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ABSTRACT

Older adults experience more negative impacts resulting from a disaster event compared to other age groups. They are vulnerable prior to a disaster by nature of their age-related health needs and the influence of social conditions, which can have an effect on preparedness in a disaster. Part One of this report reviews international research literature on personal and social vulnerability that can have an impact on older adults in a disaster. Impaired physical mobility, diminished sensory awareness, cognitive decline, and chronic health conditions can all influence the preparedness of older adults. Reduced levels of social connectedness and social support, social inequality and socio-cultural factors can also influence preparedness to a disaster. Part Two of this report describes research on a New Zealand flood disaster based on narrative interviews with four rest home participants and five participants living independently in rental flats who experienced the Kaitaia flood disaster in 2007. Findings suggest that both personal and social vulnerability influenced the rental flat participants' preparedness to the disaster. The rental flat participants had reduced access to social, practical and material resources, which had an impact on their level of preparedness to the disaster. In comparison, the rest home residents had higher levels of preparedness, as they were an easily visible population by nature of their institutional location and their dependency on others. Findings from the rest home narratives showed that although the residents had high personal vulnerability because of their frailty, they were not socially vulnerable because of their institutional location, which offered protection, ongoing care and trust in others charged with their wellbeing. The research findings have highlighted the need for a community vulnerability profile of older adults, which could be used as a collaborative resource for health, welfare and emergency management agencies to promote disaster preparedness.

KEYWORDS

Older adults, ageing, rest home, flood, Kaitaia, disaster, natural hazards, disaster preparedness, vulnerability, vulnerability, social support, social connectedness, social inequalities, social capital, loss of treasured possessions, risk perception, insurance

1.0 INTRODUCTION

Part One of this report discusses international research literature about older adults and disasters in order to highlight vulnerability factors that have an influence on preparedness for such an event. Part Two of this report describes research on a New Zealand flood disaster based on narrative interviews with four rest home participants and five participants living independently in rental flats who experienced the Kaitia flood disaster in 2007. Part Two also provides an analysis of factors that influenced older adults' preparedness to a disaster, and links to the literature discussion and concepts discussed in Part One of this report.

Older adults are a vulnerable group who experience more negative impacts and are more likely to have higher morbidity and mortality rates than the rest of the population in a disaster (Cutter, Boruff & Shirley, 2003; Bolin & Klenow, 1988; Perry & Lindell, 1997; Bourque, Siegal, Kano & Wood, 2006). Examples of recent disasters that adversely affected older adults include: Hurricane Katrina, which devastated New Orleans in 2005, and led to disproportionately worse outcomes for older adults compared to other population groups (Fussell, 2006); the Aceh (Indonesia) Tsunami in 2004 which was triggered by an earthquake in the Indian Ocean, resulted in high mortality among children and older adults; the Kobe (Japan) earthquake in 1995, resulted in older adults suffering the greatest number of deaths; similarly the Paris heat wave in 2003, there were a greater proportion of deaths occurring among older adults (Rikkert, Melis & Claassen, 2009). There is a need to focus on age-specific factors that can influence both personal and social vulnerability prior to a disaster to reduce the disproportionately higher adverse outcomes for older adults.

The increasing ageing demographic, which is occurring throughout the western world, means a greater proportion of those over 65 years will experience disaster events (Cutter & Emrich, 2005). In New Zealand, the projected population of those aged over 65 years will increase 2.8 fold from 510,000 recorded in the 2006 New Zealand census to 1.44 million in 2061, and this group will be living longer (Statistics New Zealand, 2007). Family, friends, caretakers, emergency managers, health-care providers, and agencies involved with older adults, all have a role to ensure that older adults are able to respond to and recover from a disaster (Fernandez, Byard, Lin, Benson & Barbera, 2002).

