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Understanding the post disaster effects on mothers after the 2010 and 2011 Christchurch earthquakes in New Zealand

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Angelina Jennings
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Abstract

The city of Christchurch in the South Island of New Zealand experienced two large earthquakes in September 2010 and February 2011. The most destructive of these earthquakes was in February which resulted in 185 casualties. The purpose of this study was to explore the post disaster experiences of mothers and consider factors which helped or hindered their recovery. A qualitative study was utilised in order to understand the post disaster experiences of mothers and their coping resources. Data was collected via semi-structured interviews with six mothers, using open-ended questions, which focused on personal, environmental and psychological impacts of the earthquakes to understand their experience. Topics included the immediate experience of the event, factors which impacted on their recovery, their community experience and roles in the wider recovery effort. Data was analysed using thematic analysis. Key findings were established from themes within the research which underpinned experiences for mothers; these included care of children, the importance of social networks, the role of the community and mothers' evolving role in the wider recovery effort. Core characteristics of resilience, such as adaptability, flexibility, optimism and coping skills, were portrayed by participants, which became paramount in supporting their post disaster recovery. These findings underpinned practice approaches for social workers when working with mothers post disaster and highlighted the significance of the social workers' role in promoting the involvement of women within their community and in future disaster management planning and discussions.

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Chapter 1: Introduction

Background of the study

The purpose of this study was to explore the post disaster experiences of mothers during the Christchurch earthquakes in September 2010 and February 2011. Natural disasters are events, which are caused by the physical environment and that happen by chance from forces over which we have no control (Lopez-Ibor, Christodoulou, Maj, Sartorius, & Okasha, 2005). They are potentially traumatic events which have a sudden onset and are collectively experienced (McFarlane & Norris, 2006). Although disaster forecasting has improved in recent times, many disasters remain unforeseen catching populations off guard and subsequently have widespread consequences (Norris & Wind, 2009). Media reporting indicates that natural disasters i.e. floods, earthquakes, landslides and even volcanic eruptions are becoming more common and various studies have been completed on the levels of public awareness, preparedness and perception of national hazards (Gawith, 2011; McFarlane & Norris, 2006; McManus, 2015).

On Saturday, the 4th of September 2010 at 4.35am, Canterbury residents were woken by a 7.1 magnitude earthquake. Although there was no loss of life, significant damage was caused to property, the environment and to individual wellbeing (Cooper-Cabell, 2013). Subsequent minor aftershocks caused further damage and affected people's ability to recover. On Tuesday, 22nd of February 2011 at 12.51pm, a further earthquake struck which resulted in over 185 deaths and over 7000 injuries (Paton, Selway & Mamula-Seadon, 2013). Major damage was sustained within Christchurch and surrounding areas.

New Zealand has suffered several natural disasters over the last century; however, the earthquake in Christchurch in 2011 was deemed its worst in over 70 years (McSaveney, 2012). On 3 of February 1931, New Zealand's deadliest earthquake devastated the cities of Napier and Hastings in Hawke's Bay. At least 256 people died in the magnitude 7.8 earthquake and thousands more required medical treatment (McSaveney, 2012). At the time people had to wait days for assistance, in contrast to the Christchurch earthquakes when assistance was there in minutes. Following this event, women were not encouraged to be part of the recovery effort and were sent away for their own safety. Many refugee camps sprang

up in several North Island towns to accommodate women and children (McSaveney, 2012). In contrast, able-bodied men were expected to stay in the disaster zone to provide labour for search, demolition and clean-up efforts (Ariyabandu, 2009; McSaveney, 2012).

The research described in this thesis was significant as it explored the strengths and capabilities of mothers in contrast to traditional views of women as vulnerable and requiring support post disaster (McSaveney, 2012). This view is supported by research completed after 1931 which focused not only on men's involvement in post disaster recovery but also considered the role of women in terms of their capacity and ability to support the wider recovery effort (Ariyabandu, 2009; Enarson, 2009; Horton, 2012). The emerging strengths and capabilities of women and the evolving gendered division of labour post disaster has informed the research that follows in terms of understanding the post disaster experiences of Christchurch mothers.

Research goals and objectives

The research involved using a qualitative approach, comprising of semi-structured interviews with six mothers exploring their personal experiences during both earthquakes. The study intended to enable mothers to narrate processes, activities and factors that influenced their experience of the Christchurch earthquakes. Topics included: physical experiences, support networks, mothering roles, community support, overall wellbeing, relationships, future planning, and preparedness for future events. The importance of the context of community was also explored throughout this research and the impact of changing communities on mothers' recovery. Selected themes were analysed thematically using materials from the interviews and comparisons made with relevant literature and research material (Braun & Clarke, 2006).

Rationale for the research

The study was underpinned by a background of growing interest in the concept of resilience and the emerging significance of this concept in contributing to recovery from natural disasters. As far as the researcher can determine there are no existing studies to date about mothers' experiences of the Christchurch earthquakes which are explored through the lens of resilience. This research is in context with recent literature relating to the importance of communities and individuals embodying the characteristics of resilience in order to be

successful in their recovery efforts (Phibbs, Good, Severinsen, Woodbury & Williamson, 2015).

Positioning of the researcher

I would consider this research to be an insider piece of research because of my own experiences of the Christchurch earthquakes. On 4th September 2010 at 0435am I was in Wellington with my sister on a weekend away. At 0445 my phone began ringing. I ignored it at first from my deep slumber but the continuation of the phone ringing woke me further. When I answered, the call was from my husband saying there had been a massive earthquake in Christchurch. Unfamiliar with earthquakes and their size it meant nothing to me when my husband said it was a 7.1 magnitude. I only began to appreciate the seriousness of the event when I heard my sister in law in the background with her husband. I was really worried about my two children but once I knew they were safe I felt calmer. The day was a haze with overheard pieces of conversations about the events in Christchurch and the devastation that occurred. The aftershocks that followed were frightening and many times during the night we would find ourselves racing for the children and hovering under a doorway. In the months afterwards the city was damaged and there was no other topic of conversation than the earthquakes, however people gradually returned to normal and continued in their routines as far as they could with broken homes and closed facilities. The second earthquake happened on 22nd February 2011 was much more widely felt for me and my children. My sister, my children and I were in the car and stared at each other and clutched each other's hands as the car rocked and shuddered violently for what seemed like an age. At the end we all made it back home and to witness a broken driveway, house and broken furniture scattered everywhere.

As an inhabitant of Christchurch and a mother myself at the time of the earthquakes I thought it was important to explore how other mothers experienced the earthquakes. I am an 'insider' with participants of this research, as I am of a similar age, a mother and of European descent and experienced both earthquakes. Insider status offers many advantages to qualitative research, and particularly research positioned within a participatory or emancipatory paradigm (Bonner & Tolhurst, 2002; Breen, 2007). These advantages include ease of access to the field or participants; expediency of building rapport; responsible data collection, taking into consideration community norms and values; and richness in the interpretation of the data in view of knowledge of the social, political, and historical context (Ross, 2017). Discussions

with participants helped me to reframe my own experience and I could connect with and reflect upon my own experiences when reading literature about women's post disaster experiences. This allowed me to relate well to my participants and have a better appreciation of the experiences they described. However, I was conscious to ensure I did not over identify with their experiences and assume we had a shared understanding or feelings about the earthquakes. This concept is discussed by Ross (2017) in his study on insider research when he states, presumptions of the researcher or participant, that there are shared understandings of important concepts may curtail their explicit discussion. Also, the nature of pre-existing relationships between researcher and participant may make discussions of key topics risky or uncomfortable. I discussed any concerns regarding emerging personal conflicts or challenging emotions brought about by exploration of others earthquake experiences in supervision with my supervisors.

Definition of key terms

Several terms are used throughout this research; what follows is a description of how these terms have been understood for the purposes of this study.

Coping

In psychology coping means to invest own conscious effort, to solve personal and interpersonal problems, in order to try to master, minimise or tolerate stress and conflict.

Disaster

A disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

February earthquake

The February earthquake was magnitude 6.3 and struck at a depth of 5km, 10km south-east of Christchurch CBD at 1251pm on Tuesday, 22nd of February 2011. It was shallower and closer to Christchurch than the 7.1 magnitude quake and resulted in the loss of 185 lives and over 7000 injuries.

Preparedness

Preparedness refers to a very concrete research based set of actions that are taken as precautionary measures in the face of potential disasters. These actions can include both physical preparations (such as emergency supplies depots, adapting buildings to survive earthquakes and so on) and trainings for emergency action.

Recovery

The act or process of becoming healthy after an illness or injury: the act or process of recovering: the act or process of returning to a normal state after a period of difficulty.

Resilience

The ability of people to cope with change.

September earthquake

The September earthquake was magnitude 7.1 and struck at a depth of 10km. It occurred at 434am on Saturday 4th September 2010 just outside of Darfield, Canterbury resulting in structural damage but no loss of life.

Structure of the thesis

This chapter is organised into seven chapters.

Chapter One

This chapter introduces the topic and its development as well as a synopsis of the chosen research design. This chapter also offers a brief overview of the background and rationale for the research as well as defining key terms and outlining the structure of the thesis.

Chapter Two

The second chapter offers a context of the literature in this area and how post disaster literature shapes and influences the research that follows. An exploration of the impact of disaster, alongside a consideration of disaster mitigation and management is provided in this chapter. The chapter further considers the role of mothers as carers in conjunction with preconceived notions of women as vulnerable. The later sections explore support for Christchurch inhabitants for future post disaster situations.

Chapter Three

This chapter considers the theoretical framework of the research. It explores the concept of resilience and its philosophical underpinnings. It provides a discussion of resilience post disaster and its influences on mothers' recovery.

Chapter Four

The methodology and collection process are covered in the fourth chapter. The research design was elaborated upon and contextualised. All ethical issues, how they were identified and resolved are also presented alongside the process with which participants were engaged.

Chapter Five

This chapter presents the results of the research and gives voice to mothers' experiences. The data is presented based on the themes which influenced their experiences, including the actual event itself, support networks and managing care of themselves and their children.

Chapter Six

This chapter presents a critical discussion of themes which have been established from earlier chapters with supporting literature and research evidence.

Chapter Seven

This chapter provides a concluding summation of the research, limitations of the research and recommendations for future policy after natural disasters.

Chapter 2: Literature Review

Introduction

The purpose of this chapter was to provide a foundation of knowledge upon which the research can build. This chapter presents an overview of the topic area, identifies potential key research issues, explores similar work and recognises the knowledge gaps that call for further research in the area. Accordingly, the chapter is structured as follows: a brief exploration of the impact of disaster followed by a consideration of literature relating to disaster management and mitigation and the related topic of preparedness. It discusses disaster vulnerability, more specifically how mothers were affected by the gendered division of labour and subsequent role expectations after a natural disaster occurs. This is followed by a consideration of mothers as carers and factors associated with this role that can help or hinder their ability to recover. The next section focuses on social work approaches to disaster, post disaster reconstruction and important components that are required for mothers to rebuild; followed by a consideration of the importance of social networks and community. Additionally, the chapter explores the role mothers assume in their communities and within post disaster reconstruction. Finally, the chapter summarises the literature synthesis, with the identification of gaps in knowledge in this area, upon which the aim and objectives of this research have been considered and developed.

Impact of disaster

Natural disasters cause sudden and sometimes unimaginable levels of destruction, with high potential for physical injury and cause other sources of traumatic stress (Norris & Wind, 2009). New Zealand is positioned astride the Australian Pacific tectonic plate boundary in the south-west Pacific Ocean. Major earthquakes have occurred prior to and since the European settlement in the early nineteenth century, but prior to Christchurch in 2011, only the Napier earthquake in 1931 had resulted in a severe human toll; this was mainly because of low population densities and rigorous building codes (Orchiston, 2012). Whilst it was largely expected Wellington, the capital of New Zealand, would be the focus of a large earthquake, it came as a surprise that Christchurch experienced such a devastating event in 2010 followed by the fatal 6.1 aftershock in February 2011 resulting in 185 deaths. Despite inhabitants of Christchurch having an awareness of the risk of earthquakes, it was believed a lack of preparedness individually and structurally led to widespread damage in the city (Maher &

Maidment, 2013). In her article, McManus (2015) argues that environmentally Christchurch was not prepared for the earthquakes due to its poor building structures, which led to most of the deaths in the February earthquakes. Thus, lessons from these fatalities have led to improved building codes and standards across the rest of New Zealand particularly in Wellington where it is expected the next major incident may occur. This was evidenced in November 2016 when a magnitude 7.8 earthquake occurred off the coast of Kaikoura which closed State Highway 1 and forced closures of numerous buildings in the Wellington Central Business District due to safety concerns.

Studies show the impact of a disaster on individuals is dependent on many variables, including the type of disaster experienced, the level of exposure to the disaster, the degree of injury sustained, perceived life threat and the duration of individual and community disruption (Aldrich & Meyer, 2014; Lopez-Ibor et al., 2005). A wide and growing body of literature suggests that most people who are exposed to disasters can recover well (Norris & Wind, 2009; Paton & Johnston, 2006). This is in part due to the ability of those affected to adapt psychologically, following the event and by the availability and adaptability of community structures to support that recovery (Chandler, 2014; Paton & Johnston, 2006). Literature suggests a strong community is built by focusing on individual needs after a traumatic event which in turn will support them to recover and embody resilience in the future. Whilst it is evident that many variables can impact on the recovery of an individual, there are practical proactive measures which can be taken at an individual and community level to progress recovery. According to the research by Phibbs et al. (2015), for a community to recover it must not stagnate and be proactive in focusing recovery efforts, including formulating community infrastructure and working together to organise practical support for vulnerable groups. By doing so it allows itself a better opportunity to recover and be successful in terms of recovery during a future event.

Research about the Christchurch earthquakes showed the extent of the impact upon women was associated with where they were, who they were with at the time of the event and the extent of the disruption to their lives (Gordon, Sutherland, DuPlessis & Gibson, 2014). Studies show that in Christchurch, power, water and sewerage were lost to many homes, but it was not long before the local community and local agencies rallied together to support one another (Gordon et al., 2014; McManus, 2015). These studies clearly suggest there is a relationship between the community's level of resilience and disaster recovery (Paton &

Johnston, 2006). This will be discussed further in chapter 3. A synthesis of literature post disaster indicates that individual and community resilience and a sense of belonging are paramount in supporting people towards resilience and recovery (Gawith, 2011; Gordon et al., 2014; Greene & Greene, 2009). Overall, some existing evidence has suggested that despite the initial impact of the event, a robust and efficient community can minimise the impact and disruption for mothers and that a sense of connectedness to their community plays an important role in their recovery.

The following section will explore the role of disaster management and mitigation and the significance of these measures during post disaster recovery.

Disaster mitigation and management

Several studies have shown that loss of life and economic costs from natural hazards have continued to increase over the years and researchers and policy makers have realised the importance of exploring best practice to endeavour to reduce the widespread impact of disaster (Paton & Johnston, 2006; Red Cross, 2015). Previous disaster mitigation and management research highlight approaches which endeavoured to alleviate the devastation caused to individuals, families and communities (Greene & Greene, 2009; Norris & Wind, 2009). The efficacy of the proposed measures is considered in the following discussion alongside proposed strategies for future disaster mitigation and management strategies.

Historically, research investigating factors associated with disaster recovery has indicated that government responses towards disasters have been reactive with approaches focusing on disaster as primarily a combination of physical hazards (Medina, 2016). This approach meant that little consideration was given to psychosocial considerations, which left people more vulnerable to the impact of disasters and requiring additional help to recover. Further research on disasters discovered that more encompassing measures, including attention to social and environmental factors were required to mitigate the impact of disasters and purely structural considerations were not enough to support vulnerable populations (Davis & Alexander, 2016; Paton & Johnston, 2006). To shift the focus of disaster response from a reactive to a proactive approach the United Nations designated the 1990s as the International Decade for Natural Disaster Reduction (Davis & Alexander, 2016). The United Nations launched the International Federation for Disaster Reduction (UNIFDR) which oversaw the Hyogo

Framework for Action (HFA) 2005-2015, the purpose of which was intended to convince all European nations to reduce disaster risk (Copolla, 2007). It is clear in its recent approaches to disaster management that New Zealand has begun to incorporate disaster mitigation strategies in its highly publicised “Get Through” campaigns which encourage people to get prepared and be organised for disasters.

When disasters occur, they can often occur without warning which makes the need to be prepared extremely important. By ensuring individuals and communities are prepared for a disaster and the immediate aftermath, it contributes to their ability to be resilient and ‘bounce back’ more quickly from the event (Paton & Johnston, 2006). Disaster preparedness refers to measures taken to prepare for and reduce the effects of disasters. These measures include: to predict and where possible prevent disasters; mitigate their impact on vulnerable populations; and respond to and effectively cope with their consequences (Red Cross, 2015). Preparedness is important because people will be facing loss, trauma and tragedy to a degree that they may not have encountered before and as such need support to get through the event and subsequent aftershocks. A reactive approach to disaster can lead to lack of command, poor coordination, inflexibility and poor communication (Medina, 2016). Therefore, it is important to prepare and plan for a disaster to ensure individuals and communities have the best opportunity to embody resilience and recover successfully.

By using a proactive approach, namely being prepared before the disaster occurs, researchers have been able to consider the efficacy of preparedness for a disaster and the benefits of planning approaches to disaster management (Chandler, 2014; Davis & Alexander, 2016). Whilst the Hyogo Framework for Action established priorities and identified vulnerable groups, its introduction highlighted the need for further research into disaster management strategies to address underlying risk factors for certain groups and populations. In response, a Disaster Risk Management (DRM) approach was implemented to support disaster reduction (Medina, 2016). The DRM embodied effective pre-disaster measures which included pre-disaster risk assessment and analysis, monitoring of frequency of disasters alongside risk prevention, mitigation, reduction and control activities (Medina, 2016; Phibbs et al., 2015). The introduction of the DRM suggests an evolving approach to disaster recovery and management and highlighted the intention of introducing proactive, inclusive approaches to disaster recovery which go above and beyond structural measures to assist communities and individuals to recover successfully.

In contrast, some researchers of disaster management strategies indicated the Hyogo Framework for Action was not effective enough in addressing the extensive impact of natural disasters (Copolla, 2007). Whilst researchers agreed the DRM focused on a proactive approach to disaster mitigation and management, they argued the strategies employed were inadequate. One study indicated the extent of disaster mitigation strategies and subsequent measures implemented by the DRM were limited as they were specific to each country and dependent on the potential disaster location and the level of risk posed (Copolla, 2007; Davis & Alexander, 2016). For example, in Queensland Australia, in locations that were susceptible to floods and cyclone surges, the Queensland government subsequently developed a planning policy that identified these areas and introduced preventative measures which included disaster plans and flood beacons in areas of high risk (Paton & Johnston, 2006). Researchers argued that specific environmental interventions were not enough to address the widespread consequences of disasters, and their impact needed to be considered in a more holistic context which included psychosocial measures to be effectual (Copolla, 2007; Medina, 2016).

A further deficit of the directive approach by the DRM is the limited ability to include individuals and communities as a resource through the promotion of peer education, training and support (Phibbs et al., 2015). This is significant as inclusion of these groups would signify a sense of connectedness to the recovery effort and foreground the importance of psychological preparation for individuals alongside practical interventions to reduce risk and aid recovery. In addition, lessons from previous post disaster research point to the value of a sense of belonging and connectedness for people, alongside individuals developing effective psychosocial support systems in advance of possible disasters (Islam, Ingham, Hicks & Manock, 2017; Spittlehouse, Joyce, Vierck, Schulter & Pearson, 2014). Researchers have established that a community and individual-led, participatory approach was essential to disaster preparedness and recovery (Aldrich & Meyer, 2014; Bergstrand, Brumback & Zhang, 2015). The New Zealand Red Cross (2015), supports the evolution of disaster management and defines disaster mitigation as structural and non-structural measures undertaken to limit the adverse impact of natural hazards. Together these studies indicate the importance of an encompassing, inclusive recovery approach to disaster management, by bringing individuals and communities together to share their skills and resources and to have a connectedness with their community which will aid recovery.

The perception of women and disaster vulnerability

Disasters strike hardest at the poorest communities and within them, individuals and groups who suffer marginalisation and discrimination are the most vulnerable to their negative effects and face more difficulty than their counterparts in their recovery (Ariyabandu, 2009; Luthar, Cicchetti & Becker, 2000). Vulnerable groups are identified as the elderly, children, people with disabilities and women and the experience of disaster compounds their vulnerabilities (Phibbs et al., 2015; True, 2013). Genetic factors may also predispose people to certain disorders or amplify the probability that people will experience a negative developmental outcome thus leaving them with increased vulnerability and less ability to recover post disaster (Greene & Greene, 2009). Research into effective recovery post disaster and recent disaster mitigation literature have highlighted the need to focus on vulnerable populations during natural disasters in order to support their recovery (Copolla, 2007; Davis & Alexander, 2016). To mitigate the impact of disaster for vulnerable groups, a new strategy was introduced in Sendai, the area affected by the 2011 Japanese earthquake, which aimed to reduce the impact of natural disasters by exploring the concept of disaster vulnerability by making specific reference to women, girls and people with disabilities (Davis & Alexander, 2016). Disaster vulnerability is a concept used to identify characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard (Enarson, 2009; Paton & Johnston, 2006). Recognising that certain groups are vulnerable post disaster emphasised a need for focused support in assisting their recovery.

Data from several studies highlighted that women are perceived to be a vulnerable group within society even before disaster strikes (Ariyabandu, 2009; Enarson, 2009). Collectively these studies indicate women's lack of economic and social resources relative to men make them disproportionately more vulnerable to the effects of disaster (Ariyabandu, 2009; True, 2013). Juran and Trivedi (2015) argue women have access to fewer health and food resources, are less mobile, are granted less decision-making capacity, experience more inequities in legal, market, and political institutions, and are subjected to an overall lower level of human rights than men. In third world countries women are also less likely to own land and resources and therefore are more restricted in their capacity to recover independently from environmental disaster (Ariyabandu, 2009; Islam et al., 2017). This view is supported by Drolet et al., (2015) who argued in their study on building resilience, that due to the preconception about their level of vulnerability, women are often excluded from the

recovery process, are less involved in decision-making and therefore have limited capacity to express their needs which impacts on their ability to recover.

The literature suggests that poor economic status is a significant risk factor for mothers and will impact on their recovery. This view is further supported by Bergstrand et al., (2015) who state that health and socio-economic status are important determinants of earthquake vulnerability, but little is known about how these factors increase exposure to hazards or impact on women's recovery needs. In their research, they argue that financial hardship increases stress, erodes resilience and prolongs dependency. In addition, women living in communities struggling economically prior to disaster, will subsequently not have the resources to recover quickly and they will be significantly affected by the consequences of the disaster (Hawkins & Maurer, 2010). Therefore, it is important to consider mothers in their socio-economic context to fully understand their post disaster experiences and the impact this has on their ability to recover. This is due to the disadvantages they face in terms of access to finances and the additional financial and caring responsibilities they have for their children (Juran & Trivedi, 2015; Peek & Fothergill, 2009).

Traditionally, gender identity dictates male and female roles and their responsibilities within the family and these are often magnified post disaster (Ariyabandu, 2009; Paton & Johnston, 2006). Studies show in the presence of natural disasters women tend to try and create routine to re-create domestic culture in order to secure their families assets which are basic for their survival, whilst men try to protect the amenities (Peek & Fothergill, 2009; Saad, 2006). Men are also identified as those who clean up and provide labour for recovery efforts (McSaveney, 2012). Often men receive recognition for their roles, while women's roles as caretakers and organisers of informal networks remain invisible and undervalued (Horton, 2012). In contrast, other research has foregrounded women as strong-minded leaders of post disaster recovery (Ariyabandu, 2009; Islam et al., 2017; McManus, 2015). As identified earlier in the review the values underpinning effective recovery have changed and what constitutes important disaster management strategies have evolved from practical, structural support to the formulation of effective psychosocial factors in the community which are traditionally instigated by women (Ariyabandu, 2009; Enarson, 2009). This evolving approach to disaster management highlights the importance of the role of women during the recovery effort and foregrounds the significance of psychosocial factors in recovery management.

