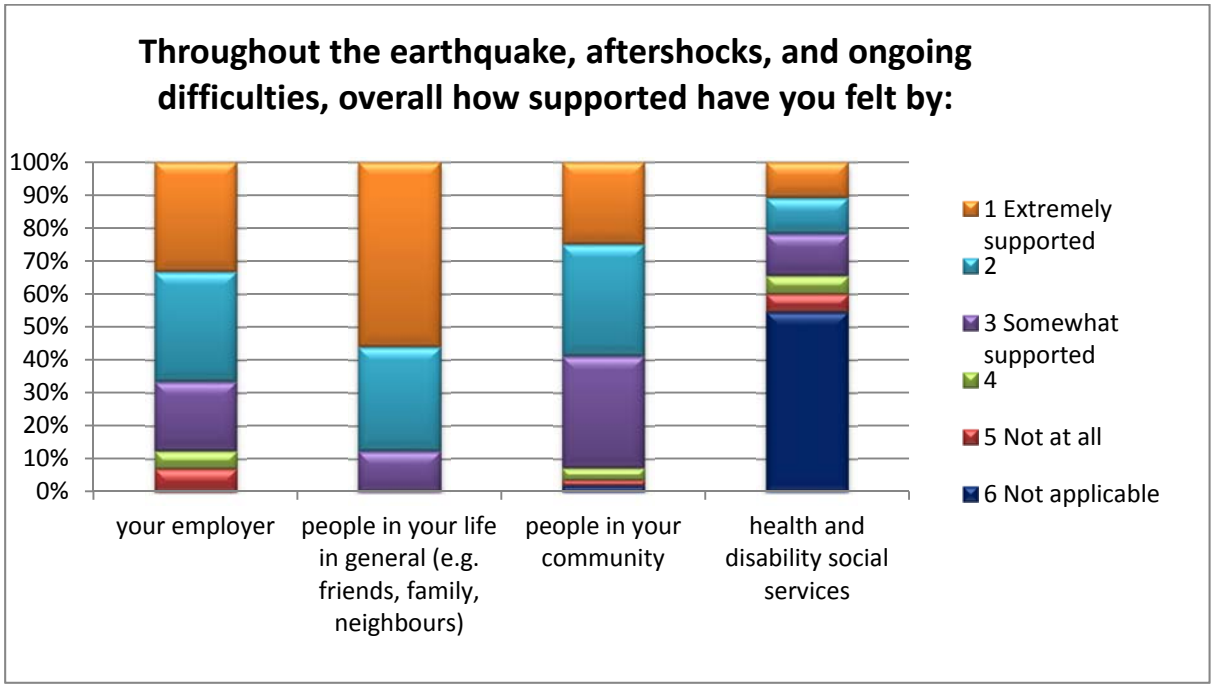
I find myself becoming very anxious after significant events. It is very hard to concentrate and I think this has occasionally affected my teaching abilities through not being able to think as clearly as I would normally

Higher workload - less time for supporting learners and follow up

…the quality of my own performance has been affected in response to my own emotional response to the earthquakes but this is improving…

Perceptions of support

Respondents were asked to rate the level of support they felt they had received from their employer, people in their life (family, friends etc), their community, and health and disability services.



The source most often described as 'extremely supportive' was that of family, friends, neighbours.

Participants also had the opportunity to identify any other sources of support, with 15 responses being received. Other sources included:

- Colleagues
- Voluntary services (eg Red Cross,
- Counselling services
- Professional bodies (eg Nursing Council)
- Church groups

Several participants used this section to identify a perceived lack of support, for example:

> *I have not felt greatly supported by the hospital managers. While they did offer quake leave initially, I felt a lack of concern, empathy and appreciation…*

And others had conflicting experiences:

> *I was extremely grateful and impressed when a representative from the University's Health and Safety team rang me at home after the February earthquake, to see how I was doing*

> *I was very surprised of the lack of response and support by the University to staff in Christchurch. At no time after any of the earthquakes (especially September or February in particular) did I receive an email or phone call from HR or contacts here in Christchurch to check if I was ok or I needed help with anything…*

Opportunities for Employer Support

Participants were asked to consider whether there were any additional actions that their employers could take which would support them in continuing at work.