However, disaster preparedness requires a greater understanding from communities about the age-specific health and welfare challenges that older adults face. Preparedness to a disaster must look beyond individual and social influences to include institutional action. For example, an assessment of disaster response strategies based on the Paris heat wave, 2003 and the Chicago heat wave in 1995, concluded that the response was insufficient because of poor coordination between Government and community-based social organisations (Smith, Tremethick, Johnson & Gorski, 2009). The United Nations Madrid International Plan of Action on Ageing (MIPAA) stated that recognition of older adults and their age related needs must be addressed (World Health Organisation, 2002). Their needs included equal access to food, shelter, and medical care, and other services during and after natural disasters and other humanitarian emergencies. The MIPAA plan also recommended greater recognition and enhancement of the positive contributions made by older persons during emergencies (World Health Organisation, 2002).

PART ONE - OLDER ADULTS AND DISASTER PREPAREDNESS

2.0 VULNERABILITY

The definition of 'vulnerability' can be defined as relating to "the 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" (Blaikie, Cannon, Davis & Wisner, 1994, p. 9). Vulnerability also includes the level of risk that a person is exposed to by an identifiable hazard (Blaikie et al., 1994). For example, vulnerable locations and structural factors such as cheaper housing stock were identified as affecting disaster outcomes, rather than factors that relate to individual actions (Hatch & Dohrenwend, 2007). Vulnerability encompasses both personal dimensions associated with age related physical and cognitive decline, which impact on disaster outcomes, and broader community dimensions, that are strongly influenced by social, economic and political factors (Blaikie et al., 1994; Smith, et al., 2009). Vulnerability factors that have an influence on disaster preparedness for older adults are discussed in the following sections:

2.1 Social vulnerability

Vulnerability to a disaster includes social factors, which can exert a significant influence on disaster preparedness and outcomes. Social vulnerability relates to the pre-event circumstances, which include the inherent qualities within social systems that create the potential for harm in a disaster (Lindsay, 2009). It is at the social site that vulnerability exists for some groups, rather than at the level of individual responsibility and decision making per se or personal characteristics and traits. Factors influencing social vulnerability include: social support and social connectedness; social inequalities; and current socio-cultural norms around ageing.

2.2 Social support and social connectedness

Social support, in the context of disaster preparedness, can be defined as social interactions or relationships that provide individuals with practical and emotional assistance. Social support from family, friends, neighbours and communities can help people deal with stressful events. The effects of social support are well recognised in the literature as having positive effects on health and well-being. There are various typologies of support functions. Four types of social support identified by Stroebe (2000) include: emotional support, which can provide a sense of caring, comfort, empathy and belonging; practical support that is involved with the provision of tangible help or resources such as money or food; informational support that is able to provide advice and directions about matters of concern; and appraisal support which is related to receiving information that helps to appraise an event or situation, or to learning what resources are available to assist to cope with the situation, for example, a disaster event.

The perceived availability of social support has been reliably associated with mediating appraisal and coping processes; having supportive others to rely on has been identified as a factor making it "less likely that they will cope ineffectively and thus have a negative psychological or health outcome" (DeLongis, Folkman & Lazarus, 1988, p. 487). However,

not all citizens receive social support in the preparedness stage of a disaster, because reduced social networks can influence older adults' ability to access and receive preparedness assistance. Furthermore, neighbours or professionals outside an individual's close support network may not be utilised due to reticence about making demands on others (Tyler, 2006). Research by Kaniasty and Norris (1995) found that the smaller the social support system a person had, the less practical support was available in terms of transport and accommodation during a disaster as well as access to or availability of emotional support.

Older adults are at higher risk of having reduced social support, because factors such as age and illness can impact on social relationships, and these may affect older adults' ability to maintain a sense of social connectedness. These important social relationships can become diminished due to death of friends, family, and other support people. Older adults aged in their seventies and eighties may have fewer people available to rely on in times of need (Tyler, 2006). Therefore, the reduction of social support and social connectedness for older adults can place this population group at an increased risk of not receiving information regarding possible disaster preparation (Riad, Norris & Ruback, 1999).