There are relatively few historical studies which portray women as forerunners in disaster recovery efforts; however, recent research about women after a natural disaster has redefined the perception of women and their roles after adversity (Juran & Trivedi, 2015; McManus, 2015). Whilst some historical literature indicates that women are vulnerable, such studies remain narrow in focus dealing with historical perceptions rather than on the reality of the lived experiences of women after traumatic events. Exploration of some women's voices in post disaster literature supports the view that women encompass many roles beyond the home environment and embody strength, flexibility and resilience throwing off the label of vulnerability (Ariyabandu, 2009; Islam et al., 2017; McManus, 2015). Collectively these studies provide important insights into the role of mothers' and portray an evolving role for women in post disaster recovery. Contemporary studies in post disaster management, portray strong, capable women and they are highlighted as an important part of the recovery effort encompassing key roles in fostering and developing resilience within communities (Gordon et al., 2014). These characteristics are particularly significant given the added responsibilities women face in terms of their caring roles after a disaster strikes.

Mothers as carers

The previous section explored the contested perception of women as vulnerable. The following section considers mothers in their caring roles, alongside additional factors which can create added pressure and impacts upon their recovery post disaster. It is widely established that women are those mainly responsible for caring for the young and the aged (Enarson, 2009; Peek & Fothergill, 2009). Whilst parenting can be a challenging experience on a routine basis, a natural disaster presents additional factors which increases pressure on a mother's ability to cope. Following a disaster, safety issues are paramount for a mother and her children. Safety concerns include loss of safe shelter, minimised support networks, loss of family contact and establishment of safe relationships (McManus, 2015). Post disaster adversities present psychological and environmental consequences for mothers in traditional societies, particularly due to their primary commitment to family wellbeing and caregiving roles (Ariyabandu, 2009). Challenges that are inherent in motherhood become intensified after a natural disaster which creates additional pressures for women who are responsible for looking after others needs alongside their own (Ariyabandu, 2009; Juran & Trivedi, 2015).

Research about mothers' roles during a disaster suggests that to re-establish a sense of normality for children post disaster, mothers try to regain a sense of domestic routine within their family unit (Ariyabandu, 2009; Islam et al., 2017). According to Gawith's (2011) research on the Christchurch earthquakes, it was evident that routine was difficult to achieve when day care facilities were closed and support networks had moved. Parents who did not have access to safe, reliable and affordable childcare were more likely to miss work and lose their jobs which created additional financial stress (Peek & Fothergill, 2009). A lack of available childcare can hinder both a mother's and her family's recovery (Enarson, 2009; Peek & Fothergill, 2009). Research after Hurricane Katrina indicated the need for agencies to identify strategies to aid mothers and caregivers by providing the opportunity to have access to transport, housing and employment as well as mental health and school assistance to meet the ongoing needs of their children (Hawkins & Maurer, 2010). Together these studies argue that practical and environmental issues impact on a mother's ability to provide a stable, secure environment for her children and an inability to do so would impact on her psychological wellbeing.

Depression, anxiety disorders, psychological distress and somatisation disorders are particularly prevalent for women in post disaster events (Neria, Galea & Norris, 2009). The risk of mental illness developing is heightened after a disaster strikes. Women are primary care givers pre- and post -disaster and as such their mental and physical needs often get overlooked as the needs of their dependents take priority (Ariyabandu, 2009; Enarson, 2009; Norris & Wind, 2009). Studies have shown increased expectations upon mothers to manage themselves and the needs of their children can lead to additional pressures on their mental and physical health and difficulties in sustaining recovery long term (Neria, et al., 2009; Norris & Wind, 2009). Mothers prioritise the physical and emotional care needs of their children pre- and post- disaster; however, these needs are exacerbated during a disaster phase. It is usually during this phase that mothers face their own emotional and practical difficulties, which are often overlooked whilst they struggle to care for others (Ariyabandu, 2009; Enarson, 2009).

[Role of the community and social networks post disaster](#)

Literature published after the Christchurch earthquakes highlighted that displaced communities created continued unfamiliarity and uncertainty for people (Maher & Maidment, 2013; McManus, 2015). In the following section the concept of attachment to place,

community and the significance of social networks are explored with a further consideration of their impact on mothers during the post disaster period.

Place attachment is the emotional bond between a person and place and the attachment is influenced by an individual and his or her personal experiences in that place (Shin, Nakakido, Horie & Managi, 2016). Disaster psychology states a healthy emotional relationship between a city or neighborhood and its inhabitants maintains culture and positive attitudes despite any detrimental events that may be occurring in that city or neighborhood (Mazo & Perkins, 2006). Research suggests that having a strong sense of attachment after a disaster can assist in recovery (Shin et al., 2016; Simms, 2017). Aspects of resilience and sense of and attachment to place, social relations and identity underpin a positive outlook to recovery (Simms, 2017). Exploring a mother's sense of attachment to Christchurch in this study will offer an understanding of how a relationship or connectedness to a location or lack thereof impacts upon their recovery. Knowledge about how residents relate to places can inform reasons behind migration decisions and choices of whether or not to remain in place, notwithstanding the challenges to remain there (Simms, 2017). It is evident there were many population movements following the Christchurch earthquakes and exploring mothers' decisions about whether to remain or leave Christchurch provides an understanding of their post disaster experience.

The community as a social network is significant as it formulates networks and bonds between people and engenders norms and trust which enables participants to act together objectively to pursue shared objectives (Hawkins & Maurer, 2010). Literature on social networks post disaster has highlighted the importance of strong connections and belonging to a community to assist recovery (McManus, 2015; Paton, Selway & Mamula-Seadon, 2013). Thus, it became evident that individuals found it more difficult to act cohesively as a group towards recovery within transient populations. Recent studies have shown that people who could stay in their communities after the earthquakes described a cohesive, purposeful community with shared goals and objectives (Gawith 2011; McManus, 2015). This view is supported by Drolet et al. (2015) who state that mothers who found themselves displaced and subsequently without social networks missed having the opportunity to build networks, have a sense of purpose and mingle with 'likeminded' others. Collectively, these studies outline a critical role for community participation and engagement after a disaster to support recovery for mothers who felt increasingly isolated after the Christchurch earthquakes.

It has been reported that deterioration of social networks post disaster can increase the prevalence of psychological difficulties and create obstacles to recovery (Satici, 2016). Studies indicate the absence of social networks impacted on individuals' ability to make sense of their experience, foster hope for the future and recover successfully (Gordon et al., 2014; McManus, 2015). Evidence suggests that after the Christchurch earthquakes, population movements threatened already established social networks, which were essential for resiliency and recovery (Paton et al., 2013). The environmental and community changes also led to relocation of family and friends. Due to such disruption, McManus (2015) states that as familiar bonds and networks were broken, individuals felt more displaced and in unfamiliar territory during a challenging time when they needed support the most. The studies presented thus far indicate the relocation of close family and friends had a particular impact upon women who were increasingly isolated by frequent population changes in their community (McManus, 2015). Women often relied on informal support networks such as friends and family for childcare, social interaction and peer support and therefore it is understandable that they would experience a considerable impact (Ariyabandu, 2009; Paton et al., 2013). The importance of stable familiar relationships was key to recovery for women who found they could identify and work together with like-minded individuals to support the recovery effort (McManus, 2015).

In contrast to the view that relationships are essential to ensure successful recovery, some research has identified that increased stress caused by the pressure of a traumatic event can create conflicts in relationships (Ariyabandu, 2009; Norris & Wind, 2009; Paton & Johnston, 2006). Paton and Johnston (2006) argue that within marital relationships extra responsibilities related to caring for children after a disaster can lead to conflict. In the weeks following the September 2010 earthquakes, the police reported that domestic incidents had increased by one fifth (True, 2013). One writer suggests the trauma experienced by people post disaster has resulted in a sense of displacement and lack of control; they can struggle to cope, resulting in their frustrations being enacted on those closest to them i.e. their wives or dependents (Enarson, 2009). Others attribute the increase in violence or sexual assault from partners or others was due to crowded conditions, shared shelter, displacement from homes and separation from their loved ones who may be involved in the recovery effort (Horton, 2012). Social relationships may be altered post disaster due to a sense of uncertainty and lack of control over situations. An appreciation of the difficulties that can arise in relationships in

the face of natural disaster offers an insight into how mothers' post disaster experiences can be affected.

The role of social work in post disaster recovery

The profession of social work, with its holistic and strengths-based approaches, has much to offer in disaster recovery. Social work practice values and ethics are at the forefront of emergency action (Rowlands, 2013). Social workers as advocates for the vulnerable and disadvantaged play an important part in challenging the oppression and disadvantages women face post disaster. Women can be further oppressed in disaster events due to limited opportunities and disadvantages associated with their perceived roles (Juran & Trivedi, 2015; McManus, 2015). Research after the 2004 Tsunami in Thailand identified that it was not only the event itself and a pre-disposition to vulnerability that caused increased problems for women, associated social factors during the aftermath including, encompassing multiple roles within the family, violence and sexual exploitation, financial stress and relationship issues also had a significant impact (Norris & Wind, 2009; Wickrama & Ketring, 2012). Male-dominated relief agencies, loss of medical and other services, increases in sexual and gender-based violence, and complex bureaucratic processes in post-disaster periods have all affected women's ability to recover (Horton, 2012; True 2013). Overall these studies recognised a need for proactive measures specifically aimed to identify risk groups to prepare, plan and support disaster mitigation and disaster risk reduction in the future (Davis & Alexander, 2016; Phibbs et al., 2015). Social workers whose practices are informed by feminist, culturally sensitive, emancipatory and anti-oppressive social work principles are well placed to work in solidarity with women at the local level to address these issues for the future (Pittaway, Bartolomei & Rees, 2007).

Social workers in the post disaster phase can support the opportunity for women to create formal and informal support networks to prevent against exploitation (True, 2013). A community participatory approach is in keeping with the social justice and human rights principles in social work. Among other things, these principles include a commitment to, facilitate the inclusion of marginalised, socially excluded, dispossessed, vulnerable and at-risk groups of people and to encourage individuals to engage in advocacy with regard to relevant local, national, regional and/or international concerns (Pittaway et al., 2007). Previous literature has suggested that lack of adequate facilities may lead to mothers having to stay in violent or risky situations if they do not have the means or social support network to

remove themselves from unsafe relationships (Ariyabandu, 2009). A previous study has suggested that communities and organisations need to plan to make sure domestic violence services such as hotlines and safe sheltering options are available in a disaster aftermath (Peek & Fothergill, 2009). True (2013) argues women need to be included in disaster planning and policy making from a community level so domestic and sexual violence can be anticipated and prevented. Social workers can play an important part in promoting the role of women post disaster and work to lobby, promote and develop opportunities for the implementation of appropriate post disaster guidelines and response mechanisms in partnership with local communities and women's organisations (Pittaway et al., 2007). This is supported by Ariyabandu's (2009) research on gendered challenges and responses in disasters when she argues to redress gender balance women need to make their voices heard in society in order to have their needs met appropriately.

Historically, the helping profession has based intervention on deficits, problems and disorders associated with identified problem factors (Norris & Wind, 2009). In contrast, other recovery research has suggested helping professionals should consider psychosocial approaches which identify and channel resources that exist within and around the individual and their community (Saleeby, 2006). The concept of recovery will be discussed in more depth in chapter 3. By focusing upon a different approach based on strengths, help is centred on reducing the negative effects brought about by people moving away, displaced communities and loss of social networks. Instead, it is centred on individual capabilities and encouraging people to get on with their lives independently, affirming and developing positive values and commitments and making and finding membership in a community (Saleeby, 2006; Satici, 2016). It is anticipated this approach will assist individuals to recognise their inner capabilities, capacity for strength and establish knowledge that can assist them to move forward independently if faced with adversity in the future. By doing so they can be independent and autonomous in managing their own recovery.

Important themes have emerged from the literature so far which challenge the notion of women as vulnerable. Whilst there is awareness that certain risk factors associated with women may make them more likely to suffer from mental illness, it is not widely researched whether women are more likely to access mental health services post disaster (Cornell et al., 2012). Although traditional mental health approaches would indicate therapeutic intervention was required to manage adversity, literature and research conducted and published after the Christchurch earthquakes established that secondary mental health services were

oversubscribed with professionals and underutilised by individuals, as the recovery needs of the population were different to those perceived by the government (McManus, 2015). Research highlights the importance of focusing on women's strengths rather than her vulnerabilities (Drolet et al., 2015; Saleeby, 2006). Whilst the Christchurch area was flooded with opportunities to engage with talking therapy after the event, it became clear that women did not feel the need to relive their experiences, rather they wanted to focus on surviving and being purposeful (Gordon et al., 2014; McManus, 2015). The evidence reviewed here suggests that women preferred to be focused, have a purpose and be goal orientated after the events in Christchurch which assisted them in their recovery.

There are still several aspects of mothers' experiences during disasters about which relatively little is known. Further research in this area would provide an opportunity to explore and collate mothers' opinions in relation to their post disaster experiences. McManus (2015) argues that the perception of women has changed over the years and ongoing exploration of their role after a disaster will continue to challenge the historical perception of women as weak and vulnerable which will ultimately assist in the recovery of themselves, their children and their community.

Summary

This chapter has provided an overview of some of the factors, disadvantages and gender assumptions that impact on mothers' ability to recover from traumatic events. An overview of the key impacts on mothers' post disaster portrays the complex and challenging nature of their experiences. The chapter initially highlighted the prevalence of disaster and its impact on individuals and on the local community. Additionally, the concept of preparedness for natural disasters and its significance in mitigating the effects of disaster was considered.

Disaster literature synthesised in this chapter identified key themes and commonalities which impacted women during the recovery process. This chapter highlighted the impact of traumatic events is influenced by several factors, including relationships, gender roles, socio-economic status and connectedness to the community. Additionally, women have the added responsibility in conjunction with managing their own emotions of caring for dependents and managing the household alongside paid employment. This chapter also offers insights into the varied factors that can influence mothers' experiences of the Christchurch earthquakes. It is hoped that knowledge of these factors can assist in understanding the post-disaster effects

on mothers after the Christchurch earthquakes, which in turn can inform future disaster management and risk reduction planning in order to meet the specific needs of this group. The next chapter will consider in more depth the concept of recovery and resilience and how these concepts relate to disaster.

Chapter 3: Resilience and Recovery

Introduction

The purpose of this chapter is to explore the concept of resilience in order to understand mothers' post disaster experiences through this framework. The chapter focuses on theories of resilience, particularly understandings in relation to the role of resilience when dealing with disaster. This has been undertaken by exploring definitions and characteristics of resilience and how they relate to key research issues. Accordingly, the chapter is structured initially by providing a brief overview of resilience theories, with reference particularly to psychology, social services and humanities literature. This is followed by an exploration of the characteristics of resilience and different perceptions of the concept. The origins of resilience are explored, along with a consideration of whether resilience is innate or can be developed to support the disaster management and recovery process. Key features of resilience are further explored with specific reference to the importance of their embodiment physically, psychologically, and environmentally post disaster. Additionally, protective and risk factors are examined including a consideration of how childhood development, social systems and the physical environment influence building a recovery framework. The chapter will further explore mothers' recovery from a resilience framework.

Theories of resilience

The purpose of this section is to explore understandings of the term resilience considering the term within a post disaster setting to provide a context for the research that follows. The term resilience originated in the 19th century in engineering, ecology or psychology and while it has spread outside of its original disciplinary fields, the concept of resilience, particularly when it is associated with hazard research refers to the idea of rebound or bouncing back from adversity (McManus, 2015). More recent attention has focused on a growth of interest in the study of resilience possibly due to a reflection of the frequency of crises with individuals increasingly forced to rapidly adapt to changing, and often unpredictable situations (Baird & De Vries, 2014; Cooper-Cabell, 2013; McManus, 2015; Nilakant, Walker & Van Heugten, 2014). It is well established that studying and exploring resilience provides towns, cities, countries and businesses with the opportunity to survive and more importantly prosper in a world dominated by the unknown and the improbable (Nilakant, et al., 2014). Studies have shown resilience has been increasingly proven to be the best response to the

relentless level of disruption brought about by natural disasters. Studying the concept of resilience explains differing outcomes that result from disaster experiences (Paton & Johnston, 2006; Reivich & Shatte, 2002). Using this approach, researchers have been able to establish why some individuals can successfully address crises post disaster and adapt to new situations, while others may struggle (Paton & Johnston, 2001; Rutter, 1985). Research shows a fuller understanding of the theory of resilience also offers an opportunity to identify ways in which individuals, organisations and communities can boost their resilience in the face of natural disasters offering hope and learning opportunities for the future (Gil-Rivas & Kilmer, 2016; Reivich & Shatt , 2002).

Several lines of evidence suggest the term resilience covers a wide spectrum of meanings which are primarily explored through different understandings of the relationship between the individual and the environment (Chandler, 2014; Nicholls, 2012; Paton & Johnston, 2006). This relationship includes how individuals can cope with change and thrive in a changing environment. Resilience can also be broadly understood as the ability of a system or individual to absorb episodic shocks or extreme events and disturbances, self-organise to rebound or bounce back to a desired state, and learn from past events to adapt for the future (Zolli & Healy, 2012). Educational researchers provided evidence that resilience is not exclusively a quality of a person or of a context, but could also be the result of a person's interpretation of the adversities they are facing. They identified that creating and improving resilience was possible among individuals who may have had a lifetime of unproductive beliefs (Yeager & Dweck, 2012). Together these studies indicate there is no universal definition of resilience; however, there are common characteristics which are found in each perspective.

There is a consensus among social scientists that ecological resilience can be measured by the ability of ecological systems to absorb changes and disturbances without having to reorganise their processes or structures (Harrison & Williams, 2016; Paton & Johnston, 2006). In turn, the ecological definition of resilience can be interpreted in a social context to understand how individuals and communities absorb and adapt to adversity or disturbances like disasters (Harrison & Williams, 2016). Research suggests that understanding individuals as part of a whole system requires an exploration of individuals within their personal and social environment (Chandler, 2014; Harrison & Williams, 2016). Traditionally, it has been argued that individual resilience is embedded in larger social systems that act as a foundation for building resilience (Greene & Greene, 2009). The evidence reviewed here suggests that

understanding personal and larger-scale community resilience requires the use of ecological and systemic explanations and an exploration of collective behaviour that shifts attention to a systemic, relational perspective (Harrison & Williams, 2016). The perspective also draws attention to the macro-environment encompassing economic, cultural, and political systems and the ecological context of neighbourhoods and societies (Greene & Greene, 2009; Harrison & Williams, 2016). That is, resilience can be viewed and must be addressed both as an individual and a macro-system phenomenon that involves personal care, sustainable services and supportive infrastructure.

Research shows the socio-ecological view of resilience identified families, communities and the environment as important factors in maintaining resilience (Berkes, Colding & Folke, 2003). There is a consensus that socio-ecological perspective principles are based on the interplay between disturbances in the environment and having an ability to cope through constant change (Bergstrand et al., 2015; Berkes et al., 2003). The focus of resilience in this perspective is on having an adaptive capacity for learning, innovation, transformability and the ability to self-organise (Harrison & Williams, 2016). Through this understanding resilience can be considered within a context in which disasters disrupt the social situation, placing extreme demands on individuals, families and communities that often exceed personal and community resources and infrastructure (Greene & Greene, 2009; Paton & Johnston, 2006). Similarly, researchers in education believe the term resilience means any behavioural, attributional, or emotional response to an academic or social challenge that is positive and beneficial for development (such as seeking new strategies, putting forth greater effort, or solving conflicts peacefully (Yeager & Dweck, 2012). For the purposes of this research resilience was considered from a psychological perspective and focused on the ability of an individual to adjust to adversity and move forward in a positive manner. Resilience is a set of resources and characteristics that can offset the negative developmental effects of risk exposure. Boden, Sanders, Munford, Liebenberg and McLeod, (2016) in their study on youth resilience argue that rather than a static, individual trait, resilience becomes a set of resources that can be enhanced by the actions of others, for example, professionals and caregiving adults who are involved in the lives of vulnerable children. The correct use of these resources leads to the impact of risks on later outcomes being modified. This focus allows an insight into how social workers can best support mothers after disasters, by assisting individuals to recognise their strengths and how these can be harnessed to support and encourage their recovery.

Over the past few decades, psychological literature and research have been actively exploring the concept of resilience in relation to children, adolescents and families (Jackson, Firtko & Edenborough, 2007). Much of the literature in recent years has claimed that the formation of relationships at an early age plays a vital role in building the resilience of an individual (Hill, 2015; McWilliams, 2011). Having secure relationships at an early age allows opportunities for learning and builds strength of character. Historically research on building resilience in the early years of an individual's life has focused on the development of attachment. It is now well established that resilience can be embodied through the secure attachment in early years to a primary care giver, which can develop into a protective factor and assist the adult to manage traumatic or adverse life events in later life (Bonnano et al., 2007; Saleeby, 2006). These interactions start at a young age, when we are heavily influenced by our parents and evidence suggests the circumstances of one's childhood have a strong influence on individual resilience in adult years (Reivich & Shatté, 2002). Closeness and belonging are important human needs and attachment theorists argue if individuals have formed a secure attachment in their early years and established an intimate, trusting and emotionally secure relationship with a carer they are likely to be more resilient. When under threat the individual's attachment system is activated and leads to comfort seeking behaviours which when validated fosters resilience (Saleeby, 2006).

Characteristics of resilience

Numerous perspectives on resilience pay attention to the understanding that resilience is created by personal qualities which enable individuals to thrive in the face of adversity (Orchiston, 2012; Saleeby, 2006; Satici, 2016). The following section considers this perspective through an exploration of the characteristics of resilience which include adaptability, flexibility, coping, optimism and thriving.

With more disasters happening in New Zealand such as the Christchurch earthquakes 2010 and 2011, the Kaikoura earthquake in November 2016, the Port Hill Fires and significant flooding in 2017, it is important to explore the concept of resilience beyond recovery in order to strive for opportunities to improve future disaster management. Data from several studies indicate resilience also incorporates opportunities to improve upon previous situations, circumstances and environments (Chandler, 2014; van Kessel, Gibbs, & MacDougall, 2015). Some resilience researchers believe resilience is the having the ability to thrive in the face of adversity (Gil-Rivas & Kilmer, 2016; Warchal & Graham, 2011). The evidence presented

suggests in order to thrive in the face of adversity, individuals must have good problem-solving skills, self-confidence and self-efficacy. Resilience can involve people progressing towards a situation that has psychosocially and physically changed, rather than returning to a previous state and one which is perceived by resilient individuals as a positive rather than a negative experience (Chandler, 2014). Some individuals when facing adversity demonstrate a capacity for growth and thriving and build on their strengths and resources to achieve positive outcomes. These individuals see opportunities after adversity for financial, business or social improvement and work hard with resources available to them to make this happen (Nicholls, 2012). As the environment presents demands, a resilient person will see stresses and challenges as an opportunity to develop strength through the interplay of genetic, neurobiological, familial and communal factors (Chandler, 2014; Harrison & Williams, 2016). Together these studies indicate thriving and growth beyond recovery requires an embodiment of resilient characteristics to promote positive outcomes and development in the face of adversity.

It is well established that psychologically resilient individuals are adaptable people, who are better able to frame stress-inducing situations in positive terms and return quickly to adaptive functioning despite challenging circumstances (Orchiston, 2012; Satici, 2016). Several lines of evidence suggest the ability to adapt rather than resist a new environment is particularly important post disaster (Chandler, 2014; Paton & Johnston, 2006). Thus, an individual's resilience refers to a process that involves positive adaptation within the context of significant adversity, which implies that the individual, despite being exposed to a significant threat or adversity displays positive adaptation during the process (Warchal & Graham, 2011). The ability to adapt positively to the new environment encourages a change in perception of the situation and allows the individual to perceive difficult situations as an opportunity for growth rather than a threat (Harrison & Williams, 2016; Warchal & Graham, 2011). It is clear a significant theme which emerges from the studies here involves an ability to be flexible and adaptable.