38 Responses to this question were received. As respondents worked for the university, the DHB and for some both of these organisations, it is not possible to separate out specific employers unless identified in the statements given.

Potential options

Actions that were identified included:

- Acknowledgement of the impact of closed childcare services
- Provide roving IT support for staff working from home
- Put EQ leave in place earlier
- Improved communication
- Provide de-briefing opportunities
- Provide additional psychological support
- Thanking staff
- More resource to match increased workload
- Make contact early to check on well being
- University to be more involved in identifying additional venues
- More car parking facilities

For some, there were no additional actions identified as necessary:

> *I think CDHB has been very supportive considering we have all had to keep going and keep the health services functioning*
>
> *No more than what was done under extremely difficult and challenging situations for any employer, let alone an employer responsible for provision of health services across a critically damaged city & essential infrastructure*
>
> *Not sure anything else could be done. There is a need for on-going support of staff for sometime to come*
>
> *Don't believe that more could have been done! Had good communication daily, alternative accommodation was found eventually (sometimes we weren't a priority compared to clinical staff). Within our team we managed the stress, the lack of office facilities and supported each other as best we could*

A number of comments related to physical space, whether, teaching or office facilities:

> *Although the first 3 months I would expect to have to fend for ourselves, after that point the University should have been more active in getting space sorted*
>
> *Hard to say; because of the lack of suitable premises close to the hospital, I think the University has had a very tough time trying to accommodate displaced staff*

The impact of not having access to our building, computer labs, and training facilities is huge.

Secure appropriate and long term accommodation. Individual depts had to play a major role in this, the majority of people had to work from home and contracts were temporary, necessitating several moves

Identifying what helped

42 people provided responses to the question asking what aspects helped the participant to do their job, following the earthquakes.

Family

…explaining commitment to workplace to family, planning for family safety in my absence…

One thing that had a huge impact, and came thru when we got our study days up and running again, and people were talking about everything, was the positive messages constantly coming through ie: check on your families first, and if ok, come back to work...it gave people permission to all do what they needed to do most, and because of that they all felt valued and could either check families or stay at work

My husband and son have both reacted fairly pragmatically to all the quakes, with the attitude that life and work goes on. This has kept me going along with the recognition that I enjoy my job, I want to continue working, and my work itself provides some 'normality' to life.

Peers/colleagues

The hard work of our department administrators to communicate changes, find accommodation. etc. the option by employer to work at home

Support of colleagues and managers

Within our team we managed the stress, the lack of office facilities and supported each other as best we could. The ongoing support and flexibility (e.g. working from home, taking time off to get house inspections from EQC, not pressuring me too much to complete tasks) of my manager has really helped me do my job to the best of my ability.

Communication

Talking to other staff about difficulties to try and find solutions. Think more creatively with others outside my profession to look at better ways of doing things

the thing that had the most impact was the CDHB intranet/website. The CEO and EOC daily/weekly emails were invaluable. They were constantly reassuring, and reminding us of the whole of system/safety approach

Maintaining a clear focus

Maintaining a clear focus and perspective…

Not having my immediate working area disrupted. Not having 'extra' projects expected of us

IT support

there is the way the IT staff have set things up to ensure that we have access to our computers in a variety of ways, as required

Direct Internet access to the UOC network in Riverside! It's fantastic

VPN access to my computer at home has been invaluable

There were a number of additional factors that people identified, including

the collective understanding of our experience; awareness of my fragility; ensuring i manage my life in a loving way; feeling 'lucky' that my situation is minor compared with others' and i can manage it;

Identifying what hindered

43 responses to this question were recorded. Factors identified included:

- physical and psychological stresses
- constant change in venues
- on-going repair work
- shared facilities
- noise
- Increased workload
- Limited access / resources
- Having to arrange resources/relocation without support
- Crowding
- Limited library facilities
- Limited computer access
- Not wanting to work in multi-story buildings
- Staff shortage / absence

Comments made included:

Stress, sleeplessness, family injury, illness and grief of killed friends

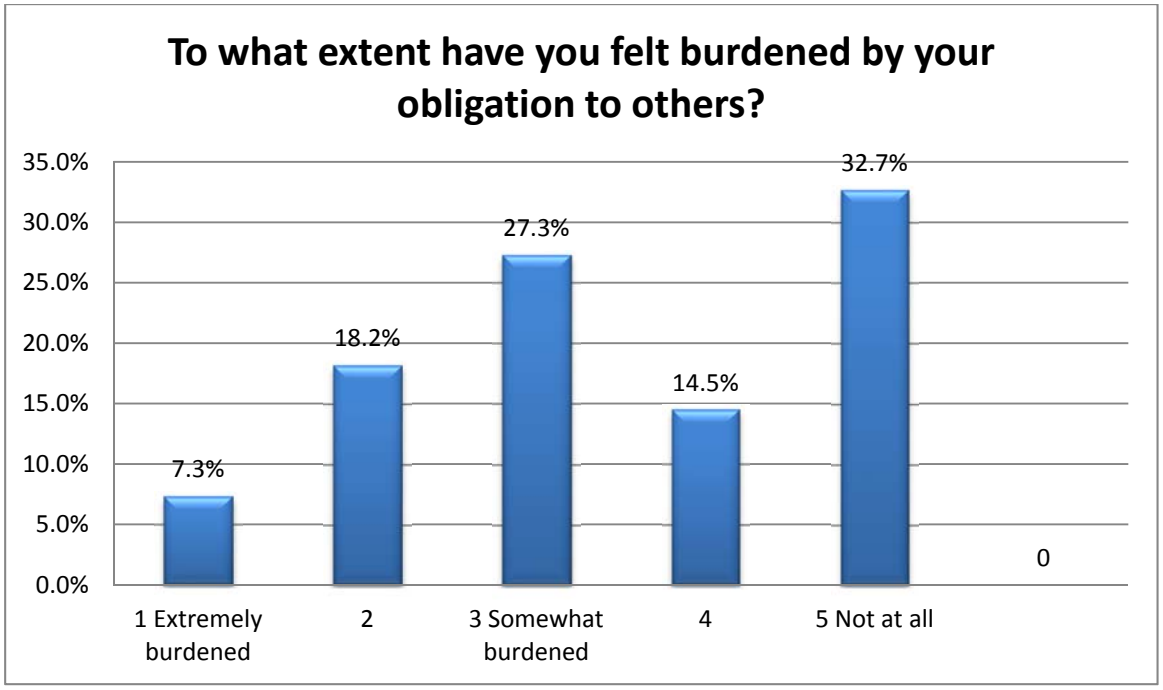
Anxiety. It is better now, but some days I could not concentrate and had to fight the urge to get out of the building

Massively increased workload and no additional resource

Having to sort resources ourselves; phone, printer, computer, space; we've done it all ourselves