2.3 Social inequality

The second factor that may have an influence on preparedness in older adults is social inequality, particularly, lower socio-economic status. For some older adults reduced financial security can have an influence on the practical and material resources able to be accessed in times of an emergency. Lack of available resources will affect older adults' ability to optimally prepare and respond to a disaster. For example, lack of access to transport, communication technologies, and alternative accommodation away from the disaster area can negatively impact on disaster outcomes. Social inequality related to geographic location can also influence the level of risk to a disaster. This is because place inequalities such as flood prone land can have an impact on predisposing certain groups, such as older adults, to becoming vulnerable (Cutter, Boruff & Shirley, 2003).

2.4 Socio-cultural factors influencing preparedness

If we are to understand how norms, attitudes and beliefs within society have an influence on older adults' vulnerability to a disaster, a socio-cultural perspective on risks and hazards is essential. Examining socio-cultural influences on risks and hazards can provide a way of understanding how disasters and the need for preparedness are made sense of by older adults. Lupton (2006) states that risk at this time in history has become an individual endeavour; one of self-responsibility in relation to how we think about others, our wider social institutions and ourselves. Similarly Furedi (2007) states that the psychological state of individual vulnerability has come to be understood as an intrinsic attribute belonging to the person. The understanding that both risk and vulnerability are now characteristics associated with individual responsibility has implications for how vulnerability in a disaster is understood. Rather than becoming vulnerable through the effects of social factors, individual vulnerability has become an intrinsic characteristic of certain social groups, which include elderly, women, children, minorities, the disabled and the poor (Furedi, 2007). Socially created vulnerabilities such as decreased social support and social connectedness, social inequalities, and socio-cultural factors, which influence disaster outcomes, become less visible. Mayhorn (2005) argues that social factors need to be incorporated in understanding

why older adults experience more negative impacts. For example, traditional family networks are now more geographically dispersed, which reduces the availability of family networks available to assist older adults in the preparedness stage of a disaster. Social factors therefore must be considered in emergency planning when addressing disaster preparedness for older adults. It is not sufficient to only look at older adults and assess their cognitive abilities in relation to understanding hazards and warnings. We need a more complete picture of the current socio-cultural influences that interact with each disaster event, in order to improve preparedness and outcomes from a disaster.

In New Zealand, growing old independently in the community is encouraged. The New Zealand Ministry of Health, like many other western governments, has encouraged older adults to remain active and independent in the community as part of its 'Positive Ageing' strategy (Ministry of Health, 2002). This strategy is forward looking in terms of challenging ageing stereotypes around cognitive and physical decline, and dependency in old age. There is now a focus on personal autonomy and the encouragement to remain active within communities. However, the current trend of promoting self-sufficiency over decline and dependency in old age ignores the range of diversity and social inequality amongst older adults (Biggs, 2001). In a disaster context, older adults are more likely to be dependent on existing conditions than other population groups, thus making them more vulnerable. This is because older adults may not have access to financial or material resources, such as transport away from the hazard area, nor have the traditional sources of support such as extended family to call on in times of need such as disaster. The emphasis on remaining independent and self-reliant may mask older adults' vulnerability to a disaster and their ability to adequately prepare.

2.5 Personal vulnerability

Age related declining health could also increase older adults' vulnerability to a disaster, because some may not be able to prepare due to impaired physical mobility, diminished sensory awareness, and chronic health conditions (Fernandez, et al., 2002). Health related conditions could mean that some older adults in the community are more housebound and personally vulnerable, making them less visible during disasters than other population groups in the community. This group is at higher risk of not making timely preparations because they may have a reduced awareness of a hazard event, along with living in a community that may not be aware they need assistance. Factors that can affect age-specific preparedness and response of independent older adults in a disaster include: declining health, increased chronic diseases, impaired vision, hearing and mobility, and limited access to healthcare resources. Psychological factors that can influence the ability to prepare and respond to a disaster include: anxiety about their ability to cope with impaired mobility should they need to leave their home; and departure from familiar surroundings, which may be especially difficult for those who experience deficits in hearing, vision, or memory, because older adults rely on known environmental cues to continue living independently (Smith, et al., 2009).