Many recent studies have shown that hope is considered a core characteristic which helps individuals cope with various life challenges and having hope has been defined as the cognitive process that helps people to have positive expectations and to reach desired goals (Paton, Selway & Mamula-Seadon, 2013; Satici, 2016). Hope is a human psychological strength that promotes stressful situations in a positive way and promotes resiliency (Satici,

2016; Snyder, 2002). Research has indicated that optimism is an essential component of resilience which helps an individual to alleviate the effects of stress on health (Satici, 2016). Commenting on the concept of hope, Snyder (2002) states that an individual who embodies hope has a higher chance of a more positive outcome after adversity with successful adjustment and improved wellbeing. What we know about hope is largely linked to optimism and positive thinking in relation to moving forward in the face of adversity (Snyder, 2002).

Despite the assumptions that most people struggle to cope, the ability to embody adaptive functioning and effective coping are more common reactions after a disaster, partly because of coping skills developed throughout childhood and adulthood (Osborne & Sibley, 2013; Warchal & Graham, 2011). Evidence has shown that resilient individuals can cope and sustain an adequate level of functioning post disaster (Ariyabandu, 2009; McManus, 2015). The term coping generally refers to adaptive (constructive) coping strategies (Snyder, 1999). Studies suggest that coping from a psychological perspective means having the ability to invest your own thoughts and actions into solving personal and interpersonal problems which in turn minimises stress, conflict and distress (Osborne & Sibley, 2013; Saleeby, 2006). There is a consensus among psychologists and social scientists that adaptive coping strategies include seeking support from others, optimism, humour and goal setting (Satici, 2016; Stoeber & Janssen, 2011). These characteristics and strategies can lead to successful outcomes in terms of resilience and recovery by promoting positive thinking and action (Stoeber & Janssen, 2011).

The evidence reviewed here suggests a pertinent role for positivity in the face of adversity. Numerous studies have demonstrated the ability to find positive meaning in adverse situations and regulating negative emotions contributes to personal resilience (Jackson, Firtko & Edenborough, 2007; Snyder, 2002). Positive emotions include laughter, sense of humour and positive thinking. Producing positive emotions in the face of adversity builds long term psychological resilience increasing the likelihood of positive outcomes in the future (Drolet et al., 2015; Jackson, Firtko & Edenborough, 2007). Together, these studies provide important insights into the characteristics needed to recover successfully from adversity and highlight the relationship between resilience characteristics and successful recovery is paramount.

Maladaptive coping strategies describe non-coping, which is the inability to cope or move forward after a traumatic event which in turn increases stress (Hill, 2015). Data from several

sources have identified that maladaptive processes can include symptoms of anxiety, despair, pessimism, avoidance and withdrawal from social situations (Hill, 2015; Snyder, 1999). Hill's (2015) research has demonstrated that maladaptive thinking processes and actions hinder resilience. These symptoms and behaviours prevent opportunities to recover, goal set or regain hope for positive outcomes and recovery. Although some aspects of maladaptive behaviour may feel beneficial for the individual in the short term, these are not long term successful coping strategies and will not promote resilience in the future (Stoeber & Janssen, 2011; Tugade & Frederickson, 2007). Snyder's (1999) research indicates the effectiveness of coping strategies and likelihood of being able to cope with adversity depends on the type of stress endured, the individual's background and the circumstances surrounding the event. More recent attention has focused on maladaptive coping strategies which hinder the recovery effort and prevents opportunities to foster hope, optimism and resilience during post disaster recovery (Gordon et al., 2014; Satici, 2016). Overall, these studies highlight the need for further research to establish ways of challenging maladaptive thinking processes in order to promote successful coping strategies and alleviate the impact of disasters for individuals.

Previous research has established that coping responses are partly controlled by an individual's personality but are also influenced by the social environment and by the nature of the stressful environment (Snyder, 1999). Therefore, not all people can be expected to cope or recover in the same way. Some studies have suggested that individuals who have previously been exposed to trauma and have not recovered well are less likely to cope and are at an increased risk of developing and experiencing negative consequences (Stoeber & Janssen, 2011). These include people who have experienced previous traumatic experiences, had underlying mental illnesses, were exposed to events where the horror element was high, have thought they were going to die, have experienced traumatic bereavement or have had serious losses of property, livelihoods, or disruption to communities and networks (Peek & Fothergill, 2009; Reivich & Shatte, 2002). If individuals have not learnt how to become resilient during a previous traumatic event or have not had the opportunity to make a positive behaviour change during adversity, their maladaptive coping strategies may remain unchallenged during future events thus hindering their opportunity to learn new ways of coping.

Protective factors

Protective factors are qualities of a person, or his or her developmental context that predict better than expected outcomes under adverse conditions (Greene & Greene, 2009). They are the mechanisms that moderate the effects of risk and trauma (Chandler, 2014). Guo and Tsui (2010) indicate the more protective factors people have the more resilient they will be. Protective factors can include a strong socio-economic environment with rapid access to resources, a stable and robust upbringing, supportive families and positive, stable relationships that provide care and encouragement in and outside of the family (Paton & Johnston, 2006). Chandler (2014) argues that resilience is more likely to occur when there are more cumulative protective factors such as strong relationships, financial stability and supportive networks. Previous research has established that identified protective factors help individuals to achieve a positive outcome regardless of the risk (Jackson, Firtko & Edenborough, 2007; Satici, 2016). This is significant as these studies clearly indicate there is an opportunity for all individuals with strong protective factors to achieve positive outcomes post disaster despite the adversity they have experienced.

Existing research has suggested that social support is a significant protective component in resilience and the maintenance of relationships is a component of social support (Jackson, Firtko & Edenborough, 2007; Paton & Johnston, 2006). Mutual support between neighbours, friends, community groups, and other social networks is an opportunity to enhance resilience (Drolet et al., 2015). Social capital is defined by Putnam (2002) as networks and bonds between people which engender norms and trust which enable participants to act together more effectively to pursue shared objectives (Ride & Bretherton, 2011). By making connections with one another and sustaining them over time, social capital can assist people to achieve things they would not have achieved individually. Research conducted after the Christchurch earthquakes stressed the importance of a sense of belonging or affiliation to a group or community to successfully recover (Gawith, 2011; Maher & Maidment, 2013; McManus, 2015). For mothers who were displaced and lost their social networks after the earthquakes, Drolet et al.'s (2015) research found that having the opportunity to rebuild networks, to redevelop a sense of purpose and mingle with 'likeminded' others helped build their social capital and resilience, which supported their recovery and their ability to support others.

Families are considered a social system that can foster and strengthen resilience by supporting each other during adversity (Jackson, Firtko & Edenborough, 2007). Family resilience is the family system adapting and changing the way in which it functions in the face of a natural disaster (Paton & Johnston, 2006). Similarly, the family unit needs to embody the adaptive capacity, positive thinking and hope that identifies resilience which will in turn encourage individual resilience. Opportunities for development can also extend to the family system whereby a stronger sense of family than existed prior to the disaster can be generated (Paton & Johnston, 2006). Shared core beliefs ground and orient people, providing a sense of reality, meaning, or purpose to life which helps establish a communal way forward through mutual recognition and understanding (Van Kessel et al., 2015; Zolli & Healy, 2012). A supportive family environment will assist individuals to better adjust during traumatic events. In her research, Rowlands (2013) argues reunification of families and accessing informal social support systems are the first priority after a disaster, keeping families and neighbourhood groups intact wherever possible should be paramount, as it is from these relationships that people draw their most support. A cohesive supportive family acts as a strong social system from which individuals can foster and build resilience.

Developing resilience

Within various schools of thought, there is discussion about whether resilience is innate or can be learned (Paton & Johnston, 2006; Satıcı, 2016). There is growing evidence that individuals can develop and strengthen resilience through formulating and developing strategies (Corzolino, 2016; Reivich & Shatté, 2002). Everyone has resilience potential however this is influenced by various factors, which include individual experience, personal qualities, the environment and by individual's balance of risk and protective factors (Paton & Johnston, 2006). Some individuals are innately resilient. Attachment theorists would argue their innate resilience originated in the attachment relationship formed with their primary care giver which fostered security, positivity and coping skills (Saleeby, 2006; Satıcı, 2016). Individuals who are innately resilient have the capacity to draw upon personal and social resources to manage the consequences of disaster. As noted in the previous section inherent characteristics which foster resilience include positivity, optimism and hope. These characteristics alongside strong personal and environmental systems, a robust sense of community, personal feelings of efficacy and individual coping strategies provide individuals

with the ability to thrive in the face of adversity (Chandler, 2014; Paton & Johnson, 2006; Paton, Selway & Mamula-Seadon, 2013).

Early studies of resilience by Svanberg (1998) and Snyder (1999) commonly described the concept as a personality trait or set of traits however, more recently resilience studies have come to describe it as a process (Hill, 2015; McWilliams, 2011). This is indicative of the belief that resilience is not something an individual does or does not have, but something they can learn and develop over time. Positive psychology researchers would stipulate that people who are less resilient are more likely to blame themselves for the circumstances in which they find themselves, struggle to embody positive characteristics or consider circumstances to be permanent or impossible to change (Saleeby, 2006; Satici, 2016). More recent studies have shown that the ability to reframe such thoughts can help build resilience (Cozolino, 2016; Islam et al., 2017). To become resilient, it is paramount that the individual can learn and develop characteristics such as adaptation, flexibility, coping, thriving and optimism. By doing so they will be able to respond and adapt to negative circumstances or events by feeling and experiencing negative emotions (fear, anger, distress, anxiety, hopelessness, sadness) but are still able to act to cope with the results of the situation (Hill, 2015).

Individuals in the helping profession can assist people to develop the abilities and characteristics that make up resilience (Reivich & Shattè, 2002). Hardship and challenge are perceived by some helping professionals as both a risk factor and an opportunity for growth. Social work perspectives in mental health are evolving from a foundation based on psychoanalysis and psychiatry, towards developing strengths-based practice with certain client groups (Guo & Tsui, 2010). Saleeby (2006) argued the strengths perspective focused on strengths and capacities of people rather than on crisis and disadvantaged societies. The strengths model endeavours to discover the resources available in the environment and utilise them alongside encouraging individuals with goal setting, communication, problem solving, emotional regulation, fostering hope, self-care, and self-confidence in order to foster and develop resilience (Guo & Tsui, 2010; McWilliams, 2011). Guo and Tsui's (2010) study established that utilising strengths can encourage individual resiliency during periods of adversity and argued that social workers must cultivate and enhance the strengths of their service users to enhance resilience. In doing so individuals will be less reliant on government interventions post disaster and be able to act autonomously managing their own experience and recovery.

Complex economic, social and environmental problems no longer seem appropriate to be dealt with by traditional top down state based interventions operating at a macro level (Chandler, 2014). Most problems are being re-thought in a more person-centred or ‘bottom up’ approach. In the past 20 years, empowerment theory has been considered as the new strategy for helping the disadvantaged (Saleeby, 2006). Empowerment theory promotes social change and problem solving in human relationships by encouraging the empowerment and liberation of people to enhance their own wellbeing rather than relying on government interventions (Chandler, 2014; Saleeby, 2006). This approach highlights characteristics that are required to foster resilience and enhance recovery, namely adaptability, strength and hope. For example, mothers who can manage independently in fluid situations after a natural disaster promote confidence in themselves and in others (Islam et al., 2017).

In the face of natural disaster, traditional social work approaches, like cognitive behavioural therapy and mindfulness approaches, focus on reducing the effects of symptoms and the negative personal and social consequences of actions, emotions, thoughts or relationships (Guo & Tsui, 2010). In contrast, the strengths perspective focuses on getting on with one’s life by recognising strengths, capacities and the adaptive skills of the individual, family or community (Saleeby, 2006). The objective of strengths based practice is that people will become more resourceful individually and collectively as they begin to discover new found confidence after having survived and surmounted these difficulties independently. Recognition of individual strengths promotes individual and community resilience and promotes a ‘bottom up’ approach to adversity (Chandler, 2014). A change of perspective encourages self-autonomy and resilience to manage the after effects of disaster.

Recovery

Recovery models are usually embedded in a model of repair and restoration (McFarlane & Norris, 2006; Paton & Johnston, 2006). Recovery foundation is based on returning to a pre-injury state and how things were previously or defined as the act or process of regaining something that has been lost (Greene & Greene, 2009). Mental illness models, for example the strengths model, define recovery as a dynamic, individual, and strengths-based process that is guided by systems and personal responsibility (Scheyett, DeLuca & Morgan, 2013). Within mental health recovery models, individuals live with their illness and are not defined by it and by doing so they can reconstruct and develop personal, social, and spiritual

experiences that allow for a purposeful life, regardless of their mental illness to get back to a state of wellness. Considering strengths based recovery within a post disaster setting, individuals are perceived to be able to live within the context of this adversity by reconstructing and developing similar experiences to live a purposeful life during and after disaster (Scheyett, et al., 2013).

Resilience is often defined as a key basis for recovery after disasters, whether it is considered an attribute of individuals and communities or collectives, or whether it is envisaged as a process or set of actions and interactions (Gordon et al., 2014). Resilient people assist the recovery effort by having the ability to face reality with staunchness and by being able to reframe adversity to make meaning and move on successfully. Those individuals who have previously managed adversity successfully, have learned skills, solutions and routines that allows them to repeat these actions in the future without having to build these skills again (Satici, 2016). The characteristics of resilience act as a protective factor after disaster, as they develop the capacity of people, communities and societies to anticipate, cope with and deal with hazard consequences thus moving forward to rebuild and reconstruct their environment to facilitate recovery (Paton & Johnston, 2006).

Research indicates that a key factor after a disaster is the social aspect of recovery, because the mobilisation of community resources and aid may increase adaptive coping (Warchal & Graham, 2011). Building resilience can be achieved using Psychological First Aid which includes basic principles of support to promote natural recovery, which involves helping people to feel safe, connected to others, calm and hopeful, access physical, emotional and social support, and feel able to help themselves (Psychological First Aid, 2008). Psychological first aid aims to reduce initial distress, meet current needs, promote flexible coping and encourage adjustment. The Psychology First Aid's five principles facilitate positive adaptation after a disaster and mirror Erikson's (1950) ego strengths and Maslow's hierarchy of needs by promoting a sense of safety, calmness, a sense of self and collective efficacy, connectedness, and hope (Gil-Rivas & Kilmer, 2016). These are all factors that can be created and developed with the assistance of the local community. Social support inherent in family, community and local social or religious institutions can significantly improve an individual's resilience. Social validation by a group or individuals can promote increased feelings of self- esteem, self -worth and the belief that others are available to provide support thus reducing the impact of adversity (Saleeby, 2006).

Successful recovery is dependent on psychosocial factors to encourage a well-functioning community and to foster individual resilience and wellbeing (Guo & Tsui, 2010; Paton & Johnston, 2001). Effective community based interventions place importance on accommodating spiritual and cultural values by working with community leaders to build trust (Harrison & Williams, 2016). By having active participants in a community and using an individual's own capacities and resources can assist in creating strong recovery. Successful recovery involves people dealing with practical issues relating to housing, economy, environment and building resources within the community (Greene & Greene, 2009). Individual tasks and characteristics within recovery such as problem solving, hardiness, self-reliance coping and self-efficacy encourage individuals to be proactive and deal most effectively with challenges (Greene & Greene, 2009; Saleeby, 2006). This approach links to a strengths-based approach and encourages resilience in post disaster settings.

Disasters can generate a stronger sense of community among those affected than prevailed prior to disaster which can strengthen individual and community resilience (Paton & Johnston, 2006; Ride & Bretherton, 2011). Resilience enhancing strategies at the micro and macro levels can minimise the effects of adversity and contribute to effective recovery and adaptation after disaster. Communities that are economically stable are likely to recover faster after a natural disaster, if they have the finances, infrastructure and means to act quickly to get recovery underway (Ride & Bretherton, 2011). Alongside preparation and planning for disasters, disasters are mitigated by enhancing strengths in individuals and communities, more specifically by engendering resilience (Paton & Johnston, 2006). Communities are encouraged to enhance resilience through activities such as education, communication and unity of purpose which in turn will further mitigate the impact of the disaster. Identifying strengths and capacities within a community enhances its response to the disaster and supports its recovery (Gil-Rivas & Kilmer, 2016; Paton & Johnston, 2006). This in turn stimulates individual resilience and positive individual action within a community.

Community resilience is interpreted as a community being able to “bounce back” by recovering from disaster using its own resources and potentially experiencing a growth and improvement in response (Mehta, 2009; Nicholls, 2012). Individuals in the community must be competent and focused on mobilising local action recovery plans to manage problems and adapt to the reality of their new situation (Paton & Johnston, 2006). Resilience is essentially

embodied by those who are prepared, adaptable and resourceful and committed to their community. Research after the 2009 Black Saturday bushfires in Victoria has shown by offering visible social recovery opportunities decisions can be made at an individual and community level to organise relationships in ways that sustain resilience and contribute to social capital (van Kessel et al., 2015). The importance of reconstructing damaged housing, obtaining food and shelter and other survival strategies has been observed in past research as important microsystem interventions for individual resilience (van Kessel et al., 2015). In fact, there is considerable evidence that people and communities have a remarkable capacity to rebound when they receive appropriately planned intervention strategies (Greene & Greene, 2009; Hill, 2015). This supports the notion of disaster as a catalyst at both an individual and community level to encourage development and opportunities for new ways to develop resilience (Chandler, 2014; Paton & Johnston, 2006).

People's reactions after a disaster reflect how loss and disruption impacts on the community; personal factors that influence people's capacity to cope with and adapt to challenging circumstances make them more vulnerable (Horton, 2012). If individuals do not have the characteristics of resilience or access to social, spiritual or cultural resources to combat adversity they may have a slower recovery. Individuals without these skills can be taught how to alter their behaviour to ensure new coping behaviour is something they instinctively do which will aid their recovery in the future. Such results establish a direct link between learning positive coping strategies and behaviour change and something individuals innately do in a trauma setting (Satici, 2016). Goal setting and problem solving can be used to facilitate individual recovery (Bergstrand et al., 2015; Paton & Johnston, 2006). This enables individuals to regain a sense of control within their environment. Building resilience among individuals through strength based approaches assists people to deal with immediate psychosocial problems and practical issues that exist following a disaster (Saleeby, 2006).

Successful recovery from disaster can be described as resilient recovery if the system or individual does not stagnate or return to pre-level disaster economic function and has positive social interactions within the community (Davis & Alexander, 2016). Recovery efforts must not recreate vulnerability. Resilient recovery ensures people, environment and communities adapt and change and build mechanisms for problem solving in the future (Davis & Alexander, 2016). The aim of resilient recovery efforts creates a learnt behaviour which becomes something that is instinctively done in a setting. This approach aims to go beyond

returning to pre-existing conditions and aims to develop the positive ability of individuals, communities and environments to adapt and prepare themselves for the consequences of catastrophic events in the future through the embodiment of resilient characteristics (Islam et al., 2017).

Literature suggests a crisis may be personal (i.e., pertaining to a stressful individual event) or environmental (i.e. affecting an entire community) (Greene & Greene, 2009). Therefore, social workers need to be prepared and understand the micro and macro perspectives to address social issues after natural disasters. Official responses to managing mental health issues after the Christchurch earthquakes provided an increase in the availability of talking therapies to manage stress (Drolet et al., 2015). However, subsequent research has shown women did not want to talk through the trauma they had experienced, they preferred to have a purpose instead as previously illustrated in the Chapter two (Cooper-Cabell, 2013; McManus, 2015). Research from the Christchurch earthquakes highlighted that women elicited ways of coping by creating support networks with each other. They subsequently used these networks to forge socially creative voluntary organisations which gave them a sense of purpose as well as helping others (McManus, 2015). This is a valuable lesson during planning for recovery efforts in terms of preconceived ideas about what women require post disaster to maintain their resilience.

Role of resilience post trauma

Research has shown that people experience a wide range of differing emotions when trauma occurs (Paton & Johnston, 2006). Whilst many immediately go into action mode, others freeze, feeling paralysed by fear or panic. Individuals respond differently to natural disasters based on varied factors. They include any prior exposure to disasters, their psychological disposition, susceptibility to psychological distress, past episodes of resilience, as well as their mental preparedness. These factors all impact upon the individual's coping ability during and after the event (Norris & Wind, 2009). Also, the individual's location at the time of the event, who they were with and their immediate experience of the event will determine how well they can recover and foster resilience (Paton & Johnston, 2006).

Resilience post trauma is a result of individuals being able to interact with their environment and the processes that promote wellbeing or protect them against the overwhelming influence of fear, not coping or risk factors (Chandler, 2014). While some people may appear to have

recovered well on the surface this is not always the case. Their initial presentation during the emergency phase may differ significantly to how they cope after time has passed. Whilst people appear to cope on the surface, the ability to bounce back to a previous state does not always encapsulate the realities that have been faced or how easily people have adapted to change and their new reality (Lopez-Ibor et al., 2005). Some of these factors may be related to contextual factors, for example, where they live, access to social supports or financial implications from the disaster individually or within the community. The importance of the context of community post disaster has been discussed earlier in chapter two. People who live in communities that have had continuous patterns of neglect may experience a more negative outcome after a disaster (Greene & Greene, 2009; Harrison & Williams, 2016). Policy makers need to be aware of the disadvantages individuals face post disaster dependent on the context of their experience. Ungar (2013) argues individually focused interventions are less likely to foster wellbeing than interventions that first mitigate exposure to risk factors like violence, poverty and social marginalisation. Allocating additional resources and opportunities in environments that have been more exposed to disaster or who do not have the ability to recover will allow better opportunities for recovery.

Summary

There are various factors that interact to impact upon and effect resilience. The focus of this chapter was to identify the characteristics of resilience in order to provide a framework for understanding individual and community resilience during post disaster recovery. Origins of resilience and measures to develop resilient characteristics were explored including protective and risk factors which can help or hinder the process. The notion of recovery was considered and links made between how the concept of resilience can act as a protective factor post disaster and aid recovery. Risk factors that hinder the ability of individuals to foster resilience were also identified. The next chapter will explore the methodology and the collection process underpinning the chosen research alongside key ethical issues involved in the research process.

Chapter 4: Methodology and Method

Introduction

This chapter focuses on the methodology and methods used for exploring the post disaster effects on mothers after the 2010 and 2011 Christchurch earthquakes. The chapter begins by outlining the rationale for adopting qualitative methodology as the research approach. It provides details of six qualitative interviews with mothers who had experienced the Christchurch earthquakes and explored their experiences in terms of coping strategies and resilience. The research methodology will address how the research design involved study participants, methods of collection and processes and the procedures by which the data was organised and analysed. Finally, ethical considerations and strategies which have enhanced the research credibility are discussed.

Study design

Qualitative research has long been preferred for explaining human experiences as it can provide detailed information and give insight into people's individual experiences (Grbich, 2013; Guest, Namey & Mitchell, 2013). Therefore, using a qualitative research design in this research was essential, as the study aimed to explore mothers' experiences of the Christchurch earthquakes. Grounded in the social sciences, qualitative research allows the researcher to explore participants' life experiences from within their social context, aiming to understand complex relationships, while recognising the uniqueness of each individual case and context (Denzin & Lincoln, 2011). This research is guided by interpretive descriptive methodology. Importantly, interpretive enquiry is primarily concerned with understanding people's experiences (Jackson, Drummond & Camara, 2007). Consistent with the purpose and objectives of this study, this interpretivist paradigm considers the existence of multiple realities, where knowledge is created during the interaction between researchers and participants (Guest, Namey & Mitchell, 2013).

The principles of interpretive description methodology were applied to explore the research aims and objectives regarding understanding the lived experience and shared meanings of mothers' everyday realities of the earthquakes (Denzin & Lincoln, 2011). Patton (2015) states that a qualitative study captures and interprets stories and meanings from the perspectives of those involved in and those touched by an event. Therefore, the chosen methodology

provides a means by which the researcher could understand the complexity of everyday life after the earthquakes (Braun & Clarke, 2013). Congruent with interpretive description, this study explicitly allowed the researcher to engage with mothers who described the phenomenon of the Christchurch earthquakes and provided a fundamental source of insight into experience and resiliency. The use of qualitative research in this study allows individuals to share their stories, provide more rich detail and reflect on their lived experience post the Christchurch disaster.