Sense of obligation

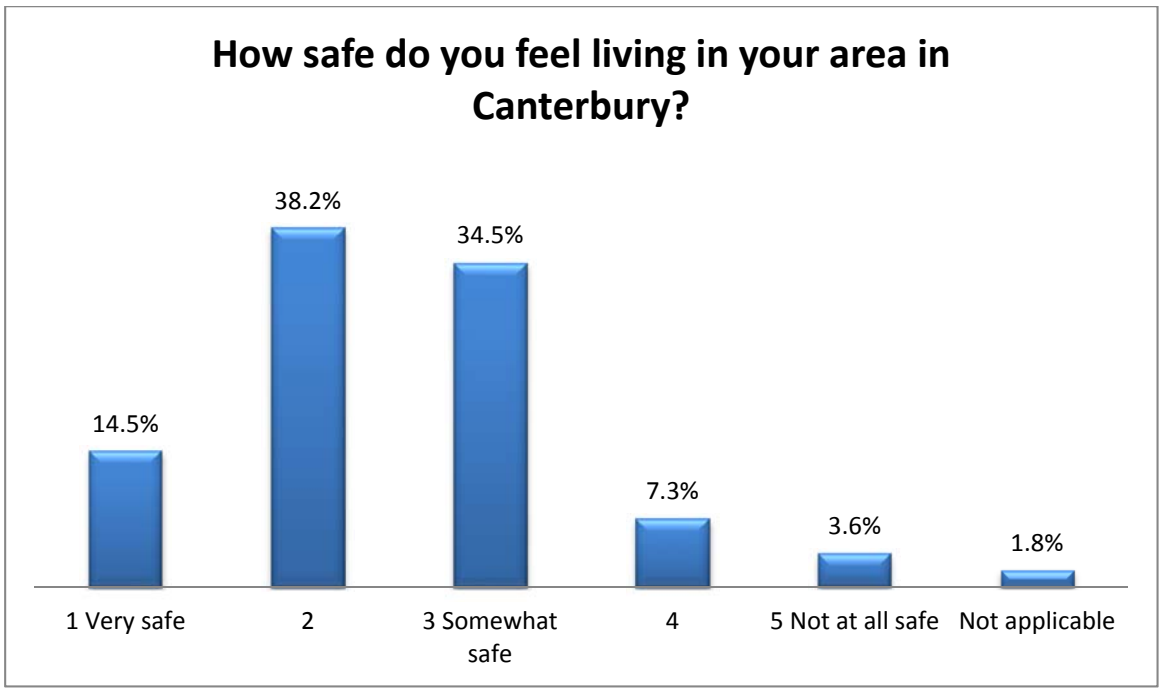
Participants were also asked whether they felt burdened by their obligation to others. The majority of respondents identified that they felt no sense of burden (33%, n=18); however 53% (n=29) identified feeling 'somewhat' to 'extremely' burdened.



Safety living in Canterbury

Participants were asked to rate how safe they felt living in Canterbury following the earthquake events, using a 1-5 scale (1 being 'very safe', 5 'not at all' safe). 55 responses were received.

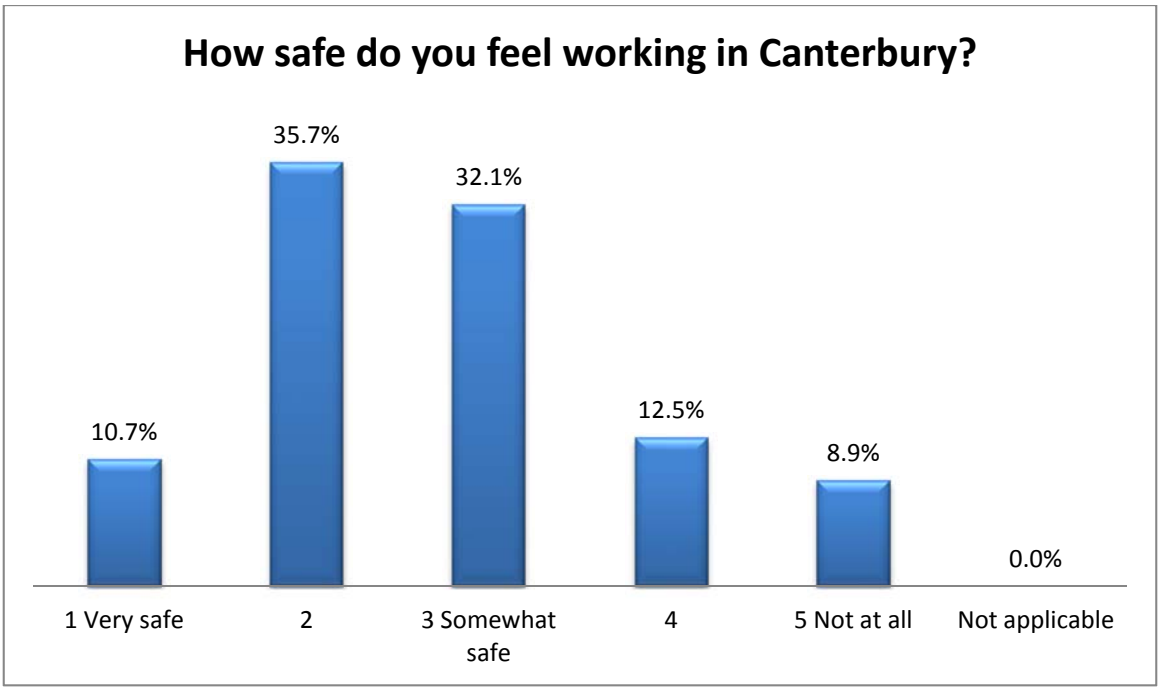
The majority of respondents indicated that they felt between 'somewhat' and 'very' safe (87%, n=48)