Study participants

Qualitative research typically has a small sample size to recruit rich descriptive material to illuminate the topic being investigated (Patton, 2015). Two types of sampling were used in this research. The first one was convenience sampling which refers to sampling a population based upon its convenience and proximity to the researcher (Denzin & Lincoln, 2011). To ensure ease of access to participants and time efficiency, the researcher chose to approach a local school close to where she lived to recruit mothers. If unsuccessful in recruiting the necessary sample size from this school, the researcher had already identified a second local school. Criterion sampling was then used in conjunction with purposive sampling to select six suitable participants based on specific selection criteria (Patton, 2015). The four inclusion criteria for the participants of this study were: (1) mothers over 18 years of age; (2) who were residents in Christchurch during 2010 and 2011 earthquakes and are currently living in Christchurch; (3) have not been under the care of mental health services in the last 12 months; and (4) were competent in communicating in English during interviews. The rationale for excluding mothers who had recently been under the care of mental health services was to ensure they were not re-traumatised by revisiting their experience of the earthquakes. As with all criterion-based purposive sampling, the selection criteria were designed to maximise the study's representative credibility, therefore best meeting the research aims and objectives (Guest, Namey & Mitchell, 2013). Information rich cases are those where the researcher can learn a great deal about issues of central importance to the purpose of the inquiry, hence the term purposeful sampling (Patton, 2015).

Upon receiving ethics approval from Massey University Human Ethics committee (Appendix A), the school was contacted via a telephone call and a meeting was successfully arranged to meet with the principal. At this meeting, the principal was provided with the initial

introductory letter (Appendix B), the information sheet (Appendix C) and a copy of the interview schedule (Appendix D). At the end of the meeting, the principal agreed for the research to be advertised in the following week's school newsletter (Appendix E). Between July 2015 and February 2016, six mothers were successfully recruited and participated in the individual interviews.

Data collection

Individual interviewing, considered one of the most important qualitative data collection methods constituted the primary source of data collection for this study (Grbich, 2013; Patton, 2015). To gain an in-depth description of the mothers' experiences after the Christchurch earthquakes and an understanding of their responses, each participant completed a semi-structured, face-to-face hour-long interview. The analysis of interviews from multiple participants provided rich experiential data. The use of semi-structured interviews involves an informal, interactive process that utilises open-ended comments and questions (Patton, 2015). Semi-structured interviews also allow the researcher to stay on the focused topic area and adjust questions if required in order to illicit more information (Guest, Namey & Mitchell, 2013). Open-ended questions were used (Appendix D) and were the most appropriate in encouraging the participant to speak freely about their experiences from their own perspective. This allowed the researcher to explore this experience alongside the participant to gain a more in depth understanding of the material and create meaning (Creswell, 2014). Importantly, Patton (2015) states having a flexible approach to research can allow for increased richness of information gathering as it can accommodate for unplanned circumstances such as new ideas and experiences that are introduced as a result of free - flowing conversation.

The researcher was responsible for establishing the research encounter as a place in which the participants would safely describe experiences that matter to them that were pertinent to the research. The interview schedule was developed with guidelines and prompts to initiate a discussion (Appendix D). Bonner and Tolhurst (2002) state the interpretive researcher must create a dialogue between practical concerns and lived experience through engaged reasoning and imaginative dwelling in the immediacy of the participant's worlds. The questions were formulated by identifying key issues and components that were prevalent in literature about the Christchurch earthquakes. Questions were created with the aim of encouraging mothers to

reflect on their experiences of the earthquakes and to illicit information about their feelings, experiences and beliefs. The objective of each interview question endeavoured to obtain the participants thoughts and feelings in order to understand their experiences of the earthquakes.

Upon receiving an email from the participants to confirm their participation in the research, a mutually agreed time and place to meet was arranged. The interview began with an overview of the purpose of the research and the researcher highlighted the earthquake support numbers provided on the information sheet. Following this each participant gave verbal and written consent. During each interview, participants were invited to describe and discuss personal experiences of the Christchurch earthquakes. The researcher encouraged the participants to stop the interview if the questions became uncomfortable or distressing. Fortunately for participants this did not occur. If participants did not fully understand the question the researcher offered careful prompts and encouragers, ensuring they were not directing the content of the information. Interviews were done collaboratively in the form of a conversation so that both parties could work as partners to illicit meaning behind experiences (Grbich, 2013; Guest, Namey & Mitchell, 2013).

All interviews were digitally recorded and transcribed verbatim on the same day as the interview to capture all verbal and non-verbal data. Overall, the interviews lasted from between 50 minutes to one hour. The length of the interviews in this study were similar to other interpretative description studies, which reported interview durations of between 45 minutes and two hours and these time frames were considered appropriate interview durations to gain depth of information (Carey, 2012; Guest, Namey & Mitchell, 2013). All participants were informed that copies of transcripts would be offered to them to check for accuracy however all declined to check the transcribed data and were satisfied the digital recording would be deleted and destroyed once the research was completed. The researcher kept field notes to capture initial impressions of the interviews including surprises, key themes and interesting observations. In interpretive description, experiential knowledge is valued as a strength in supporting the study and establishing a base of evidence and experience upon which the study will build (Denzin & Lincoln, 2011).

Data analysis

Data was analysed using an interpretive descriptive approach underpinned by thematic analysis. In qualitative research, data collection and data analysis can occur concurrently as the interviewer identifies similar themes and notes them down after the interview (Braun & Clarke, 2013). The benefits of data collection and analysis concurrently allows for exploration of new concepts that emerge across the remaining interviews. This embodies the opportunity for people to tell their stories allowing the researcher to analyse and interpret information in order to provide cultural and social meanings from the event (Patton, 2015). The researcher analysed the interview data information for patterns and themes, which assisted them to learn about a specific group within society after the earthquakes namely Christchurch mothers.

The intention of identifying themes was to generate new concepts, explanations and results (Patton, 2015). These themes emerged after reviewing the transcripts following interview completion. Thematic analysis is a method that is used to locate, analyse and report themes within data. Braun and Clarke (2013) argue thematic analysis is the foundational method for qualitative analysis. It is described as a flexible method which can potentially provide a rich and detailed account of data. Thematic analysis began informally during data collection by the researcher writing down similar ideas and topics that had arisen in prior interviews. In order to commence data analysis more formally, it was important for the researcher to become more familiar with the data by listening and reading through the transcripts multiple times and coding similar areas of interest that related to the research aims and objectives. At this stage, meaning was beginning to be interpreted through transcription of the data and interpretive skills were required to analyse the data appropriately.

Thematic analysis in this research involved searching back and forward across the transcriptions of interviews to find repeated patterns of meaning for mothers which could be grouped accordingly. Once the themes had been identified and analysed it was easier to outline main themes and sub themes within the data. After initial ideas had been identified, they were linked back to the original research objective regarding understanding mothers' post disaster experiences. It became apparent that some themes were more pertinent than others and they related more clearly to the research topic. Following the identification of the most relevant themes that would be utilised to illustrate the research topic, a detailed analysis

was completed outlining how themes related to the research aims and objectives. The literature review and research about the characteristics of resilience helped inform the generation of pertinent themes that were most relevant to the research topic.

Trustworthiness

To ensure the rigour of the data and its outcome, regular supervision sessions between the student researcher and supervisors were utilised to reflect on the data and to discuss the concepts that were found during the analysis. All participants were also offered the opportunity to read their own transcripts for verification. An audit trail was used to document field notes on decisions made regarding the choice of themes and the thoughts and feelings that shaped the research.

Ethical considerations

Ethical approval was sought and approved by Massey University Human Resource Ethics Committee (application 15/43, see Appendix A), before research commenced. The research was conducted in accordance with guidelines set out by Massey University's code of conduct for research with human participants. There are four common principles relating to ethical research which guided this research process; they are autonomy, beneficence, non-maleficence and justice (Greig, Taylor & MacKay, 2013). To ensure these principles were upheld all participants were advised of the details of the study, their involvement and rights by way of information sheets (Appendix C). Participants consent for individual interviews were collected through the provision of consent forms (Appendix F), which were signed prior to the interview. Informed consent ensures individuals make a personal choice about their involvement in the research (Braun & Clarke, 2013). Individuals were also provided with information sheets which outlined relevant information regarding the research process including, data collection, analysis and the aims and objectives of the research.

Electronic data was stored on the researcher's computer which was password protected. Participants were provided with counselling and earthquake support service information in case of distress following the interview (Appendix G). Individuals were also advised of their rights prior to negotiating an interview time and before commencing the interview. These rights included informed consent, voluntary participation, confidentiality protection and the

right to withdraw from the research. The participants were also offered the opportunity to view and make changes to the transcribed interviews.

It is crucial for social researchers to clarify their research roles, especially for those utilising qualitative methodologies to make their research credible (Grbich, 2013). The researcher was an insider researcher as she was part of the research group; a mother who experienced both Christchurch earthquakes. There are advantages and disadvantages to being an insider during the research process which is dependent on the researcher's role, aim of the research and the type of research conducted. While there are a variety of definitions for insider researchers, generally, insider researchers are those who choose to study a group to which they belong, while outsider researchers do not belong to the group under study. Bonner and Tolhurst (2002) identified key advantages of being an insider researcher which included having a greater understanding of the culture being studied and the ability to understand the emotions of those involved. Further, insider researchers know how to best approach people they wish to study. In general, they have a great deal of knowledge, which takes an outsider a long time to acquire (Bonner & Tolhurst, 2002). Although there are various advantages of being an insider-researcher, there are also problems associated with being an insider. For example, greater familiarity can lead to a loss of objectivity. Over familiarity can include unconsciously making wrong assumptions about the research process based on the researcher's prior knowledge which can be considered a bias (DeLyser, 2001; Hewitt & Taylor, 2002). Any concerns regarding bias were addressed through discussion in supervision in order to address any issues that may arise as a result of the researcher's personal experiences of the earthquakes and to manage any conflicts or emotions that arose during interviews or exploration of the data during the research process.

Particular ethical issues were also explored before the interviews took place. For example, because the researcher was a trained social worker I needed to ensure I did not engage in social work practice with the interviewees. I was aware I may feel a conflict of interest and ensured the interview was focused on individual's experiences of the earthquake rather than on completing "social work" interventions with the interviewees. I ensured I prevented against the possibility of engaging in social work practice with the mothers by outlining the helpline numbers at the beginning of the assessment and directing the mothers to them if it appeared they needed further support after the interview. This issue was discussed with interviewees so they could feel relaxed enough to talk from their own perspective and to have

the opportunity to access support if they required it. For participants to talk freely, assurances of confidentiality were offered with a caveat of having to share any information with appropriate parties if people may be at risk.

Summary

In conclusion, this chapter provided a discussion on the choice of methodology and methods used in this research. A qualitative approach was the most appropriate methodology to gain an in depth understanding of the post disaster effects of mothers' lived experiences of the Christchurch earthquakes. This is because a qualitative approach ensured each participant could share rich descriptions of their experience of the event and the researcher could hear and interpret the 'real' experience of this event for the individual. The method used was semi-structured interviews which aligned with the qualitative methodology. The use of the individual interview allowed for an expression of rich honest 'raw' material. The data provided was analysed and common patterns and themes were identified using thematic analysis. The integrity and overall credibility of the study was maximised by ensuring the study was designed and conducted congruent with the evaluative criteria required for interpretive description methodology as outlined by Denzin and Lincoln (2011), with epistemological integrity, representative credibility, analytic logic and interpretive logic. These criteria are considered essential to ensure the research is theoretically and technically reliable; thus, allowing the researcher to claim the study as both rigorous and credible. Trustworthiness was also explored alongside limitations of the study and ways of extending the research were outlined. Finally, the study design ensured ethical considerations were considered, particularly with respect to ensuring each participant's privacy. The following chapter will present the data obtained from the six mothers who participated in the study.

Chapter 5: Results

Introduction

This study focused on exploring the post disaster experience of mothers after the September 2010 and February 2011 earthquakes in Christchurch. Analysis of the data collected from interviews with Christchurch mothers resulted in the identification of several themes related to the topic. This chapter introduces the participants and their context. It presents the results of the research and gives voice to mothers' experiences through exploration of their earthquake experience, individual impacts, family and relationship changes and rebuilding and support services. The results are discussed in detail in the following sections.

The participants

Pseudonyms were used to anonymise the participants. The six participants were female aged between 25 and 40 and were married. They all lived in Christchurch and had children who were school age or younger at the time the study was conducted. All of the participants were present in Christchurch during the September and February earthquakes. Four participants were originally from Christchurch and two were from overseas. Four of the mothers were working at the time of the earthquakes and none of the participants in accordance with the eligibility criteria had contact with mental health services in the last twelve months.

Table of Participants information

Table 1. Brief descriptions of study participants

Name	Age	Marital status	No and age of children	No of children living at home at the time of earthquake	Employment status
Clare	Mid 40s	Married	4	3	Employed
Ann	Mid 40s	Married	2 (under 5)	2	Employed
Sam	Mid 30s	Married	2	2	Maternity leave
Beth	Late 40s	Married	1 (under 5)	1	Unemployed
Cathy	Early 40s	Married	2	1	Employed
Mary	Early 40s	Married	2 (under 5)	2	Maternity Leave

Clare was in her mid-40s and had been married for 17 years. She had three of her own children and one step child. At the time of the September earthquake her eldest son was 28 and living away from home; her daughter was nine and her youngest son was four. Her step daughter was 20 and living with Clare at the time of the event. Clare worked as a psychiatric nurse in Christchurch hospital and considered herself a “resilient person” prior to the earthquakes. She has lived in the same area of Christchurch all her life.

The second respondent was Ann who was in her mid-40s. She had been married for 20 years. Ann had two children, a son aged four and a daughter aged one. Ann moved from the UK to New Zealand with her husband 10 years ago, and was a full-time university student. She moved to New Zealand for family reasons and during the interview she expressed that she had started to feel quite settled and happy, *it took a long time for me to settle in New Zealand. I've been homesick for years and only just started to feel like I could stay here long term.*

Sam was the third respondent who was aged in her mid- 30s She had been married for ten years. She had two children aged two years and the other child was two weeks of age at the time of the September earthquake. She worked as an Allied Health Professional although was on maternity leave at the time of the September earthquake. She was originally from Christchurch and had extended family in the area. She has lived in the same area of Christchurch all her life, *I was born here, grew up here and had my kids here. I wasn't just going to leave...just like that.*

Beth was aged in her mid-40s and had been married for 17 years. She had one child who was four at the time of the earthquake. She was employed in hospitality prior to the September event; however, she lost her job when the hotel closed due to damage sustained during the event. She was still unemployed at the time of the interview, *I wasn't in a hurry to return to work after what happened. I wanted to be available to my son so I could get to him if I needed too.* Beth was originally from a rural settlement close to Christchurch and explained that she had extensive family support in the local area.

Cathy aged in her early 40s, was the fifth respondent and was originally from Ireland. She moved to New Zealand 10 years ago, and worked at the university. She had been married for 10 years and had one son aged two at the time of the September earthquake. She had another

child since the earthquakes who is now 18 months old. She described herself as extremely level headed, *I've always been pretty level headed when it comes to times of crisis.*

Mary had two children aged nine weeks and two years of age at the time of the September earthquake. She had been married for seven years and was originally from Kaikoura. She had been working as a nurse although was on maternity leave at the time of the September event, *I had been off work with my baby for three months when September happened, my whole maternity leave changed after that.* Mary was in her early 40s', has lived in Christchurch all her life and has extensive family supports in the area. She had returned to work part time in the months preceding the interview.

The immediate and short-term impacts of the earthquakes

The September and February earthquakes were significant events for all participants in the study. The following section describes their experiences during and soon after both events focusing on psychological and social impacts on the individual and how these were managed.

Most of the respondents described their experience of the Christchurch earthquakes in terms of the emotions of fear, panic and concern for the safety of themselves and their families. All the respondents identified that their feelings of fear and helplessness were exacerbated by telecommunication breakdowns and being unable to reach their loved ones particularly after the February earthquake. Ann was having lunch with her sister during the February event and described an overwhelming fear of panic when it struck. She explained she felt paralysed, unable to move, *my sister and I were just stunned and she grabbed my hand. The children were silent. Nothing fell or no-one was hurt in front of us or anything but it was the scariest thing I have ever experienced.* Ann said she wanted to get hold of her husband quickly so the whole family could be together, *I tried to ring him but the phones were down. I tried to keep it together for the sake of the children but as the aftershocks kept coming and the phone refused to connect I worried something had happened to him.* Similarly, Sam's fears were heightened by the fact that her husband worked in the CBD and she could not get through to him at his office or on his cell phone. She said *I just had to focus on the baby and keep busy if I did that I would be alright.*

Three of the respondents who were with their children at the time of the February earthquake described trying to manage their own anxiety in front of their children while aftershocks persisted and with no news of loved ones. Ann described how an aftershock hit when she was driving home after the initial February event and said although she was frightened she was able to remain calm in front of her children who were *watching my every move*. She said she was conscious about her reactions to aftershocks and how this would impact on the children. She said, *the children were fine if I seemed fine. I knew I had to be strong for them and somehow, I managed to get us home through probably the greatest fear I have ever experienced*. All the respondents were conscious about how their reaction could influence and impact their children. Beth highlighted how she was feeling immediately after the earthquake. She said she was terrified during the initial earthquake describing how her house was badly damaged and how she feared for both her son and herself and described herself as being *totally freaked out and my son acted in the same way*. She said it was only after her son went to bed she could have a *little cry or discuss my fears with my husband*.

Both Cathy and Clare who described themselves as *resilient* and *level headed* were the respondents who talked more about supporting others once they had ensured the safety of their children. Cathy and Clare were both at work when the February earthquake occurred. Cathy was working on the 4th floor of the University of Canterbury when the February earthquake hit. Her 2-year-old son was at day care and her husband was working on the 6th floor of the same University. Cathy reported she immediately felt fear and anxiety when she realised what was happening. She had a student in her office and got under her desk with him for safety. Cathy said she quickly thought about her son and of ways she could get to him, *I knew my son wasn't too far away but as I was on the fourth floor I hoped the stairs hadn't collapsed because they were the only hope I had of getting to my son*. Clare was on her way to work during the February earthquake and immediately turned back and overcame many obstacles to get to her children who were at school. She was working a night shift in Christchurch hospital at the time of the September earthquake and her family were at home in bed. Clare's first thought was for her family and once she knew they were safe she turned her attention to who she could assist. She said *I was fearful for my life, I thought this was it but as soon as I knew the kids and my husband were okay I went straight to the ambulance area to see how I could help*.

Half of the respondents identified that despite feeling anxious and helpless they felt better when they could assist others. Mary and Sam talked about ‘people on the east side’ being worse off. Sam described a conversation she had with her mother about feeling helpless that she could not do more to assist others. As a result, she and her mother *did some baking* and took it over to the community hub set up in the area. Mary also said she wanted to do something to *take her mind off things*. She advised she had offered to go into work on a casual basis to assist if they were under increased pressure. Overall, the mothers in this study indicated that they would rather keep busy and focus on helping others than dwell on recent events.

In their accounts of events related to the earthquakes each respondent identified differing impacts. These included changes to their environment which incorporated damaged homes and infrastructure, social impacts including changes to routine, employment, social networks and psychological aspects which included increased fear and anxiety. Mary who was on the outskirts of Christchurch during the September earthquake described watching the news on February 22nd and the impact this had on her. She said she felt more traumatised and panicked than in September as she personally witnessed the physical damages in her own home without her husband by her side. She said, *I mean I couldn't believe what I was seeing. People had died this time. I felt sick it could have been anyone of us.*

Four out of the six respondents reported learning new skills which assisted them in their recovery after the earthquakes. These included learning to use the barbeque when the power was off in order to cook meals. Some mothers also reported they had never sanitised water before and learnt how to do this when they did not have access to water. Other respondents learned new skills and games when having to entertain their children who did not have access to their usual Wi-Fi devices and television. Beth said *I had forgotten how to play some of the games we rooted out of the cupboard that day and relearnt them whilst teaching my son how to play for the first time.*

Two of the respondents identified how their experience in September influenced their actions during February's earthquake. They described how their actions and responses in September assisted them on a physical and psychological level to manage the February event. Mary said, *I knew what was coming as soon as I heard the noise, it was the same sound as September.* She said she reacted instinctively to protect her kids, *I just threw myself on top of the kids*

until the shaking stopped, I was terrified and so were they. Mary's previous experience of the September earthquake encouraged her to act quickly to protect the safety of her children. She said her children *mirrored her anxiety during September and they had an awareness of how scary the shaking could be and that things would probably fall down.* Clare also said *during September the bridges were closed over the estuary to my house* and because of this she knew she needed to turn around and get to her children as soon as possible because it was highly likely they would be closed again. It appeared some respondents like Mary and Clare could use lessons from their experience of the September earthquake to positively influence their actions during the second event.

Most of the respondents compared their physical environment during February to September and as such this gave them a gauge as to the extent of the damage. Sam said *I knew when I saw the water on the road it was bad out there so I decided to stay put.* After the February earthquake, Clare immediately began to organise water for her community, using her experience in September as an indicator that locating water should be a priority. She said, *we were without water for a week in September and this time everything seemed a lot worse. You only had to look around to know we would be without water and power for much longer this time around.* All the respondents had an awareness that telecommunications would be down and therefore the majority did not panic when they could not immediately get through to loved ones. Mary said she was unable to get in touch with her husband for some hours after the February event however remembered in September the phones were out of order for some time. Mary said *I remember them saying you needed to stay off your phone for ages after September. I remember they were down for hours and hours after that happened so I tried not to panic. I guess I knew my husband would get in touch with me as soon as he could.*

Returning to “normal” following the February earthquake

Getting back to a sense of normality encompassed getting back to a routine as soon as possible for most mothers. Most respondents felt that to recover quickly it was their responsibility to organise a new routine for their families as quickly as possible. Cathy who was employed at the time of the February earthquake commented on feeling annoyed when her husband expected her to organise the new routine and sort out new childcare while he continued to work. She said, *the day care was closed for a while but I was still supposed to be at work. My husband expected that I would stay at home and look after our son and he*

would go to work. Ann also felt under pressure as she tried to establish a new routine to manage her work and home life. She described feelings of guilt when she turned up to work and other mothers had decided to stay home with their children. Ann said *my colleagues said I was being really brave coming to work and leaving my children. To be honest this just made me feel like crap*. Clare also said she felt responsibility to achieve a balance between working and managing the new routine at home in order for her children to feel settled. She said, *routine was very important. I had to show the kids that life goes on and mum and dad still go to work*.

Ann's young son broke his leg five days after the February event and she talked about not wanting to call an ambulance as she felt the hospital would be too busy. She said *after some discussion we decided to go to after hours instead to get him checked out and I felt terrible when they called an ambulance to take us to the main hospital*. Despite her young son's broken leg, Ann felt she should be able to manage without relying on outside support during this period of high demand. Similarly, Cathy reported everybody around her looked tired and burnt out because sleep in Christchurch was always disturbed and this was the reason why she felt she had to manage without external support from other agencies. This is illustrated in the following comment,

I was in fight or flight mode. I was exhausted I was working so hard and my sleep was always broken but I felt the routine had to continue. You had to manage because nobody had extra time or energy to offer us support. They had their own stuff to deal with. (Cathy)

Managing in a changing environment

All respondents agreed their family had been impacted by the earthquakes in term of having to adapt, move or adjust to new physical environments. Half of the participants reported that a major impact had been moving their children away soon after the event due to the damage sustained to their homes. Disturbed nights and lack of infrastructure including lack of power and water, led most respondents having to make decisions about their physical environment. Beth commented, *I mean I just didn't feel safe around there. We didn't have power or water and I couldn't expect my son to live in that. I was even too scared to park under cover at the mall*. Similarly, Clare decided to move her children out of the affected area for a few weeks

while the aftershocks were severe as she was fearful they may be harmed physically and/or psychologically by any further event. Sam was also struggling to manage in the changing environment, she said, *I was just so exhausted and tearful when the baby wasn't awake I was woken by an aftershock. After two days, I told my husband I was going with or without him... I was pissed off, irritable and frustrated.*

It is evident most of the respondents made sacrifices financially and emotionally to ensure the impact on their families was minimal. Two of the respondents were physically separated from their partners as they moved away with the children while their partner returned to assist with the rebuild or return to work. Mary described feeling isolated when her husband returned to work and she stayed with her sister *it was hard managing without him. I was scared that he was still in Christchurch but we still had bills to pay so he had to go.* Beth lost her job after the September earthquake and stayed with her mother for three months with her son while her husband continued to work in Christchurch. When Beth returned to Christchurch she chose not to seek employment as she wanted to be available to her son. Beth said, *I didn't want to leave him unless absolutely necessary. I made the decision to transport him to WM for school as I knew we would be there eventually. It was a 40-minute drive from where we were so I couldn't manage work alongside doing that. It was tight for a while but we managed.*

Two of the respondents described feelings of guilt and helplessness because they could not make the choices they wanted for their family. Those that had not followed advice regarding preparing disaster kits felt guilt and failure that they had not prepared adequately for their children. Ann said *I felt terrible that we had to queue for water when if only I had listened we could have stayed inside instead. I won't be making that mistake again.* They reported they felt useless as they had not prepared adequately for their current situation and found this difficult to manage. Cathy lived in a cold and damp house with her son who had asthma and said she *felt terrible that I didn't have anywhere to go to give my children a break from the aftershocks.*

Clare identified that she was a key supporter and contributor in her community during both earthquakes and felt she had to manage her frustrations as she *played a key role in her community.* She said *I felt because I am a nurse that I should be available as a primary support person in the community and at work.* Clare reported she was well known in the

community after the September earthquake and because of this people found it easy to ask for help or talk to her about their concerns.

Starting over

Respondents were asked whether they had ever considered leaving Christchurch permanently or if they chose to stay. Two of the mothers indicated family commitments were the reasons they could not relocate. Mary illustrated this when she explained that she was born and bred in Christchurch and *this is where I'm from. I'm not sure where else I would go*. Sam also explained that her extended family were in Christchurch and although she wanted to go initially, she *couldn't imagine not living here ever again*. Both mothers identified that they needed their family for psychological and practical support for themselves and their children. Sam acknowledged the important role of her mother as she said *mum always helps with the kids. I wouldn't know what I'd do without her nearby*.

Most of the respondents were asked whether they reconsidered their decision to move away after the February earthquake. They identified that although they moved away initially to escape the aftershocks, the real challenge emerged when they had to make the decision to return and rebuild. Half of the respondents indicated that the decision to move away from Christchurch caused conflict within their extended family and friendships. Clare talked about how this fragmented her family when she decided to return her children to Christchurch after them being out of the area with her extended family for a week. Clare reported that her relationship with her extended family has completely disintegrated since the Christchurch earthquakes and was now beyond repair. She identified she *had heard families were supposed to become closer after trauma but not mine*. Clare said she lived 200 metres from her sister but has no contact with her since the earthquakes because her sister thought *I was being unfair to my children by making them return to Christchurch and I felt if they were stressed or frightened I would deal with it. I would not compromise them or their safety*. She said her parents agreed with her sister and thought she was placing her children in danger by returning them to Christchurch but she said *I know what's best for my kids and I didn't appreciate the additional pressure from them*.

Several of those interviewed described feeling weak or guilty when they mentioned wanting to move away and start again. Different opinions emerged depending on what side of Christchurch you lived in. Ann said *people on the west side didn't seem to understand how*

hard we on the east side had it.... they didn't seem interested anymore in listening to the problems the rest of us were still experiencing. Beth described a similar experience, I got closer to the ones who experienced the hard times as we had similar things in common. I would just chat to them about things instead. Other respondents who had moved to Christchurch from overseas made different choices about wanting to stay and assist in the rebuild. Ann said this caused conflict with some Cantabrians who felt that people should be loyal to Christchurch and stay and rebuild. Beth said it crossed our minds to move away permanently but until we knew about the house and what was happening with it we couldn't go.... and then things settled down and we decided to stay as my husband had a job and we had a mortgage here. One respondent identified that she felt she needed to stay in Christchurch to help assist in the rebuild. Clare said we have lived in S. all our lives. We stayed away a couple of nights and then came back. We took over the support roles in the area. Lots of people left and it became a deserted area. My husband and I would collect containers and get everyone's water. We supported others.

The post disaster phase was a time when major decisions had to be made involving where to live and whether to stay or go which caused conflict through differences of opinion between respondents and family and friends. This was articulated well by Sam who said *I didn't know what to do for the best for my children. I thought we should be together as a family but I was also scared to unsettle the children and leave Christchurch.* Sam said the decision to stay or go caused conflict between her and her husband because he believed they should stay together as a family, but she felt the continuous aftershocks would cause her children continued anxiety and long term mental health problems.

Three mothers who left Christchurch to stay with family would have preferred another temporary accommodation option rather than having to rely on family. Cathy commented that *the hardest part was my family not appreciating the experience we had been through. They did not get the exhaustion part. There was no way I would have stayed with them even if they were here. We would have ended up killing each other.* Most mothers reported that the lack of understanding from others caused stress and unnecessary pressure on relationships. Clare said *my relationship with my family has never been the same since the earthquake, they felt we should all stay away.* Overall, mothers' narratives demonstrated heightened emotions and stress including increased conflict within their relationships and a lack of control within personal and family situations.

Respondents were asked to identify how they managed their emotions and subsequent conflict within their relationships. They have described the importance of staying strong and rebuilding which are discussed in the following section in more detail.

Staying strong

The importance of 'staying strong' in front of the children was an important factor for many mothers who described feelings of guilt and failure if they broke down in front of them. Mary felt she was unable to show her emotions while the children were present and felt if she showed any fear or anger this would impact on her children's recovery and general wellbeing. She described how she felt when she heard people had died and said *I just burst into tears and my son who was two at the time came and hugged me and said its okay mum I'll look after you if more wobbles come. I felt terrible I mean I shouldn't have done that.* Ann said she also felt under pressure to manage her emotions in front of her children and said she needed to be strong, *I felt I did a good job of not showing them my fear but when my sister in law came around she was a complete mess so I had to ask her to calm down.*

The earthquakes and subsequent damage to properties and neighbourhoods resulted in relocation and population change for a large percentage of the population of Christchurch. After the Christchurch earthquake in February 2011, many schools and pre-school facilities were closed or relocated elsewhere and mothers found themselves in an unfamiliar environment without their usual support networks. Clare said *my parents and sister moved away straight away despite what support my family might need.* Increasingly mothers found themselves without social, psychological or practical support to manage the impact of the event. Mary stated she felt lonely and isolated when one of her good friends left for Australia shortly after the February earthquake, *she said she just couldn't cope with the earthquakes. I don't blame her I guess as I knew she couldn't stay, but I still miss her even after all this time.*

Most of the respondents identified that they had been impacted negatively by the displacement of their communities. These impacts included losing their sense of belonging to a community which subsequently resulted in them feeling more isolated. Beth said she now had limited opportunities to identify with her peer group to engender support. She talked about the informal catch ups she used to have when picking her child up from day care which

was no longer an option as it had closed. She said *I missed the little catch ups we used to have at drop off and pick up...silly really but you don't realise how much that social contact matters until it's not there anymore.* Much of the infrastructure including the local doctors, dentist and corner shop near where Beth lived closed due to safety concerns and because she was made redundant she lost contact with colleagues. Beth described her sadness when she said *I even had to find a new GP as our surgery closed. I had been with her for 20 years.*

Two of the respondents could identify networks they had formed because of the earthquakes that had assisted them with their recovery. Clare said she had formed *strong relationships with those in her community that stayed after the February earthquakes.* She explained how they had worked successfully together to set up support networks in the area which kept her focused. Cathy was also able to identify new friends and supports she had made with neighbours who had initially assisted her after the earthquakes. She explained how they had *agreed to check and secure each other's and other neighbours houses* if another event occurred.

Rebuilding

Whilst all respondents agreed that their lives had changed considerably since the earthquakes some could identify positives that they took forward. Three respondents reported the frequency of the aftershocks although frightening at first, provided them with an increased tolerance and assisted them to manage any negative visible reactions. Cathy identified this was a positive for her child as they coped by turning the aftershocks into a game whereby *we all started to guess what size aftershock it was when they kept happening. It became kind of a game. Who could get the closest? We all got pretty good at it after a few years.* Ann talked about her parents visit from the UK. She said *I think we had an aftershock on Boxing day one year when my parents were over. You should have seen their faces when it hit. The kids and I sat there and guessed a 4.5 while they ran for the door frame. The kids thought it was very funny.*

All respondents acknowledged that they experienced a certain level of stress during the earthquakes while juggling many responsibilities, including children, the home, relationships and work; but one of the most stressful experiences identified was dealing with the Earthquake Commission and insurance companies as some mothers reported they were more

taxing than the event itself. Sam illustrates this with the following comment, *the stress of the earthquake was over in that moment, it was the enduring stress and the everyday fight with the government departments that caused the real anxiety. Every time you thought you were getting back to normal you would get a call or a letter from them.* Beth stated the impact of the stress relating to sorting the claim on her house continued to have an impact on her husband today. She described his mistrust of people which impacted on their relationships with new people and the extra responsibility she faced trying to manage tasks he used to do prior to the earthquakes. She commented, *I find he gets angry and frustrated more quickly and usually takes it out on me or leaves me to deal with all that sort of stuff now.*

All the respondents except one had moved to other local areas since the February earthquake. Five years on they had made connections in their new community. Beth commented that she felt she had managed to make connections more easily because of the event as she had become used to *making good out of a bad situation.* She said she made more of an effort than she did before the earthquakes as *you didn't know what was around the corner. I make the effort to say hi and people will say hi back whereas we didn't know anyone before.* Cathy also described an improved sense of community in her new location and said *in our street we have a very strong support network where we live now as most of us were relocated after the earthquake. I think everyone has that because of their experiences.* Mary who had already planned to move before the earthquakes agreed that she felt a stronger sense of community in her new environment. She commented, *I know if anything happened again I could just go straight to my neighbours. I think the change is being part of a smaller community and you know...that we have all been through it before.*

Most of the mothers made decisions which assisted them to adjust to their new reality such as changing jobs or enrolling their children in facilities closer to their work. The majority identified that this was driven by fear and anxiety about not being able to access their children in case of a future event. Two mothers who had been working or on maternity leave at the time of the earthquakes had decided to alter their working lives because of the earthquakes. They reported that after evaluating what they had been through and the loss and grief they experienced, they felt they wanted to be more available to their children. Both mothers had also moved to new areas after the event. Ann said *I felt quite nervous about leaving the children after the earthquakes. I chose not to do the extra days at work that I used to do. The aftershocks were just so frequent I wanted to be around if I needed to get to my*

children quickly. Mary who was on maternity leave also decided to alter her hours of work. She explained she evaluated how long it would take her to get to her children if an event happened and *thought about those poor mothers who were killed who would not have the opportunity to see their children grow up. I thought I should be grateful for what I have so decided to make a lifestyle change.* The mothers who made changes identified that these changes were primarily made after their experience of the February earthquake. Ann reported these changes *relieved my anxiety* about being better able to cope with effects of a future event and how best to manage themselves and their families.

Whilst most mothers indicated they did not want to accept help from external agencies, two interviewees explained the reasons why they felt they could not even if they needed too. Beth stated *I think there was plenty of support offered and I was aware...you didn't want to be a burden...Perhaps I should have sought counselling but I thought there were people worse off than me.* Similarly, Cathy said *Red Cross may have come around once a few days after to check on me but I remember directing them to the old couple next door. I said they were feeling the brunt of it rather than me.* It was apparent despite facing adversity from the situation and feeling under pressure themselves, some mothers felt there were other people who deserved support services more than they did.

Summary

This chapter presented the results from interviews with six mothers who experienced both February and September Christchurch earthquakes. Firstly, the chapter introduced the mothers and included details which provided a context about who they were. Secondly, the chapter described mothers' experiences of the earthquakes including where they were when the earthquakes occurred and their actions immediately following the events. This was followed by details about how the initial trauma impacted on each participant and provided information about changing relationships because of the event. Environmental impacts on families were also discussed and resulting changes in mothering roles. The chapter also explored factors associated with rebuilding including any ongoing battles with EQC, impacts on children and reflections on how life has changed. Finally, the chapter concluded with a section on mothers' views on support after the earthquakes including who or what they relied on for support and whether these supports were beneficial. The next chapter will provide a discussion of the results. It provides links with the literature review, the data and theoretical

framework in order to gain an understanding of the lived experience of mothers' during the Christchurch earthquakes.

Chapter 6: Discussion

Introduction

The intention of this study was to explore the post disaster experiences of mothers after the September 2010 and February 2011 earthquakes in Christchurch. Whilst there is existing literature that makes links between women and post-disaster research, there is a lack of focus specifically related to mothers' experiences. This exploratory study focused on the narratives of mothers to understand their post disaster experience. Linking the framework of resilience to the findings in this study has allowed for further consideration of the following themes: the impact of natural disasters upon mothers, parenting roles, childhood development, the significance of psychosocial systems, the context of community, disaster preparedness, and mothers' evolving roles post disaster.

Following analysis of data collected from interviews with six Christchurch mothers, several distinct areas of focus emerged relating to the topic. Chapter 5 has presented information derived from narratives of participants who were present during both earthquakes. This chapter is organised into sections and initially begins with a discussion of factors which exacerbated or negated the impact of the earthquakes, including the immediate experience of the event, altered relationships and the impact of the parenting role. Secondly, mothers' coping and adaptation skills are explored. This is followed by a section about women's roles post disaster and issues associated with divisions of labour. The importance of building resilience through a sense of hope and community is then considered concluding with a section on lessons for future post disaster recovery, which highlights the concept of disaster preparedness and its influence on understanding mother's post disaster experiences.

The impact of disasters

Throughout this research, mothers identified various ways they had been affected by the Christchurch earthquakes which included, factors associated with their immediate experience of the event, changes to their personal and extended relationships, influences on their parenting roles and financial and social implications. It was evident there were differences and similarities between experiences which were influenced by personal coping strategies, unique protective and risk factors, connectedness with the community and individual preparedness for disaster. Existing literature has identified there are differing responses to

disaster and argued personal responses to the same issue can vary and an individual's ability to regulate and manage their emotions can impact on their recovery (Satici, 2016). All of the mothers interviewed for this study showed strength and resilience during the event, despite traumatic scenes unfolding around them; for example, Cathy who was at work during the February earthquake ensured the safety of herself and her student whilst on the 4th floor of the university building. Mary, who was with her children at home in February, threw herself on top of her children to protect them from falling debris. Whilst Beth initially could not get hold of her husband due to problems with telecommunication, but despite this maintained a calm exterior in front of her son. Current research and literature explored in chapter 2 challenged the notion of women as weak and vulnerable during disaster (Ariyabandu, 2009; Islam et al., 2017). The findings in this study are congruent with Ariyabandu (2009) and Islam et al.'s (2017) research in which mothers' narratives indicated capable women with innate strength and courage to continue to function in a challenging environment despite their fears. Post disaster literature written by McManus (2015) and Gordon et al. (2014) highlight the strengths and capabilities of women during the disaster period and emphasise the significance of their role in post disaster recovery. Recognising and harnessing the capabilities of women inspires their confidence in dealing with adversity again in the future. The importance of identifying strengths of individuals is supported in existing research which states building individual, family and community strengths fosters resilience in the face of natural disasters (Drolet et al., 2015; Gil-Rivas & Kilmer, 2016).

Two of the mothers reported their personal and extended relationships were impacted by factors associated with the earthquakes which had both positive and negative influences on their experience. Clare reported she was surprised when her relationship with her extended family completely disintegrated due to differences in opinion about managing the care of her children. Cathy said she felt resentful towards her husband as he expected she would be the one staying at home to care for their children whilst he went back to work. Peek and Fothergill (2009) argued there are risk factors after disasters that can hinder women's recovery. It was evident that whilst supportive relationships assisted mothers to recover, additional pressure in other relationships brought about by factors associated with the earthquakes, namely care of the children and differences of opinion about personal coping strategies, established obstacles to recovery. Despite not having support from extended family members Cathy and Clare were able to exhibit strength and had capacity to manage their experiences. Clare described a positive outcome of the earthquakes was making other

relationships in her community which were beneficial to her recovery. These findings are significant as they promote the capacity of mothers to thrive in the face of adversity and adopt new ways and means of coping despite opposing risk factors, namely anticipating but not having family support. Research by Satici (2016) postulates the ability to spontaneously reorganise the existing pattern of resource acquisition, utilisation, and management into a new, alternative one to maintain a sustainable basis for daily activities, shows an individual's ability to cope with change independently. Clare and Cathy's ability to cope without the anticipated support of their extended families reflected their unrelenting strengths and confidence to manage independently during and after the disaster.

It has been established that individuals can be affected by disasters in different ways which can include psychological, physical, environmental and social components (Greene & Greene, 2009). It was clear from these mothers' narratives that the impact of the Christchurch earthquakes was not about the physical or psychological impact on themselves but was about their concern for others, primarily their children. Despite mothers describing the magnitude and physical experience of the September earthquake as more significant; surprisingly the event appeared to have a lesser impact for more of the respondents than the February earthquake. Ann and Mary reported the experience was less traumatic as they were at home with their partner and children due to the timing of the event. They said that being with loved ones during the incident and having shared responsibility of the children lessened the impact. Clare said, *I was fearful for my life, I thought this was it, but as soon as I knew the kids and my husband were okay I went straight to the ambulance area to see how I could help.* When exploring individual experience of disasters, it is important to consider the context of their situation, as the event and the aftermath do not happen or evolve in isolation. Existing literature by Gordon et al. (2014) postulates there are key factors which influence the extent of the impact on individuals, and these include the physical location of the person at the time of the event, who they were with and the level of disruption to their lives. The additional responsibility of the parenting role had a significant impact for mothers and knowledge and confirmation of their children's safety was paramount for their psychological wellbeing.

Coping post disaster and adapting to the changing environment

According to existing post disaster research, adaptability is a core characteristic of resilience (Bonanno et al., 2007; Satici, 2016). Adaptability involves being able to move with changing

circumstances and situations rather than resist them. Findings from this research suggest that mothers who were flexible and adaptable could cope post disaster. Over half of the mothers interviewed reported continuing with their routine despite having little sleep due to ongoing aftershocks and without basic necessities such as power, water and sewerage. Mary and Clare said they managed to adapt to a new physical environment and living situation even when they had to separate from their families for financial or practical reasons. Literature have identified having the capacity to draw on personal and social resources to manage the consequences of disasters can lead to the capability of returning to a 'new normal' (Chandler, 2014; Gawith, 2011; Paton & Johnston, 2006). These examples portray the individual resourcefulness and adaptability of mothers in their approach to overcome difficulties like changing schools and moving to a new house. Focusing on the strengths and capacity of mothers instils confidence and leads to individuals taking proactive measures to help themselves, their families, and their community towards recovery. Literature by Rowlands (2013) supports this view and argues disaster recovery experiences are increasingly highlighting the importance of strengths-based approaches at all levels of intervention. Acknowledging the resilience of individuals and communities is core to these ways of working and inspires confidence for the future.

Most of the mothers who took part in this research experienced ongoing psychological impacts from the earthquakes. Beth reported fear when parking undercover in shopping malls; Cathy was unable to sleep and Sam said she felt anxiety and stress during the aftershocks. Literature suggests that aspects of traumatic events can cause subconscious and involuntary reactions to the event which are beyond the individual's control (Greene & Greene, 2009). In this study, some of the mothers reported that the loss of life in the earthquake had a profound impact on them, which caused fear, anxiety, and distress. They reported these emotions manifested in changes in their behaviour, which included avoiding parking in undercover areas, not attending social situations and avoiding being away from their children unless absolutely necessary. These findings are consistent with existing literature by Chandler (2014) who reported that some people become overwhelmed with negative emotions which decreases their ability to cope and be resilient. However, despite ongoing psychological impacts, the mothers in this study seemed to be able to adapt their behaviour to manage their fear and anxiety. Some of them said they tried to manage the emotions themselves or by seeking external help as they did not want to *be a burden* to their families. Literature supports the ability of self-management as key to building resilience and

argues adapting to new routines, and overcoming difficulties after trauma fosters individual resilience (Zolli & Healy, 2012). Rowlands (2013) also argues that acknowledging the strengths, capabilities and resilience of individuals promotes recognition that mental health intervention is not always required. Mothers in this research were clearly able to self-manage by adopting flexible coping strategies which enabled them to recover independently and in turn build personal resilience. Rowland's (2013) article supports the notion of striking a balance between mental health intervention and providing immediate support and therapy to address the most acute needs. Social workers can contribute to assisting individuals during post disaster recovery because of their skills in using the ecological model, which encourages social support and psychosocial care through the promotion of strengths, capability and resilience. This approach contrasts with traditional mental health approaches which are often grounded in a medical model and focus on treating people who have been impacted by disaster as patients or vulnerable individuals with no sense of agency to cope.

Disasters and adversity are not a positive phenomenon; however, some studies argue adversity and difficulty can have some positive aspects (Jackson et al., 2007; Saleeby, 2006). Four out of six mothers interviewed, reported that they were hopeful about the ability of Christchurch to recover and did not plan to move away, preferring instead to adapt to the changing environment and sought to rebuild their lives there. These results are supported by literature which states the process of resilience or becoming resilient is related to the ability to find positive meaning in adverse situations and to regulate positive emotions which contributes to personal resilience (Luthar et al., 2000; Tugade & Frederickson, 2007). Tugade and Frederickson (2007) argue that resilient people can see the positive aspects and potential benefits of a situation rather than being continually negative or cynical.

Disaster management literature supports the view that the ability to be positive, reframe situations and cope with adverse impacts increases an individual's ability to cope post disaster (Greene & Greene, 2009; Stoeber & Janssen, 2011). The current study has found that Sam and Mary could reframe their experiences of the earthquake and they reported finding a new lease of life. Both mothers said they could do this because they focused on the positives in the situation. Ungar (2013) in his study on resilience found that resilience is observed when individuals engage in behaviours that help them navigate their way to resources they need to flourish. Two mothers showed the ability to reframe and overcome a difficult situation when their child's school was closed, for example Clare helped facilitate a

temporary school in her community whilst Beth travelled long distances to take her child to a different school. Hill's (2015) research supports the belief that one's ability to reframe negative situations in a positive light and manage emotions during stressful experiences has adaptive benefits in the coping process of the individual. This view is in context with literature written by Bonanno et al., (2007) who suggests that what constitutes a trauma is not entirely dependent on the nature of the event but also on the personal and social interpretation of the event and the responses of the affected person, their family, and their community. These findings provide an important insight into the effectiveness of embodying positivity and optimism post disaster and the significance of these characteristics in mothers' post disaster recovery.