Safety working in Canterbury

Participants were asked to rate how safe they felt workng in Canterbury following the earthquake events, using a 1-5 scale (1 being 'very safe', 5 'not at all' safe). 56 responses were received.

The majority of respondents indicated that they felt between 'somewhat' and 'very' safe (78%, n=44)



Intention to remain in Canterbury

56 people responded to this question. 79% (n=44) indicated that they planned to remain in Canterbury, while 16% (n=9) were uncertain and 5% (n=3) were intending to leave.

Health and wellbeing

Physical health issues

55 responses were received; of these, 43 (78%) identified that they had no physical health issues prior to the earthquakes. Following the earthquakes, the number who identified physical health issues rose from 22% (n=12) to 35% (n=19). Comments made in relation to these questions indicated that while some of these were in relation to the same issues as pre earthquake, others were new.

> *RSI got much worse due to office set up*
>
> *Shoulder injury from carrying around a heavy backpack and sitting long hours at unsuitable non-ergonomic desk.*

Mental health issues

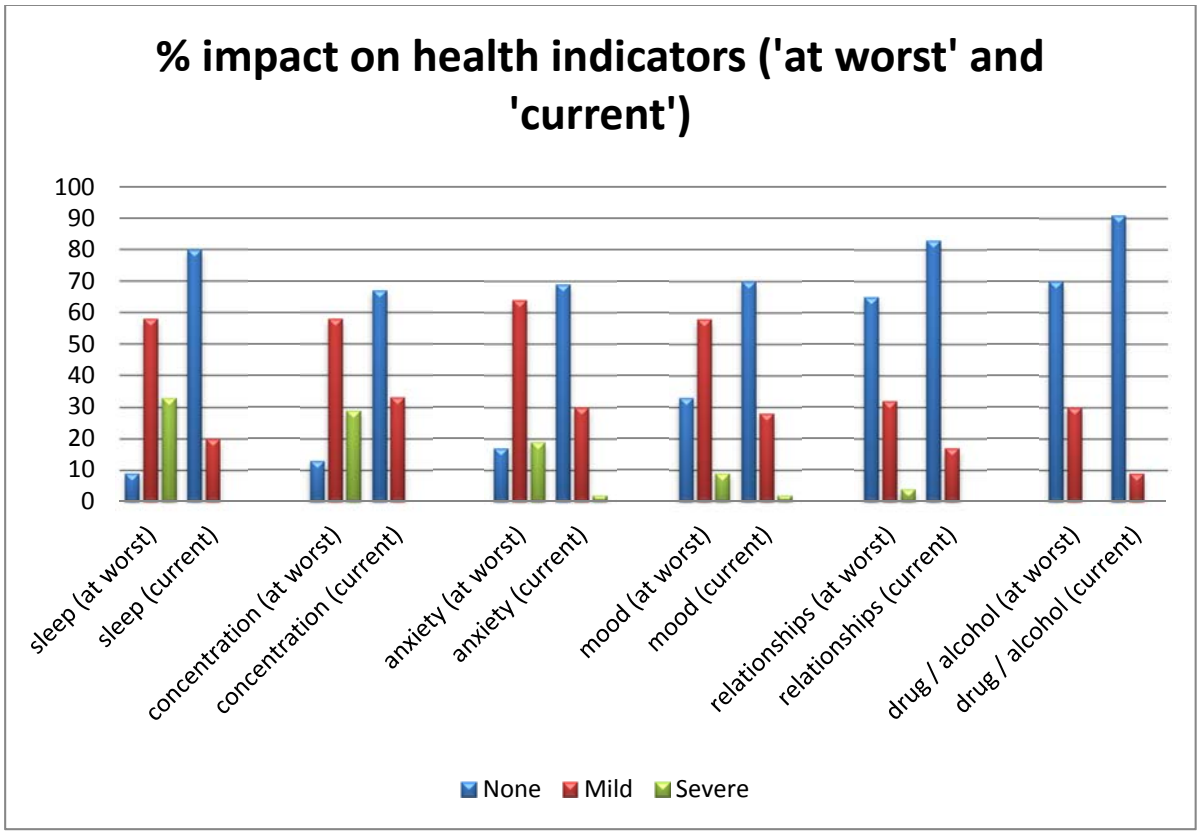
55 responses were received; of these, 47 (86%) identified that they had no mental health issues prior to the earthquakes. Following the earthquakes, the number who identified mental health issues rose from 15% (n=8) to 22% (n=12).