Role of women post disaster

Existing post disaster literature highlights the role of women as those who are more likely to be responsible for food and water provision, for the care and emotional work within the household, and for the protection of their families in the immediate post disaster period (Ariyabandu, 2009; Drolet et al., 2015). Mothers in the current research engaged in domestic tasks but in addition were proactive in the wider recovery effort. Sam, Clare and Mary were actively involved in supplying food through cooking and baking, organising water supplies and rebuilding community support structures, alongside taking care of their own families. Research has noted the evolving role of women during and after a disaster and their positive presence in assisting recovery (Ariyabandu, 2009; Gawith, 2011; McManus, 2015). Literature by McSaveney (2012) claims women were often less visible in the recovery effort and men were primarily identified as those who cleaned up and provided labour. The mothers' narratives illustrate women moving beyond traditional domestic responsibilities, and encompassing a more active role in the community. These findings challenge the traditional gender construction of labour and highlight women as valuable contributors in the wider recovery effort. Existing research argues that disasters exacerbate pre-existing barriers and inequalities for women and rarely include women in positions to negotiate disaster planning and decision making (Ariyabandu, 2009; Enarson, 2009). The role of women and mothers in emergency management is crucial, as many non-governmental forms of social organisation are led by women/mothers and their contribution is effectual in crisis situations. In addition, findings of the current study emphasise that women are not passive bystanders during disasters they are proactive in recovery efforts. Exploring and analysing gender roles post disaster can assist in re-positioning female voices and female-specific knowledge within the

paradigm of disaster preparedness and within future disaster risk mitigation discussions. Pease (2014) in his study on social work roles post disaster critiques the traditional role of the social worker and argues social workers need to be committed to extending their role beyond a commitment to just improving psychological functioning and managing stress debriefing of individuals, but they need to pay attention to the more macro level of social justice and social change to challenge gender inequality and disadvantage during the disaster phase.

Mothers face significant pressure after a natural disaster as traditionally they are the primary caretakers of the children and the family. Being a mother encompasses responsibilities which are exacerbated post disaster, namely caring for children and ensuring their safety and stability through the re-establishment of routines. Over half of the mothers talked about getting children back to school and into a routine as quickly as possible as they felt continued disruption might add to their ongoing fear and anxiety. Returning to a routine as quickly as possible after a traumatic event has been shown as an important factor for recovery (Greene & Greene, 2009; Norris & Wind, 2009). The current results, which are similar to existing research, have indicated that creating a sense of routine was important, as one mother talked about the importance of keeping her family together while another one drove her son to another school when his usual school was closed. Results from these mothers' accounts signify the importance of ensuring safety and security of her children by focusing on the creation of routines but the findings also raise concerns about the increased demands on mothers who would need to split their attention between the crisis and issues that arise in the disaster environment. It is primarily a mother's sense of responsibility towards her children and family that drives her need to create stability and routine after a disaster, regardless of the personal impact this may present.

Mothers also described the need to manage the psychological impact of their child during the earthquakes. The importance of 'staying strong' was an important factor for many mothers who identified and described feelings of guilt and failure if they broke down in front of their children. Sam, Mary and Beth indicated they experienced additional pressure due to the need to positively manage their own responses to the earthquake as they were conscious their children were observing their behaviour and would behave in the same way. A study by Wolmer et al. (2000) postulate that stronger relationships between children's reactions and those of their mothers may reflect the traditionally key role of mothers spending time with children. Existing research has indicated that parents are an important source of support for

children in post-disaster environments, for example, parents decrease their exposure to secondary adversities, help them to process the traumatic experience, restore routine and redirect their troubling thoughts to more positive thinking (Pfefferbaum et al., 2003; Prinstein et al., 1996). Research by Greig, Taylor and MacKay (2013) highlighted that as well as caring for the physical needs of her children post disaster, mothers need to manage their child's increased emotional needs, which can at times be very difficult for parents who are emotionally distraught themselves. These findings are significant in understanding the extensive impact the parenting role has on mothers' post disaster experiences.

There are certain key elements that can prevent or support an individual's ability to cope with trauma and these are identified as risk and protective factors (Satici, 2016). Children are often identified as an important protective factor for mothers, however it is clear from this study that children can also create additional pressure by their own heightened needs and emotions. For example, Sam was trying to manage her sleepless baby through ongoing aftershocks and Ann avoided contact with her sister-in-law due to her lack of ability to manage her own stress in front of Ann's children. Literature by McFarlane and Norris (2006) established that the responsibility of managing recurring traumatic symptoms alongside caring for children after an event can lead to increased physical and mental health concerns for parents and in some cases, can lead to an inability to parent children effectively. Like adults, multiple factors such as severity of exposure, pre-disaster functioning, family factors, secondary stresses and psychosocial resources can influence children's reaction to cope with trauma (Norris et al., 2002).

In contrast Clare and Cathy said their children gave them a reason to create goals and to ensure the stability of the family unit. McWilliams (2011) stated that in addition to the role of the caregiver, the parent is used as a guide for development and modelling for the child about how to regulate emotion and behave socially. Within the family unit the role of the mother is to maintain family cohesion and to support and provide a safe environment for children to withstand the stressful events (Snyder, 2002). These findings help us understand that a child's adjustment post-disaster is influenced by their family's ability to cope. Family dynamics change in the face of disasters and those that are vulnerable are more at risk in the post-disaster setting (Svanberg, 1998). A supportive family environment will assist individuals to better adjust during traumatic events. In her research, Rowlands (2013) argues reunification of families and accessing informal social support systems are the first priority after a disaster,

keeping families and neighbourhood groups intact wherever possible was the first-order principle, as it is from these relationships that people draw their most support. Having an appreciation of the family dynamic within the home environment provides an understanding of mothers' obstacles to recovery which will inform their post disaster experience.

It is clear the parenting role has a significant impact on many areas of mothers' post disaster experiences, including responsibilities for managing routines, children's psychological distress and practical issues. Often the management of these responsibilities is at the expense of their own mental and physical health needs. Children have a major influence on the post disaster experience for mothers and the impact can be far reaching into the future. In the current study, Mary and Ann both altered their working lives due to concerns over their lack of proximity to their children during the day. Their actions showed their children were their priority and they adapted their behaviour to ensure the best outcome for their children in case of another disaster. Such results relate to Whiteford and Tobin's (2013) study which highlights, children not only influence parents' decisions to evacuate, but also transform their perceptions of risk and everyday practices regarding preparedness and safety. Research on disasters identified how individuals contextualised their own experiences and surroundings and this enabled and assisted them to cope in their environment (Gordon et al., 2014; McManus, 2015). Mothers in this study made long term changes in their lives in anticipation of further disaster events. It is evident they were being proactive and prepared to minimise risk to their family in the longer term.

Building resilience through a sense of hope and community

Psychosocial systems are an important part of the recovery process post disaster (Harrison & Williams, 2016; Hawkins & Maurer, 2010). Disaster literature has highlighted that networks and friendships were significant components for women in establishing and maintaining resilience (Ariyabandu, 2009; McManus, 2015). Clare and Cathy stated that friendships and the opportunity to connect with likeminded others was important to their wellbeing whilst Sam identified she would struggle to cope if her mother did not live close by. None of the mothers in this study identified they felt the need to access external counselling to manage their fear or anxiety. All the mothers acknowledged the significance of their personal connections during this time and reported they struggled when their relationships were negatively affected. In their study about the Christchurch earthquakes Gordon et al. (2014) indicated the importance of relatedness and connection to others post disaster. This is

consistent with literature by Drolet et al., (2015) and McManus, (2015) who said the existence of mutual support between neighbours, friends, community groups and other social networks is an opportunity to build connections and enhance resilience. It was clear despite feeling under intense pressure mothers relied on their informal support networks to manage their experience. Research by Rowlands (2013) states the trauma literature now highlights the critical role of social support and other psychosocial care services and argues that the best immediate therapy for acute stress is social. Therefore, the balance between clinical mental health interventions and supporting normal coping responses to an abnormal situation demands critical and respectful judgment.

Over half of the mothers identified having a sense of purpose was important in their recovery. In this study Clare took a lead role in managing recovery and instigated emergency measures in her community, which included organising a communal water point, whilst Cathy checked on elderly neighbours. Paton and Johnston (2006) and Satici (2016) highlighted an important aspect of recovery as having focused and established goals in order to engage and empower individuals. Guo and Tsui (2010) talk about the importance of mobilising personal and community strengths in order to develop problem solving and decision-making skills in order to support people's recovery after disasters. Findings show that mothers who were involved in the recovery effort found this beneficial to their own recovery. Existing research supports this and highlights the importance of having a focus and sense of belonging as a contributing factor to resilience after a traumatic event (Juran & Trivedi, 2015; Paton & Johnston, 2006). Aldrich and Meyer's (2014) study on community resilience suggests social resources are critical in rebuilding and policy makers should reallocate resources to support, if not deepen social networks among vulnerable populations.

The context of the community had significant impacts on the post disaster experiences of all mothers. Mothers like Beth and Mary felt the earthquakes were a life changing event due to the loss of their homes, the closure of their local school and the loss of employment. While for Clare, once she had ensured the safety of her loved ones, she adapted quickly and focused on supporting others in her community. Variation in responses to disaster is supported in literature by Ariyabandu (2009) who states, that some women can continue their lives with little alteration after a disaster whilst for others the experience is a life changing event. Ungar (2013) argues an individual's ability to deal with trauma and show resilience is dependent on their culture and context of the environment; there is not a single measure for resilience and it

is more a quality of the environment and its capacity to facilitate growth, exposure to risk factors and existing protective factors. This is significant as he suggests that an individual's ability to recover is in context with the context of their community, alongside individual components which help or hinder recovery. The significance of embodying resilient characteristics contributes to post disaster research as it suggests that adaptable, flexible and optimistic individuals can recover independently which will encourage similar characteristics to develop within the community context. Ungar's view is further supported by research by Rowlands (2013) on post disaster management when she states the promotion of individual and community resilience recognises the importance of strengths and is core to self-directed recovery.

Some resilience researchers perceive disasters as an opportunity to move beyond recovery and create positive change (Chandler, 2014; Ride & Bretherton, 2011; van Kessel et al., 2015). Recent studies have shown that resilience and recovery have become more like a continuum rather than a static process (Guo & Tsui, 2010; Reivich & Shatte, 2002). In this study, it is evident mothers who were focused and positive about the future considered that they could recover beyond their previous psychosocial position and improve their lives overall. For example, one mother reported a better work life balance; others learnt new skills, while another found a strong cohesive community in a new environment which she had not encountered before the earthquakes. Beth felt this was a result of everyone in her community being relocated and thus everyone was eager to make friends. Mary felt she had reprioritised her life in view of the earthquake and changed her working habits. Other studies have suggested that to thrive in the face of adversity, individuals need to be goal-orientated, focused and have good problem-solving skills (Paton & Johnston, 2006). It is argued that those individuals who can be positive during the event can have the opportunity to thrive and return to an improved position prior to the event happening (Greene & Greene, 2009). Many of the mothers identified learning new skills as a result of the earthquake was positive for them. This view is supported by Reivich and Shatt  (2002) who state that individuals must perceive difficulties as a chance to improve and perceive problems as an opportunity to develop. McManus (2015) supports women as leaders in his study which focuses on women as creative innovators who looked for opportunities towards positive change and to improve their lives beyond what was before. In this study mothers are not only a resource to their families but are also central to the recovery of their own communities.

Previous studies about resilience described the brain wanting to find past solutions and routines where individuals repeat these actions impulsively without having to think about them explicitly (Reivich & Shatee, 2015). In this study, Clare initiated emergency measures in her community due to her experience in September and Sam reported she knew it was better to stay where she was than venture outside. These mothers noted that successful completion of tasks in September gave them the confidence to do them again in February. Clare noted that people in her community relied on her to do the same tasks that she had done in September and they made assumptions about her capabilities to fulfil these tasks again. Studies have suggested that coping from a psychological perspective means having the ability to invest your own thoughts and actions into solving personal and interpersonal problems which in turn minimises stress, conflict and distress (Osborne & Sibley, 2013; Saleeby, 2006). It was evident that learning to become resilient in the past offered individuals the opportunity to improve their lives in the future. Islam et al., (2017) agrees and states encouraging individual's resilience maximises their potential and success.

Most of the mothers reported that coming from and belonging to a community was very important to them. Literature about place attachment is defined as the sense of belonging to a particular location, such as a house or a specific area. Shin et al. (2016) define place attachment as a positive affective bond or association between individuals and their residential environment and having an emotional involvement with those places. It is clear four of the six mothers felt strong connections to their community in Christchurch as they reported they had not considered relocating elsewhere. Whilst most mothers in this study moved away temporarily after the earthquakes, all of them returned and adapted to the changed environment despite the altered social and physical situation. This is consistent with literature written about the earthquakes by McManus (2015) where women appear focused on rebuilding Christchurch rather than on moving away which is indicative of a strong place attachment. Further Shin et al. (2016) report social interactions and connections are powerful tools of problem solving, particularly during unforeseen shocks such as large-scale natural disasters. Mothers choosing to stay and rebuild foregrounds their role as active participants in the recovery effort. This is indicative of their sense of belonging to their location and the importance of their involvement in future post disaster management planning and discussion.

Lessons for the future

As mentioned in the literature review, disaster recovery research highlights the importance of the concept of preparedness for an event (Medina, 2016; Paton & Johnston, 2006). Two mothers indicated they had followed the advice of local government prior to September 2010 and prepared disaster kits which enabled them to continue to be self-sufficient in the weeks after the event. They indicated by doing this they felt they had acted responsibly for their children and could support them appropriately. The mothers identified being prepared had enabled their families to survive the earthquakes with less impact and they did not have to line up with other members of the community to obtain water or food parcels. These findings are consistent with Phibbs et al., (2015) who state the impact of disasters can be substantially reduced if people are well informed and motivated towards a culture of disaster prevention and resilience. Based on the findings in this study, mothers who had not prepared for disaster reported feeling responsible when they did not have provisions immediately available for their children. Ann said if she had been prepared then she and her children would not need to queue for water. Other literature suggested that to reduce the impact of disasters, individuals, families and communities need to be prepared for an event (Medina, 2016). Chandler (2014) argues that developing the capacity of people, communities and societies to anticipate, cope with and adapt to hazard consequences will lessen the impact of disasters.

According to recent New Zealand research on the analysis of preparedness after the September 2010 earthquake, individuals in Christchurch ensured they were prepared for a future event (McManus, 2015; Phibbs et al., 2015). Some of these measures included buying emergency supplies, securing loose furniture, ensuring cars were full of petrol and confirming plans about where to meet their families during an emergency. This practice is supported by Paton and Johnston (2001) who explored the notion of engaging in activities to ensure preparedness and suggested this practice would foster resilience by reducing fear of the unknown and having the ability to be self-sufficient. Findings from the mothers' narratives emphasised the importance of learning and equipping themselves with knowledge of disaster preparedness. Mothers indicated their experience of September influenced their recovery in February and by being prepared they could support their children and be active within their communities. This is consistent with existing literature on preparedness which highlights it is only with hindsight that individuals, communities, agencies and officials can create a foundation upon which resilience can be built; the first step of which is readiness and

preparedness (Orchiston, 2012). These findings help us to understand the significance of disaster preparedness for mothers, as the mothers in this study highlighted being practically prepared helped psychologically thus they were better able to assist others and build community resilience.

Social work contribution to disaster studies

The literature in chapter 2 highlighted the perception that mothers have historically been considered as vulnerable and in need of additional support post disaster. Findings in this study have highlighted that women are independent, strong and autonomous in their approach to recovery despite gender inequality and additional pressures they face in terms of their parenting roles. Ariyabandu, (2009) argues the gendered terrain of disaster has a significant impact on recovery for women. Pease (2014) illustrates the important contribution social work can make in challenging the inequalities that exist during and after disasters. By exploring factors which impact on key areas of gender and disasters, namely, different impacts on men and women, male domination in emergency response and the impact of disasters on gender roles and inequalities, will provide a broader recognition of structural causes of ecological destruction and environmental crisis. Knowledge of these factors will allow social workers to address these factors and support mothers on an individual level to address these inequalities through strengths-based practice and an ecological model of disaster to support personal levels of psychological relief.

Social work intervention should focus on further exploration of gender inequality during disasters to explore beyond the micro level to a macro level of disaster management, which aligns with social work core values of social justice and social change (Pease, 2014). The results of this study have shown that women are strong innovators of social change and important contributors to community resilience. Mothers interviewed discussed the importance of being part of and contributing to their community which in turn developed the community's resilience. Social workers play a role in challenging the 'invisible role' of women in the recovery effort and should highlight women's contribution to the recovery effort. Social workers can emphasise the importance of the inclusion of women in disaster planning, mitigation and management within the wider community to challenge inequality, foster resilience and by doing so move beyond social work intervention at a micro level to encourage change for women at a macro level.

Summary

In this chapter, discussion has been focused on interviews conducted with six mothers who portrayed different experiences of the Christchurch earthquakes. A relationship between the data and the literature was established and themes were identified. What becomes apparent is despite mothers in this study being impacted by the earthquakes they showed innate strengths and resilience. Additionally, despite these challenges they were focused on ensuring the safety of their children and family by recreating a domestic routine as soon as possible. It was evident that the recovery experience was different depending on the immediate experience of the earthquake and coping strategies after the event. This led to a discussion on the significance of the embodiment of resilience characteristics post disaster and their influence on post disaster recovery. Despite facing additional pressures in terms of relationships and displaced social networks, mothers in general appeared to be goal-focused and optimistic in assisting in the recovery of Christchurch. This chapter also considered the importance of social networks and community and emphasised the importance of relatedness and a sense of belonging following a natural disaster. The significance of social work's contribution to disaster relief studies was outlined detailing the contribution social workers can make at a micro and macro level during disaster phases. This work has opened the way for further research into the links between resilience, disaster risk reduction and recovery which is required to allow us to better understand the subject matter and to improve our understanding of how best to support mothers post disaster.

Chapter 7: Conclusion

Introduction

The current research explored the post disaster experiences of mothers after the Christchurch earthquakes of 2010 and 2011. The research objectives as outlined in chapter 1, aimed to consider factors which helped or hindered their recovery, including an exploration of the immediate experience of the event, support networks, parenting, post disaster roles, overall wellbeing, relationships and preparedness for future events. The role of the community in post disaster experience was also explored, as well as the impact of transient, changing populations on mothers' recovery. Post disaster divisions of labour were considered in relation to evolving roles of women and the affect this has on their recovery. In addition, this research explored the concept of resilience and associated characteristics embodied by mothers after the Christchurch disaster. This chapter relates the findings of this study to the research objectives, highlighting key conclusions and their implications for further research post disaster.

Methodology

The research process involved a qualitative approach using semi-structured interviews with six mothers about their personal experiences during the earthquakes and explored their coping strategies throughout this challenging period. The number of mothers interviewed was limited to six, as this was perceived to be an adequate number to illicit the depth of material required to complete the research using a qualitative approach. The study intended to enable mothers to narrate processes, activities and components that had a positive or negative impact on their experience. Selected themes were chosen and explored thematically using materials from the interviews and comparisons were made with relevant literature and research material (Braun & Clarke, 2006).

Rationale for the research

The study was underpinned by a background of growing interest in the concept of resilience and the increasing significance of this concept in contributing to recovery from natural disasters. As far as the researcher can determine there are no existing studies to date about mothers' experiences of the Christchurch earthquakes which have been explored through the lens of resilience. As a mother during the earthquake myself, the research was a unique

opportunity to consider factors which influenced mothers' recovery and consider factors which could support the recovery of this group in the future. This research is in context with recent literature highlighting the importance of disaster preparedness, the evolving role of women and individual and community resilience as significant factors in post disaster recovery (Islam et al., 2017; McManus, 2015; Pease, 2014; Phibbs, et al., 2015).

Summary of the key findings

This research explored six mothers post disaster experiences and considered how the notion of resilience has facilitated the ability of these mothers to adapt and recover from hazards, shocks or stresses. Based on the findings, key points were established to illustrate common themes found in their experiences. The findings are illustrated as follows:

1. Resilience is an essential capacity for successful adaptation to move adversity from trauma to thriving.

Findings from this research have illustrated that resilience is influenced by frameworks such as Bronfenbrenner's ecological model (1979) in which individuals exercise their coping and adaptive mechanisms through interaction with space, time and their environments. Despite extensive impacts, the mothers in this study have shown characteristics of resilience, including adaptability, flexibility, optimism and coping skills, which have supported their recovery. When a mother who has gone through adverse events feels more self-confident and shows ability in self-efficacy, she is more likely to have stronger adaptive capacity. Mothers in this study have illustrated their self-enhancement has helped them to deal more effectively with the consequences of disasters. Alongside managing their own difficulties following the event, mothers became involved in the community recovery effort to help others. Gordon et al.'s (2014) research highlighted the adaptability and flexibility of women and they were foregrounded as a group actively in charge of their own recovery. The ability of mothers in this study, to embody the characteristics of resilience and adapt to a rapidly changing environment under increased pressure, led them towards a positive recovery. Findings from the study have revealed that resilience is possible when individuals and communities focus on positive outcomes and show determination in the wake of tragedy. This is further evidenced in McManus' (2015) research on the Christchurch earthquakes and Islam et al.'s (2017) research on the Bangladesh floods, whereby women came together and formulated plans

regarding how best to support their family and their community. Both pieces of research indicated the importance of not assuming women were vulnerable and in need of assistance post disaster, as many were strong, capable and resourceful individuals who functioned well in the face of adversity.

2. The importance of the parental role to assist children to achieve an optimal post disaster recovery environment.

A second finding related to the importance of the parenting role and its significance in mothers' experiences of the earthquakes. Mothers in this study were sensitive to their children's physical and psychological wellbeing and ensured their needs were met by ensuring the reestablishment of routines in order to provide a safe and secure post disaster environment. Mothers' coping strategies to meet the needs of their children, connect to their interpretation of situational characteristics and their children's reaction to the traumatic event. Mothers seek to return to normality as soon as possible after a disaster, including encompassing usual roles and routines in order to ensure a favourable environment for their children. Research has suggested that parents who provide a supportive, stable and loving environment for children after a disaster create better outcomes for their child's development (Satici, 2016). Other literature has indicated that a supportive family environment and quality of parenting may contribute to a better adjustment in children during adverse events (Kronenberg, Hansel, Brennan, Osofsky, Osofsky & Lawrason, 2010; Gil-Rivas, Holman & Silver, 2004). Overall, experiences derived from the mothers in this study are in line with current literature by McManus, (2015) and Ariyabandu, (2009) whose research portrays women focused on minimising the impacts of their earthquakes on their families by recreating routines for their children despite any difficulties this may cause themselves (Gordon et al., 2014; McManus, 2015). These actions are significant in terms of supporting existing research regarding children's vulnerability post disaster and the importance of the parenting role in ensuring children's successful recovery (Gil-Rivas, Holman & Silver, 2004).

3. Mothers play a constructive and proactive role in their community post disaster.

Findings from this research have illustrated the constructive and proactive role mothers play in the community. The importance of building resilience at an individual and community

level is supported by existing literature by Islam et al. (2017) and Ariyabandu (2009) who state that being part of a community builds individual confidence, strength and cohesion and is essential for successful post disaster recovery. Despite extensive additional responsibilities post disaster the mothers in this study actively took part in the recovery of their community. For mothers who found themselves displaced and subsequently without social networks having the opportunity to build networks, have a sense of purpose and mingle with others encouraged social capital and resilience (Drolet et al., 2015). The importance of a psychosocial approach to disaster is not often highlighted in historical disaster literature, whilst more contemporary literature has argued that communities need to work well together in order to foster resilience for individuals (Davis & Alexander, 2016). The innate resilience of individuals will foster and build resilience within communities. The pro-activity of mothers within their community highlighted important components in their recovery journey. Gordon et al., (2014) portrayed the significance of women's roles after the Christchurch earthquake and stated; through networked activity that included a variety of technologies, and often motivated by non-material values such as responsibility for others, women brought into being that shifting quality that is increasingly defined as resilience. Women continued to be positioned in primarily domestic roles during disaster management and the findings of this research have challenged the social construction of gender inequality in disaster management and have contributed to the understanding of how to effectively engage and empower mothers post disaster. The strength and capability of women and their contribution to their community is supported Islam et al.'s (2017) research on women after the 2012 Bangladesh floods who argued, that despite great disadvantages such as low economic status, the stoic existence of women and all that is put in their path women are a resource which the authorities in disaster prone countries could utilise. The findings show that the role of women and mothers within the community and within emergency management is crucial, as many non-governmental forms of social organisation are led by women/mothers and their contribution is effectual in crisis situations.

4. The importance of disaster preparedness and its significance in supporting recovery for mothers.

The final finding is related to the concept of disaster preparedness and its significance in understanding mothers' experiences of the earthquakes. It is widely established that developing self-awareness, self-confidence and knowledge through experience of similar

events can lead to a stronger reliance on self-autonomy and coping abilities (Paton & Johnston, 2006; Tugade & Frederickson, 2007). Women and men assess risk differently and respond to disasters and losses in varied ways (Islam et al., 2017; Pease, 2014). It was clear from this study that children not only influenced their parent's decisions to evacuate, but also transformed their perceptions of risk and everyday practices regarding preparedness and safety. Having children evoked a greater sense of responsibility for mothers. Whiteford et al. (2013) argue being a parent changed the experience of disasters and made parents consider new strategies to remain safe. The concept of preparedness was highlighted particularly for mothers who found their key to successful recovery was building on knowledge and skills learnt from previous events.

Women were described during the International Day for Disaster Reduction (2012) as the "invisible force of resilience" (United Nations Office for Disaster Risk Reduction, 2012). There is a need to increase the involvement of women, mothers and girls in disaster preparedness as findings in this research have shown that mothers were able to cope well and their involvement and contribution to their own families and the wider community demonstrates they play an independent, rather than a complementary role to disaster recovery. Women and mothers should be considered as important assets and receive tailored support in pre-and post-disaster situations to engender greater participation and leadership in future disaster risk education. The concept of preparedness is significant as when a mother has gone through adverse events and is prepared, this experience supports and builds her resilience by increasing opportunities to be autonomous and independent in her own recovery. Existing literature is supported by Islam et al.'s (2017) study about the Bangladesh floods the notion of preparedness, which breeds confidence and self-efficacy and reports women would regularly meet together to plan how they could be better prepared in the event of a further flood. Their purpose was to prepare and plan as a group which in turn built confidence and cohesion.

Implications and Recommendations for Social work practice

Several implications and recommendations for social work practice are now suggested in relation to the findings in this study. The findings relate specifically to significant factors in understanding mothers' experiences, including an exploration of resilient characteristics, the

importance of the parenting role during the earthquakes, the constructive and proactive role mothers played in their community and the importance of preparedness in disaster recovery.

There are key learnings from this study which highlight the significance of mothers embodying resilient characteristics and the knowledge this provides for social workers and future disaster management strategies. Firstly, social workers can play an important role in delivering psychological support post disaster. Ungar (2013) states that in practice it means clinicians need to be willing to engage with individuals in ways that empower them to share their own perspectives of their hidden patterns of resilience. Historically, the traditional perception of women is as a vulnerable group and in need of support, particularly when adversity strikes (Enarson, 2009; McSaveney, 2012). The findings show that the embodiment of resilience characteristics have been a key factor in helping mothers cope during and after the earthquakes. To harness these characteristics social workers should facilitate strengths-based approaches when conducting an assessment of need post disaster (Saleeby, 2006). The strengths perspective focuses on support centred on getting on with one's life by recognising strengths, capabilities and adaptive skills of the individual family or community (Saleeby, 2006). By focusing on the innate capabilities of mothers, their strengths can be harnessed and directed towards task centred goals within their community. A strengths-based approach will support mothers' recovery by recognising and validating their resilience and subsequently promoting their sense of purpose, connectedness and belonging to their community.

Secondly social workers understand the importance of the context of a psychosocial approach to disaster management and the significance of the role of the community after a disaster occurs. Social workers have the knowledge and skills to instigate community development approaches, which include information dissemination, needs assessment, advocacy for appropriate recovery services and social planning (Rowlands, 2013). Ungar (2013) argues, the importance of exploring individual coping mechanisms can inform clinical interventions by focusing attention not just on what individuals need to change, but also on aspects of the social ecology that must change for new coping patterns to be adopted. Robust attention to these factors during a strengths-based assessment, paying attention to the context of the community, the significance of parenting responsibilities and mothers evolving roles, offers important insights for social workers who are working with mothers after a disaster. Maximising opportunities for community members to interact and obtain information, assists

in rebuilding social bonds and social support, and these can be delivered in recovery centres or other community settings by social workers (Rowlands, 2013).

The intention is that findings from this study will lead to further research about individuals and resilience post disaster, in order to support a strength's based psychosocial approach to disaster recovery. This approach is supported by existing literature on disaster management by Rowlands (2013) who writes disaster recovery experiences are increasingly highlighting the importance of strengths-based approaches at all levels of intervention. Acknowledging the resilience of individuals and communities is core to these ways of working, as is recognition that most people will recover without mental health intervention. Engaging with women to improve community resilience would involve increasing institutional capital to both complement the effort that the women are putting in on their own behalf, and to enable these courageous, industrious and community minded women to substantially expand the resilience of their communities (Islam et al., 2017). Therefore, the ability of women to be extensively involved in disaster recovery and mitigation can inspire others to do the same, thus creating resilient communities in the future.

A third recommendation is based on the finding that mothers' post disaster experiences were impacted by the concept of preparedness and whether being prepared supported their recovery. The literature review in chapter 2 argued that specific environmental interventions were not adequate to address the widespread impact of disaster and preparation and planning for natural disasters needed to be considered in a more holistic context which included psychosocial measures in order to be effectual (Copolla, 2007; Medina, 2016). Social workers can play a role in helping people and communities to plan and prepare for disaster and assist them to formulate short and long-term interventions (Rowlands, 2013). It is evident that being prepared in this study fostered resilience for some mothers, which is supported in existing literature by Islam et al., (2017) who highlighted the importance of women meeting before a disaster occurred, to formulate plans and share ideas to alleviate the potential impacts of disaster which subsequently built their resilience and confidence. Preparedness and post disaster initiatives instigated and supported by social workers should be based on opportunities for individuals to connect with like-minded others and to engage in community based goal-orientated tasks which promote individual and community resilience.

A fourth recommendation from the findings related to recognising the abilities of mothers to encompass a wide variety of roles outside of the home environment. Social workers can support the role of women and mothers in disaster risk reduction and prevention, at a grass roots level by supporting them to create groups, recovery centres and develop informal community support networks. Women and mothers should be actively involved in facilitating change within disaster and risk reduction planning both in the community and also in research. Islam et al., (2017) support the involvement and full participation and contribution of women and mothers in decision-making and leadership and argue this will enhance disaster development planning. The involvement and active inclusion of women at a community level and in planning and research will enable women and mothers to develop a sense of empowerment by advancing issues such as women's rights, community development and disaster resilience (Ariyabandu, 2009; Enarson, 2009). The role of the social worker challenges oppression and disadvantage and the promotion of important factors for women after a disaster should be inherent in their practice.

It is paramount that mothers' active participation in the recovery effort is encouraged and acknowledged at all levels. Even though some of these mothers may not want to be leaders, the promotion of their role will challenge some of the assumptions made relating to the gendered division of labour and address the 'invisible' role of women during the recovery effort. Their efforts encourage expanding the role of women in research and leadership in relation to women having prominent roles in disaster preparedness and planning. Mothers in this study act as role models and set strong examples for other women which will assist to break down barriers that continue to marginalise them from community discussion. They challenge the dominant discourse of women being perceived as "helpless" rather than "active" supporters and helpers during emergency situations (Islam et al., 2017).

Limitations of the research

Key findings from the current study offered insights into how mothers recover after a disaster. The findings provided information about what context, conditions and factors mothers have found most helpful in terms of their recovery, including what assisted them to re-establish family cohesion, manage parenting challenges and support their own community to return to 'normal'. The six women who experienced both Christchurch earthquakes, while information-rich in relation to the aims of the study, were purposive sampled and cannot be

presumed to generalise to the entire population. The use of purposeful sampling, whereby potential respondents who meet certain criteria are invited to partake in the study, may lead to a limitation of the study (Patton, 2002). The small sample size limits the generalizability of the findings to only a specific cohort and context, namely mothers' experiences from the Christchurch earthquakes and factors that impacted on their recovery. This technique means that the study only gathered information from those who have not been overly affected by the earthquakes due to their willingness to revisit the topic. The sample cohort therefore may exhibit more positive attitudes and readiness in resilience. Despite some of these limitations, the strengths of the research including discovering key resilience characteristics of women and the methods used have mitigated these limitations and offered insight into the important role women play post disaster.

Conclusion

Mothers were affected personally, practically, and psychologically after the Christchurch earthquakes and additional responsibilities associated with their parenting roles created further challenges for their recovery. Despite these factors, mothers focused on ensuring the safety of their children and others in the immediate aftermath of the event and re-established routines as quickly as possible. All of the mothers in this study portrayed characteristics of resilience and most preferred to be actively involved in the recovery effort rather than utilise talking strategies to manage stress. Mothers, who embodied the characteristics of resilience, such as positivity, hope, flexibility and adaptability coped with the challenges the event presented. Strong social networks supported their resilience alongside opportunities to be involved across all spectrums of the recovery effort was significant for many.

The research found key components which impacted upon the post disaster experiences of mothers after the Christchurch earthquakes. Existing literature has found resilience is a key concept in disaster events and management; hence this was a crucial concept to understand mothers' experiences. The research also established recommendations for social workers relating to how to better support mothers post disaster including; a different approach towards assessment of their need post disaster; task centred opportunities within communities and challenging the gendered division of labour which limited mothers' opportunities to be involved or acknowledged in wider recovery efforts within their community.

Previous chapters have presented a discussion on disaster literature, (chapter 2), the theoretical framework (chapter 3) and provided data (chapter 5) related to the objectives of this research as outlined in chapter 1. The aim of this chapter has been to outline a summary of the key findings and provide future recommendations for social workers when considering post disaster management strategies. In addition, limitations of the research have been outlined to encourage further research into understanding post disaster experience through the lens of resilience.

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Appendix A

Ethics Approval Letter

15th August 2015

Dear Angelina

Re: HEC: Southern B Application - 15/43

Understanding the post-disaster effects on mothers after the 2010 and 2011 Christchurch earthquakes.

Thank you for your letter dated 13 August 2015.

On behalf of the Massey University Human Ethics Committee: Southern B I am pleased to advise you that the ethics of your application are now approved. Approval is for three years. If this project has not been completed within three years from the date of this letter, re approval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

Dr Rochelle Stewart-Withers, Chair

Massey University Human Ethics Committee: Southern B

PN

Appendix B

Letter requesting permission

To whom it may concern,

My name is Angelina Jennings and I am studying towards a Master of Social Work through Massey University.

As part of my study, I wish to undertake a research project on understanding the post-disaster effects on mothers after the 2010 and 2011 Christchurch earthquakes. Mothers who are part of your school may have experience in this area and I am writing to request your assistance in making contact with potential participants.

I wish to conduct interviews with 6-8 adults. Selection of participants will be based on the following criteria: (1) mothers aged 18 and over; (2) have experienced both 2010 and 2011 Christchurch earthquakes (3) are not under mental health services and (4) able to give consent to participate in an individual interview conducted in English language.

I would be grateful if you would consider placing the attached advertisement in your school newsletter.

If you have any questions, please contact me on my mobile: 0272618235 or through my email: angelinajennings@hotmail.com.

You can also contact my research supervisor:

Dr Polly Yeung & Dr Nicky Stanley-Clarke

School of Social Work

Massey University

06-3569099 ext 83514 or ext 83515

P.Yeung@massey.ac.nz or n.stanley-clarke@massey.ac.nz

Thank you for your assistance.

Kind Regards,

Angelina Jennings

Appendix C

Participant Information Sheet

Understanding the post-disaster effects on mothers following the 2010 and 2011 Christchurch earthquakes

INFORMATION SHEET

Purpose of the study

Christchurch suffered significant earthquakes in September 2010 and February 2011. The effects on the city and its inhabitants still continue today which is why it is important to be prepared for any future event including thinking about how people can best be supported to prepare, manage and recover after such a traumatic event. The aim of this research is to explore experiences of mothers who experienced both the Christchurch earthquakes, including the challenges they faced and how these were dealt with.

Invitation to the study

I would like to invite up to eight mothers aged 18 and over, who experienced both the 2010 and 2011 Christchurch earthquakes to take part in an individual interview. I would recommend that mothers who have received direct mental health support for earthquake related issues within the past 12 months do not apply. (The 12-month time frame is deemed appropriate to prevent any possible re-traumatisation for participants). The interview is anticipated to last between 60 and 90 minutes.

If you agree to participate in the research, this will be conducted at a mutually agreed time and venue. Before the start of the interview, you will be asked to sign a consent form. The interview will be digitally recorded and transcribed by me. You will be sent the transcript to review accuracy.

Any information will be kept confidential and only I will have access to the data. The recording of the interview will be offered back to you or be deleted upon research completion. Confidentiality is assured and your name will be omitted from the thesis. On completion of the research, I will email or post you a summary of the findings.

Participant Rights

You are under no obligation to accept this invitation. If you choose to participate in this study, you will have the right to:

- Decline to answer any particular question;

- Withdraw from the study (up until the approval of the transcripts);
- Ask any questions relating to this study at any time prior and during participation;
- Provide information in the understanding that your name will not be used for research purposes
- Be given access to a summary of the project findings once the project is finalised
- Ask for the recorder to be turned off at any stage in the interview
- You may also bring a support person with you to the interview, if you chose.

Project Contacts

If you have further questions or feel that this research topic has caused you any discomfort, you can contact me or my research supervisors. I have also included some earthquake helpline number and other support services numbers (please see below).

Student Researcher	Research Supervisor	Research Supervisor
Angelina Jennings 0272618235 angelinajennings@hotmail.com	Dr. Polly Yeung School of Social Work Massey University Palmerston North 06 356 9099 xtn 83514 p.yeung@massey.ac.nz	Dr. Nicky Stanley-Clarke School of Social Work Massey University Palmerston North 06 356 9099 xtn 83515 n.stanley-clarke@massey.ac.nz

Appendix D

Interview Schedule

Understanding the post-disaster effects on mothers following the 2010 and 2011 Christchurch earthquakes

The interview will begin by the researcher briefly going through the information sheet again and asking if the participant has any questions or needs clarification about any part of the process. The researcher will check inclusion criteria and ensure mother has not been under care for earthquake related issues within the past 12 months to prevent against possible re-traumatisation.

The researcher will affirm that there are avenues for support if any issues need addressed subsequent to the interview process and that we can stop at any time if any question is difficult. The researcher will also reiterate the confidentiality clause and confirm approximate duration of interview.

Personal

1. Please tell me a bit about yourself? (Where are you from and how many children do you have?) Are you married, de facto, single parent?
2. What was your experience of the September 2010 earthquake? (Describe your thoughts and feelings, where you were located etc.)
3. What was your experience of the February 2011 earthquake? What was your concern immediately after the earthquake? (My immediate safety, where are my children, can I reach loved ones, is my home damaged etc.)

Supports

4. What did you do immediately after the earthquakes? (Who did you contact? where did you go?)
5. Did you receive any support immediately after the earthquakes and in the following few weeks afterwards? Who offered this support?

Family life and motherhood

6. Could you tell me about how family life was before the earthquakes?
7. Did any factors impact on your ability to fulfil your role as a mother/carer?
8. Would you say you felt under any additional pressure to cope/manage because of your role as a carer?

Community support

9. Did you receive any support in maintaining this role and who from (Agencies, pre-school, friends, family, community?)
10. Who were your main continued supports after the earthquake? (Friends, family, employer, local community, external agencies?)

Overall Wellbeing

11. Can you tell me about how you felt after the earthquakes?? (Stress, anxiety, depression).
12. Did you feel the need to access any support from external health agencies and if so for what in particular did you need support?
13. Did you find these services helpful?
14. Could you tell me a bit more about what happened?

Relationships

15. Could you tell me if other aspects of your life were effected? (Financial, employment, relationships)
16. Do you feel your relationships with your friends/family/community altered as a result of the earthquakes?

17. Can you tell me if and how the earthquakes have impacted on your family, your children, your relationship with your (e.g., partner, husband etc.), your living situation/housing and the community around you?

18. Has life changed for you and your family after the earthquakes?

Future planning and preparedness

19. With hindsight what support was not available that would have been helpful?

20. What do you think would help to prepare you in the event of future earthquakes?

21. What was the most useful assistance you received and from whom? i.e. day-care facilities, student army, neighbours, family, outside agencies.

22. It's been over 3 years since the earthquakes, have these events continued to impact on you and your family? Can you explain in what ways?

23. Can you tell me whether you have considered moving out of CHC after the first and/or second earthquake? (what made you stay?)

Appendix E

Advertisement in school newsletter

Are you a mother?

Did you experience both the 2010 and 2011 Christchurch earthquakes?

I am a Master of Social Work student at Massey University undertaking a research thesis to explore the experiences of mothers following the two Christchurch earthquakes.

Participation will involve one interview of approximately an hour at a time and place convenient to you. Participation is voluntary and all of your identifiable details will be kept confidential.

If you are a mother, aged 18 and over, who experienced both the 2010 and 2011 Christchurch earthquakes and would like to share your story, I would like to invite you to participate in this research. (I would recommend that you do not participate if you have been under direct mental health care as a result of earthquake related issues in the past 12 months. The 12-month time frame is deemed appropriate to prevent any possible re-traumatisation for participants).

If you are interested in participating or want to find out more information, please contact:

Angelina Jennings on 0272618235

Or at angelinajennings@hotmail.com

Appendix F

Participant Consent Form

Understanding the post-disaster effects on mothers following the 2010 and 2011 Christchurch earthquakes

PARTICIPANT CONSENT FORM – INDIVIDUAL

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered fully, and I understand that I may ask further questions at any time.

I agree/do not agree to the interview being sound recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature:

Date:

.....

Full Name - printed

.....

Appendix G

Earthquake Support Resources

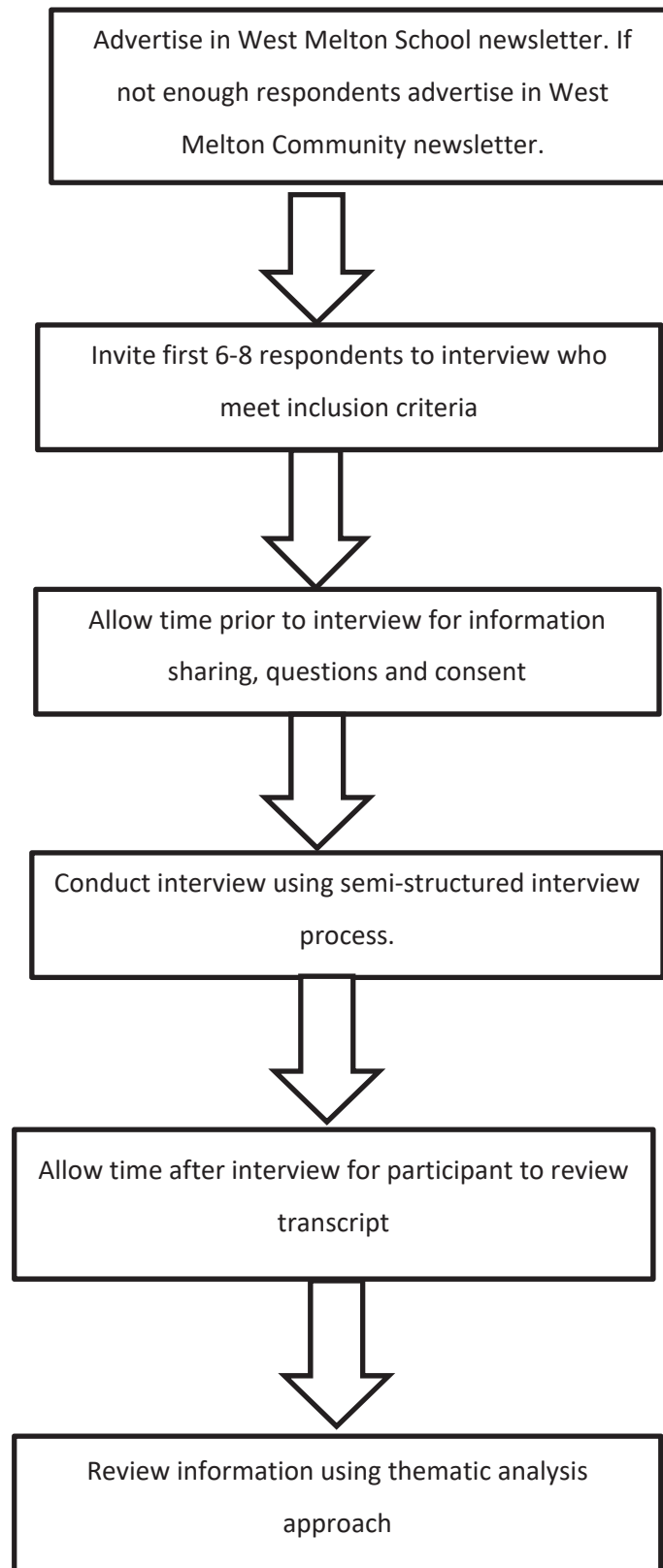
Earthquake Support Help Line 0800 777 846

LIFE LINE 0800 543 354

YOUTH LINE Free text 234

Appendix H

Flow Chart



Appendix I

Human Ethics Application

FOR APPROVAL OF PROPOSED RESEARCH/TEACHING/EVALUATION
INVOLVING HUMAN PARTICIPANTS

(All applications are to be typed and presented using language that is free from jargon and comprehensible to lay people)

SECTION A

1 Project Title Understanding the post-disaster effects on mothers after the 2010 and 2011 Christchurch earthquakes.

Projected start date September 2015 **Projected end date** September 2016
for data collection

(In no case will approval be given if recruitment and/or data collection has already begun).

2 Applicant Details *(Select the appropriate box and complete details)*

ACADEMIC STAFF APPLICATION (excluding staff who are also students)

Full Name of Staff Applicant/s

School/Department/Institute

Campus *(mark one only)*

Albany

Palmerston North

Wellington

Telephone

Email Address

STUDENT APPLICATION

Full Name of Student Applicant Angelina Jennings

Employer (if applicable)

Telephone 03

Email Address angelinajennings@

Postal Address

Full Name of Supervisor(s) Dr. Polly Yeung and Dr. Nicky Stanley-Clarke

School/Department/Institute Massey University

Campus *(mark one only)*

Albany

Palmerston North

Wellington

Email Address

Polly Yeung:

Nicky Stanley-Clarke:

Telephone

GENERAL STAFF APPLICATION

Full Name of Applicant

Section

Campus (*mark one only*)

Albany

Palmerston North

Wellington

Telephone

Email Address

Full Name of Line Manager

Section

Telephone

Email Address

3 Type of Project (*provide detail as appropriate*)

Staff Research/Evaluation:

Academic Staff

General Staff

Evaluation

Student Research:

Specify Qualification

Specify Credit Value of Research

(e.g. 30, 60, 90, 120, 240, 360)

If other, please specify:

MSW

120

4 Summary of Project

Please outline in no more than 200 words in lay language why you have chosen this project, what you intend to do and the methods you will use.

(Note: All the information provided in the application is potentially available if a request is made under the Official Information Act. In the event that a request is made, the University, in the first instance, would endeavour to satisfy that request by providing this summary. Please ensure that the language used is comprehensible to all.)

Christchurch suffered significant earthquakes in September 2010 and February 2011. The effects on the city and its inhabitants still continue today. Many lessons can be learnt about the impact of the earthquakes on the residents of Christchurch. The aim of this study is to explore mothers experiences, knowledge and perspectives of the Christchurch earthquakes in the hope that the findings will contribute to preparedness and support for this group in the future. The proposed study will contribute original research into the post disaster experience of mothers in New Zealand. This research will also explore resilience of mothers in the aftermath of the event and the contributing factors which supported their recovery.

A qualitative design with an inductive exploratory research strategy will be undertaken. The study will involve 6-8 semi-structured interviews with mothers (aged over 18 years) who have experienced both September 2010 and February 2011 earthquakes. The data will then be analysed using thematic analysis to explore common areas of discussion.