Experiences 'at worst'

Respondents were asked about the impact of the earthquakes on sleep, concentration, anxiety, mood, relationships, drugs/alcohol over two time periods – 'at worst' and 'currently'.

Between 53 and 55 individuals responded to the specific sections in this question.

- Sleep was identified by 91% (n=50) of respondents as having been impacted to either a moderate or severe degree at 'worst', with this dropping to 20% (n=11) when considered 'currently'
- Concentration was identified by 87% (n=48) as having been impacted to either a moderate or severe degree at 'worst', with this dropping to 33% (n=18) when considered 'currently'
- Anxiety was identified by 83% (n=44) of respondents as having been impacted to either a moderate or severe degree at 'worst', with this dropping to 40% (n=17) when considered 'currently'
- Mood was identified by 67% (n=37) of respondents as having been impacted to either a moderate or severe degree at 'worst', with this dropping to 30% (n=16) when considered 'currently'
- Relationships were identified by 35% (n=19) of respondents as having been impacted to either a moderate or severe degree at 'worst', with this dropping to 17% (n=9) when considered 'currently'
- Drugs / alcohol were identified by 30% (n=16) of respondents as having been impacted to either a moderate or severe degree at 'worst', with this dropping to 9% (n=5) when considered 'currently'



Positive outcomes

Participants were also asked to consider whether there had been any positive outcomes associated with the earthquake experiences – 54 people responded to this question, with 78% (n=42) replying in the affirmative.

Examples provided of positive aspects included both tangible and intangible factors. These could be further considered in terms of individual and community outcomes.

Tangible outcomes

Participants talked about the practical, physical improvements that could result, usually in terms of rebuilding and repairs. Comments were also made about lessons learnt, new systems developed, and greater awareness / preparation to deal with the unexpected.

Personal

New house in a new town and a new clinical role

New wall and fireplace in our house - much warmer now!

We hope to be able to build in the future so a brand new house has to be a positive, even though the experiences that this has come about through wouldn't be what we would have chosen!

Community / systems

I also learnt that communication is the key to everything, and that we needed to have good communiction lines (ie txting, emails, websites) available. That head lamps are invaluable…

Has moved the initiation and development of online learning forward

Following tragedy we now have the chance to create the vibrant city centre we should always have had

more innovation for health care in the community reducing the expectation that health care needs to be provided in tertiary facilities

Intangible outcomes

Respondents identified a range of emotions, responses, feelings and reactions that were perceived to have a positive aspect as a result of these experiences. Many of these related to interpersonal relationships, increased awareness and appreciation of aspects of their life, re-prioritisation , improved communication and recognition of inner strength .

Personal

reprioritizing life goals. as life is tenuous material things appear less important

Perspective on what is important in life - i.e. family, friends. Nothing is permanent, possessions are meaningless

It has affirmed the importance of making the most of every day

Being more connected with friends and family. Greater network of friends and getting on with all those things I had put off. Brought our immediate family much closer together

Community

A "connection" with others who have been through the same experience increasing the sense of support and community spirit

Strong relationships built across professions and across the health sector.

moving department allowed us to focus on what is the ongong vision, I had a chance to work in a management role, i realised how life needs to be lived

Following tragedy we now have the chance to create the vibrant city centre we should always have had. I believe this would be the best tribute to all the victims of the earthquakes

Specific problem areas