-
- 5 List the Attachments to your Application**, e.g. Completed “Screening Questionnaire to Determine the Approval Procedure” (compulsory), Information Sheet/s (*indicate how many*), Translated copies of Information Sheet/s, Consent Form/s (*indicate of how many*), Translated copies of Consent Form/s, Transcriber Confidentiality Agreement, Confidentiality Agreement (*for persons other than the researcher / participants who have access to project data*), Authority for Release of Tape Transcripts, Advertisement, Health Checklist, Questionnaire, Interview Schedule, Evidence of Consultation, Letter requesting access to an institution, Letter requesting approval for use of database, Other (*please specify*).

Screening Questionnaire to determine Approval procedures (Appendix A)

Advertisement to recruit participants (Appendix B)

Participant information sheet 6-8 (Appendix C)

Participant consent form 6-8 (Appendix D)

Interview schedule (Appendix E)

Authority to release transcript (Appendix F)

Applications that are incomplete or lacking the appropriate signatures will not be processed. This will mean delays for the project.

Please refer to the Human Ethics website (<http://humanethics.massey.ac.nz>) for details of where to submit your application and the number of copies required.

SECTION B: PROJECT INFORMATION

General

- 6 I/We wish the protocol to be heard in a closed meeting (Part II). Yes No

(If yes, state the reason in a covering letter.)

- 7 Does this project have any links to previously submitted MUHEC or HDEC application(s)? Yes No

If yes, list the MUHEC or HDEC application number/s (if assigned) and relationship/s.

- 8 Is approval from other Ethics Committees being sought for the project? Yes No

If yes, list the other Ethics Committees.

- 9 For staff research, is the applicant the only researcher? Yes No

If no, list the names and addresses of all members of the research team.

Project Details

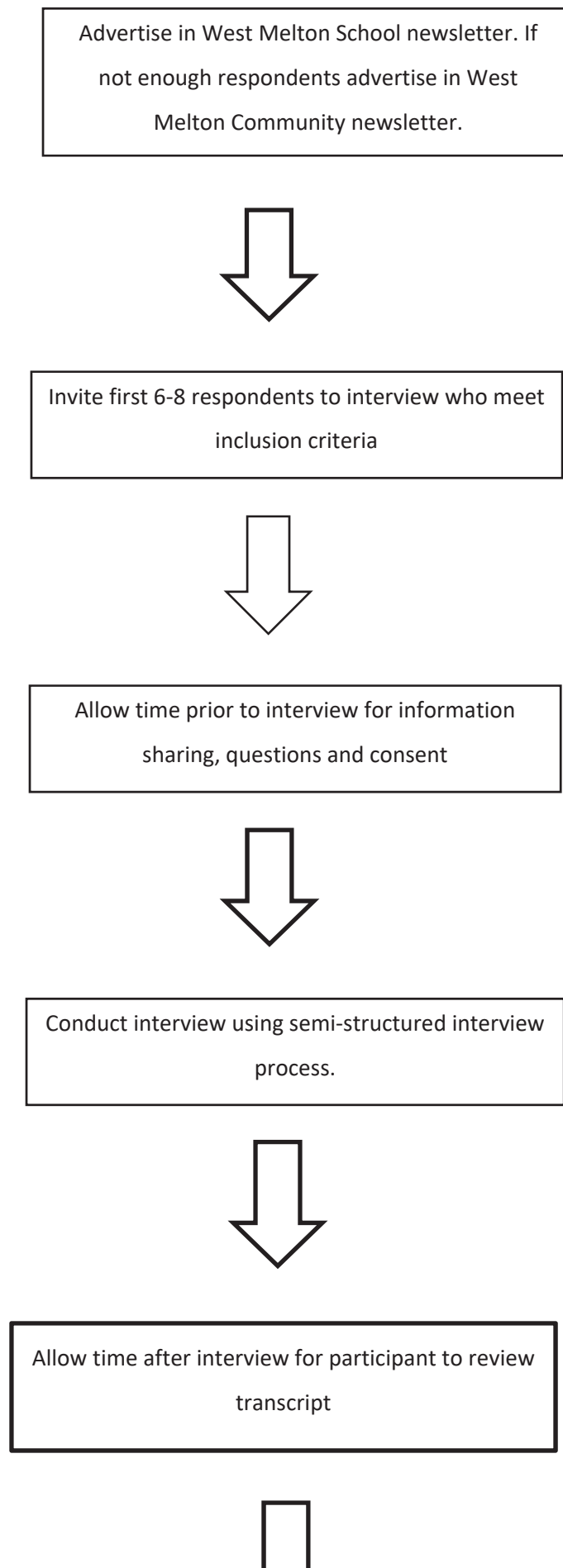
- 10 State concisely the aims of the project.

The aim of this research is to explore the post-disaster effects on mothers following the 2010 and 2011 Christchurch earthquakes including the challenges they experienced and how these were addressed.

- 11 Give a brief background to the project to place it in perspective and to allow the project's significance to be assessed. *(No more than 200 words in lay language)*

This research is the first New Zealand based research to explore the experiences of mothers since the 2010 and 2011 Christchurch earthquakes. It allows for exploration on resilience and the factors that influenced or contributed to successful recovery within this population group. The research will facilitate consideration of the importance of the gendered terrain of disaster and its impact on preparedness, resilience and recovery for mothers. It is an opportunity to add to research regarding peoples' experiences and coping mechanisms post traumatic events in the areas of psychological preparedness and mothers' specific needs in relation to disaster preparedness.

12 Outline the research procedures to be used, including approach/procedures for collecting data. Use a flow chart if necessary.



13 Where will the project be conducted? Include information about the physical location/setting.

The interviews will be conducted at a time and location convenient to participants, primarily within Christchurch New Zealand.

14 If the study is based overseas:

i) Specify which countries are involved;

ii) Outline how overseas country requirements (if any) have been complied with;

iii) Have the University's Policy & Procedures for Course Related Student Travel Overseas been met?

(Note: Overseas travel undertaken by students – refer to item 5.10 in the document “Additional Information” on the MUHEC website.)

N/A

15 Describe the experience of the researcher and/or supervisor to undertake this type of project?

The researcher has no prior research experience but has completed 179.702 Advanced Research Methods in 2014. However, this is a supervised research project. The researcher has 14 years' experience in social work and acknowledges her own personal and professional experience of the Christchurch earthquake. This experience has equipped the researcher with the necessary skills, which include effective listening skills, good interpersonal skills and empathy, which will assist to develop a rapport with participants within ethical and safe guidelines and to practice in a non-judgmental and careful manner.

16 Describe the process that has been used to discuss and analyse the ethical issues present in this project.

Ethical issues have been discussed with supervisors as part of supervision. Drafts of ethical applications have been reviewed by Massey University supervisors.

Participants

17 Describe the intended participants.

Mothers aged 18 years and over who experienced both the 2010 and 2011 Christchurch earthquakes.

18 How many participants will be involved?

6-8 people

What is the reason for selecting this number?

(Where relevant, attach a copy of the Statistical Justification to the application form)

The number is adequate to provide information-rich data for this research.

19 Describe how potential participants will be identified and recruited?

The researcher will approach the local school to ask whether she can place an advertisement in the school newsletter. Interested participants can contact the researcher by telephone directly or by email for further information. The first 6-8 mothers who meet the study's inclusion criteria will be selected.

- 20 Does the project involve recruitment through advertising?** Yes No

(If yes, attach a copy of the advertisement to the application form)

- 21 Does the project require permission of an organisation (e.g. an educational institution, an academic unit of Massey University or a business) to access participants or information?** Yes No

If yes: i) list the organisation(s)

ii) attach a copy of the draft request letter(s) to the application form, e.g. letter to Board of Trustees, PVC, HoD/I/S, CEO etc (include this in your list of attachments (Q5).

(Note that some educational institutions may require the researcher to submit a Police Security Clearance.)

- 22 Who will make the initial approach to potential participants?**

The participants will be volunteers who have responded to the advertisement placed in the school newsletter by the researcher. Following the participants indication of interest in the study, the researcher will make initial phone calls or emails to introduce herself to potential participants. Detailed information about the research will be provided to potential participants in the form of the information sheet before they confirm their decision to participate in order to provide them with time and space to decide whether they wish to participate.

- 23 Describe criteria (if used) to select participants from the pool of potential participants.**

The first 6-8 people respondents who meet the inclusion criteria will be selected. The inclusion criteria is participants:

English speaking mothers, aged 18 and over, who experienced both the 2010 and 2011 earthquakes in Christchurch and are not currently under the care of mental health services.

- 24 How much time will participants have to give to the project?**

Participants will be asked to give approximately 1 to 1.5 hours towards the interview process and another 30 minutes to review the transcripts after the completion of the interview. A total amount of 2 hours is estimated for the whole process.

Data Collection

- 25 Does the project include the use of participant questionnaire/s?** Yes No

(If yes, attach a copy of the Questionnaire/s to the application form and include this in your list of attachments (Q5))

If yes: i) indicate whether the participants will be anonymous (i.e. their identity unknown to the researcher). Yes No

ii) describe how the questionnaire will be distributed and collected.

(If distributing electronically through Massey IT, attach a copy of the draft request letter to the Associate Director Service Delivery, Information Technology Services to the application form. Include this in your list of attachments (Q5) – refer to the policy on “Research Use of IT Infrastructure”).

(Note: All requests for IT related aspects of ethics committee approvals can be directed through the IT service desk in the first instance – the request will be registered and on a response timeline, with the Associate Director dealing with the request).

26 Does the project involve observation of participants? If yes, please describe. Yes No

27 Does the project include the use of focus group/s? Yes No

(If yes, attach a copy of the Confidentiality Agreement for the focus group to the application form)

If yes, describe the location of the focus group and time length, including whether it will be in work time. (If the latter, ensure the researcher asks permission for this from the employer).

28 Does the project include the use of participant interview/s? Yes No

(If yes, attach a copy of the Interview Questions/Schedule to the application form)

If yes, describe the location of the interview and time length, including whether it will be in work time. (If the latter, ensure the researcher asks permission for this from the employer)

The interview will take approximately 60-90 minutes. The interviews will take place at a time and location convenient to the participant.

29 Does the project involve sound recording? Yes No

30 Does the project involve image recording, e.g. photo or video? Yes No

If yes, please describe. (If agreement for recording is optional for participation, ensure there is explicit consent on the Consent Form)

31 If recording is used, will the record be transcribed? Yes No

If yes, state who will do the transcribing.

(If not the researcher, a Transcriber's Confidentiality Agreement is required – attach a copy to the application form. Normally, transcripts of interviews should be provided to participants for editing, therefore an Authority For the Release of Tape Transcripts is required – attach a copy to the application form. However, if the researcher considers that the right of the participant to edit is inappropriate, a justification should be provided below.)

The researcher will do the transcribing.

32 Does the project involve any other method of data collection not covered in Qs 25-31? Yes No

If yes, describe the method used.

33 Does the project require permission to access databases? Yes No

(If yes, attach a copy of the draft request letter/s to the application form. Include this in your list of attachments (Q5). Note: If you wish to access the Massey University student database, written permission from Director, National Student Relations should be attached.)

34 Who will carry out the data collection?

The student researcher

SECTION C: BENEFITS / RISK OF HARM (Refer Code Section 3, Para 10)

35 What are the possible benefits (if any) of the project to individual participants, groups, communities and institutions?

While there is no direct benefit to the participants, it is hoped that participants may feel they have a significant contribution to make in this area and feel they are contributing to further research within the subject matter. Participants will have the opportunity to discuss their experiences of the Christchurch earthquakes. This may provide them with the opportunity to reflect on their experience and how far they have come since that time.

Experiencing the earthquakes personally and being a mother and a social worker, the research may give me the opportunity to become aware of what factors are important to establish and maintain resilience and how to engender psychological preparedness in case of a future event. The research will also contribute to disaster preparedness especially in relation to supports required for mothers most earthquakes.

36 What discomfort (physical, psychological, social), incapacity or other risk of harm are individual participants likely to experience as a result of participation?

Some participants may be revisiting a time of trauma and loss and significant change which may bring about some psychological distress.

Some may be continuing to experience unresolved social and/or physical situations and questions in this area may invoke further distress.

37 Describe the strategies you will use to deal with any of the situations identified in Q36.

Participants will be reminded before the interview that they have the right to not answer any questions they feel uncomfortable with. If the researcher notes that the participant is becoming distressed they will be offered a break or be given the option to stop or withdraw from the interview. The researcher is a mental health social worker so has the ability to assess when a person is becoming distressed and can offer support at that time if required.

The researcher will have the earthquake helpline number and other support services numbers such as lifeline, Youth line printed on the Information sheet. A list of resources will also be offered to each respondent.

38 What is the risk of harm (if any) of the project to the researcher?

None is anticipated. However, as the researcher is also a mother who experienced the two earthquakes, some of the discussion during the interview may bring some discomfort. The researcher is also aware of taking reasonable precautions regarding visiting people in their homes to conduct interviews.

39 Describe the strategies you will use to deal with any of the situations identified in Q38.

Any anticipated discomfort derived from the interviews will be discussed with my thesis supervisors. As a registered social worker, I also receive regular external supervision and will use this to reflect if required. In terms of undertaking interviews, I will let others know where I will be, how long I intend to be and have a cell phone at hand.

40 What discomfort (physical, psychological, social) incapacity or other risk of harm are groups/communities and institutions likely to experience as a result of this research?

None is anticipated.

41 Describe the strategies you will use to deal with any of the situations identified in Q40.

N/A

42 Is ethnicity data being collected as part of the project?

Yes

No

If yes, please describe how the data will be used.

(Note that harm can be done through an analysis based on insufficient sample or sub-set numbers).

43 **If participants are children/students in a pre-school/school/tertiary setting, describe the arrangements you will make for children/students who are present but not taking part in the research.**

(Note that no child/student should be disadvantaged through the research)

N/A

SECTION D: INFORMED & VOLUNTARY CONSENT (Refer Code Section 3, Para 11)

44 **By whom and how, will information about the research be given to potential participants?**

An initial information sheet will be provided to potential participants by the researcher. A detailed information sheet will then be posted or emailed for consideration and this will also include the contact details of the research and research supervisors.

45 **Will consent to participate be given in writing?** Yes No

(Attach copies of Consent Form/s to the application form)

If no, justify the use of oral consent.

46 **Will participants include persons under the age of 16?** Yes No

If yes: i) indicate the age group and competency for giving consent.

ii) indicate if the researcher will be obtaining the consent of parent(s)/caregiver(s). Yes No

(Note that parental/caregiver consent for school-based research may be required by the school even when children are competent. Ensure Information Sheets and Consent Forms are in a style and language appropriate for the age group.)

47 **Will participants include persons whose capacity to give informed consent may be compromised?** Yes No

If yes, describe the consent process you will use.

48 **Will the participants be proficient in English?** Yes No

If no, all documentation for participants (Information Sheets/Consent Forms/Questionnaire etc) must be translated into the participants' first-language.

(Attach copies of the translated Information Sheet/Consent Form etc to the application form)

49 Will any information be obtained from any source other than the participant? Yes No

If yes, describe how and from whom.

50 Will any information that identifies participants be given to any person outside the research team? Yes No

If yes, indicate why and how.

51 Will the participants be anonymous (i.e. their identity unknown to the researcher?) Yes No

If no, explain how confidentiality of the participants' identities will be maintained in the treatment and use of the data.

The research will be conducted through a semi-structured interview with the researcher therefore they will be known to the researcher. The researcher will ensure all identifiable information is removed or disguised and pseudonyms will be provided for all participants.

52 Will an institution (e.g. school) to which participants belong be named or be able to be identified? Yes No

If yes, explain how you have made the institution aware of this?

53 Outline how and where:

i) the data will be stored, and

(Pay particular attention to identifiable data, e.g. tapes, videos and images)

Data will be stored in a password protected computer that only the researcher has access too.

ii) Consent Forms will be stored.

(Note that Consent Forms should be stored separately from data)

Consent forms will be stored in a locked drawer at the researcher's home.

54 i) Who will have access to the data/Consent Forms?

The researcher and supervisors if requested.

ii) How will the data/Consent Forms be protected from unauthorised access?

The researcher will be the only one who has access to the location where the consent forms are stored.

55 How long will the data from the study be kept, who will be responsible for its safe keeping and eventual disposal? (Note that health information relating to an identifiable individual must be retained for at least 10 years, or in the case of a child, 10 years from the age of 16).

(For student research the Massey University HOD Institute/School/Section / Supervisor / or nominee should be responsible for the eventual disposal of data. Note that although destruction is the most common form of disposal, at times, transfer of data to an official archive may be appropriate. Refer to the Code, Section 4, Para 24.)

The researcher will destroy the material once the thesis has been examined through the use of a shredder and secure document disposal.

SECTION F: DECEPTION (Refer Code Section 3, Para 13)

56 Is deception involved at any stage of the project? Yes No

If yes, justify its use and describe the debriefing procedures.

SECTION G: CONFLICT OF ROLE/INTEREST (Refer Code Section 3, Para 14)

57 Is the project to be funded or supported in any way, e.g. supply of products for testing? Yes No

If yes: i) state the source of funding or support:

- Massey Academic Unit
- Massey University (e.g. MURF, SIF)
- External Organisation (provide name and detail of funding/support)

ii) does the source of the funding present any conflict of interest with regard to the research topic?

iii) identify any potential conflict of interest due to the source of funding and explain how this will be managed?

58 Does the researcher/s have a financial interest in the outcome of the project? Yes No

If yes, explain how the conflict of interest situation will be dealt with.

59 Describe any professional or other relationship between the researcher and the participants? (e.g. employer, employee, work colleague, lecturer/student, practitioner/patient, researcher/family member). Indicate how any resulting conflict of role will be dealt with.

None identified.

SECTION H: COMPENSATION TO PARTICIPANTS (Refer Code Section 4, Para 23)

60 Will any payments, koha or other form of compensation or acknowledgement be given to participants? Yes No X

If yes, describe what, how and why.

(Note that compensation (if provided) should be given to all participants and not constitute an inducement. Details of any compensation provided must be included in the Information Sheet.)

SECTION I: TREATY OF WAITANGI (Refer Code Section 2)

61 Are Maori the primary focus of the project? Yes No X

If yes: Answer Q62 – 65

If no, outline:i) what Maori involvement there may be, and

This study is open to all mothers aged 18 and over who have experienced both Christchurch earthquakes and given the participation is voluntary, there may be participants who identify as Maori who want to participate.

ii) how this will be managed.

If Maori mothers want to participate the researcher will advise that although the focus of the study is not on the Maori perspective they are welcome to share their views on their experience. When working with Maori, it will be important to recognise their emphasis on family and social supports in order to maintain health.

62 Is the researcher competent in te reo Maori and tikanga Maori? Yes No

If no, outline the processes in place for the provision of cultural advice.

63 Identify the group/s with whom consultation has taken place or is planned and describe the consultation process.

(Where consultation has already taken place, attach a copy of the supporting documentation to the application form, e.g. a letter from an iwi authority)

64 Describe any ongoing involvement of the group/s consulted in the project.

65 Describe how information resulting from the project will be shared with the group/s consulted?

SECTION J: CULTURAL ISSUES (Refer Code Section 3, Para 15)

66 What ethnic or social group/s (other than Maori) does the project involve?

The social group encompasses English speaking mothers over the age of 18.

67 Are there any aspects of the project that might raise specific cultural issues? Yes No

If yes, explain. Otherwise, proceed to Section K.

68 Does the researcher speak the language of the target population? Yes No

If no, specify how communication with participants will be managed.

69 Describe the cultural competence of the researcher for carrying out the project.

(Note that where the researcher is not a member of the cultural group being researched, a cultural advisor may be necessary)

70 Identify the group/s with whom consultation has taken place or is planned.

(Where consultation has already taken place, attach a copy of the supporting documentation to the application form)

71 Describe any ongoing involvement of the group/s consulted in the project.

72 Describe how information resulting from the project will be shared with the group/s consulted.

73 If the research is to be conducted overseas, describe the arrangements you will make for local participants to express concerns regarding the research.

SECTION K: SHARING RESEARCH FINDINGS (Refer Code Section 4, Para 26)

74 Describe how information resulting from the project will be shared with participants and disseminated in other forums, e.g. peer review, publications, and conferences.

(Note that receipt of a summary is one of the participant rights)

Participants will be offered a copy of their transcripts and a summary of the findings when the thesis has been examined, graded and finalised.

SECTION L: INVASIVE PROCEDURES/PHYSIOLOGICAL TESTS (Refer Code Section 4, Para 21)

75 Does the project involve the collection of tissue, blood, other body fluids; physiological tests or the use of hazardous substances, procedures or equipment? Yes No

If yes, are the procedures to be used governed by Standard Operating Procedure(s)? If so, please name the SOP(s). If not, identify the procedure(s) and describe how you will minimise the risks associated with the procedure(s)?

76 Does the project involve the use of radiation (x-ray, CT scan or bone densitometry (DEXA))? Yes No

If yes, has the Massey Licensee been contacted and consulted? Yes No

(A copy of the supporting documentation must be provided with the ethics application, i.e. relevant SOP, participant dose assessment calculation sheet and approval of the dose assessment from the relevant authority).

NOTE: See "Additional Information for Researchers" (Item 4.2) document for further detail.

(If yes to Q75 and/or Q76, complete Section L; otherwise proceed to Section M)

77 Describe the material to be taken and the method used to obtain it. Include information about the training of those taking the samples and the safety of all persons involved. If blood is taken, specify the volume and number of collections.

78 Will the material be stored? Yes No

If yes, describe how, where and for how long.

79 Describe how the material will be disposed of (either after the research is completed or at the end of the storage period).

(Note that the wishes of relevant cultural groups must be taken into account)

80 Will material collected for another purpose (e.g. diagnostic use) be used? Yes No
If yes, did the donors give permission for use of their samples in this project? Yes No

(Attach evidence of this to the application form).

If no, describe how consent will be obtained. Where the samples have been anonymised and consent cannot be obtained, provide justification for the use of these samples.

81 Will any samples be imported into New Zealand? Yes No

If yes, provide evidence of permission of the donors for their material to be used in this research.

82 Will any samples go out of New Zealand? Yes No

If yes, state where.

(Note this information must be included in the Information Sheet)

83 Describe any physiological tests/procedures that will be used.

84 Will participants be given a health-screening test prior to participation? *(If yes, attach a copy of the health checklist)* Yes No

Reminder: Attach the completed Screening Questionnaire and other attachments listed in Q5

SECTION M: DECLARATION *(Complete appropriate box)*

ACADEMIC STAFF RESEARCH**Declaration for Academic Staff Applicant**

I have read the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants. I understand my obligations and the rights of the participants. I agree to undertake the research as set out in the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants. My Head of Department/School/Institute knows that I am undertaking this research. The information contained in this application is to the very best of my knowledge accurate and not misleading.

Staff Applicant's Signature _____

Date: _____

STUDENT RESEARCH**Declaration for Student Applicant**

I have read the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants and discussed the ethical analysis with my Supervisor. I understand my obligations and the rights of the participants. I agree to undertake the research as set out in the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants.

The information contained in this application is to the very best of my knowledge accurate and not misleading.

Student Applicant's Signature _____

Date: _____

Declaration for Supervisor

I have assisted the student in the ethical analysis of this project. As supervisor of this research I will ensure that the research is carried out according to the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants.

Supervisor's Signature _____

Date: _____

Print Name _____

GENERAL STAFF RESEARCH/EVALUATIONS**Declaration for General Staff Applicant**

I have read the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants and discussed the ethical analysis with my Line Manager. I understand my obligations and the rights of the participants. I agree to undertake the research as set out in the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants. The information contained in this application is to the very best of my knowledge accurate and not misleading.

General Staff Applicant's Signature _____

Date: _____

Declaration for Line Manager

I declare that to the best of my knowledge, this application complies with the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants and that I have approved its content and agreed that it can be submitted.

Line Manager's Signature _____

Date: _____

Print Name _____

TEACHING PROGRAMME**Declaration for Paper Controller**

I have read the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants. I understand my obligations and the rights of the participants. I agree to undertake the teaching programme as set out in the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants. My Head of Department/School/Institute knows that I am undertaking this teaching programme. The information contained in this application is to the very best of my knowledge accurate and not misleading.