Personal vulnerability due to health-related conditions may compromise older adults in a disaster, along with reducing their ability to prepare for such a disruptive and destructive event. Many older adults fear that if their diminished physical or cognitive abilities are revealed, they risk loss of independence or being institutionalized (DeWolfe, 2000). As a result older adults can be more vulnerable to disproportionately suffering adverse effects in a disaster. Riad, Norris and Ruback (1999) state, "knowing who is at higher risk for not

evacuating and why, could indicate ways of influencing these individuals to make an affirmative decision and may suggest early intervention strategies that provide access to the resources necessary to evacuate successfully” (p.918). For example the Paris heat wave in 2003 affected older adults disproportionately in this age group through dehydration, heat stress, heat related morbidity, cardiovascular events, renal failure, complications of delirium and respiratory diseases (Rikkert, Melis & Claassen, 2009). Factors identified by Rikkert et al. (2009) that contributed to placing older adults at higher risk included: people who lived alone, lower socio-economic status, pre-existing chronic diseases, and those who were taking several medications, which exacerbated dehydration. Recognising the early warning signs of a heat wave, together with education and monitoring of frail older adults prior to the event would have significantly improved preparedness reduced the vulnerability of this group (Rikkert et al., 2009).

Ensuring the visibility within the community of older adults prior to a disaster event is essential. For example, rest home residents are highly visible in the community, despite having high personal age-related dependency needs. This is because their location in a twenty-four hour care facility makes them easily visible as needing assistance. However, older adults who live independently in the community may also have age-related dependency needs, but by nature of their independent situation, may become less visible within the community as requiring help. Therefore, the identification of vulnerable older adults in the community is essential. Organisations involved with the promotion of preparedness for a disaster event must address age specific needs relating to personal vulnerability for older adults living in the community. This would help to facilitate preparedness plans for older adults prior to a disaster, and would also ensure that vulnerable older adults were identified prior to a disaster event by relevant agencies, so that timely disaster warnings and assistance are given.

A report by the World Health Organisation (WHO, 2008) on older people and emergencies looked at the strengths and gaps in emergency preparedness and response to recent disasters around the world. Disasters like Hurricane Katrina, and the heat wave in France “revealed serious deficiencies in planning and responding to older persons” (p.16). Identifying and planning successful mitigation measures for older adults prior to a disaster would reduce personal vulnerability. Furthermore encouraging older adults to become active on local emergency committees would enable them to inform their local communities and make their potential needs known (WHO, 2008). Community level participation by older adults therefore would become part of a disaster preparedness strategy for older adults.

3.0 PRACTICAL STEPS FOR ENHANCING PREPAREDNESS OF OLDER ADULTS

In assessing factors that have an influence on preparedness, emergency management agencies concerned with the welfare of older adults need to know who are likely to be vulnerable in a disaster. Older adults and the wider community need to be involved in the consultation process to facilitate a greater understanding and knowledge about the age-specific needs of older adults in the community. This process of identification and integration of older adults' needs is relevant to building up a profile of who is at risk and can help to ensure that older adults are visible in the community. Community vulnerability maps which identify the location of frail older adults in the community have been used internationally and proven effective in engaging local communities to identify vulnerable groups and high risk areas (Smith, Tremethick, Johnson & Gorski, 2009). In New Zealand for example, a web based emergency management tool has been developed as a planning tool, which is designed to help prepare neighbourhood groups, schools, businesses, community groups, and rest homes for an emergency. Once registered as a user, information and alerts can be sent via email and text messaging to the designated contact persons representing each group. This type of technology could play a role in disaster preparedness of older adults and help to reduce their vulnerability to a disaster event.

Other factors identified from the research literature that contribute towards improved preparedness of older adults are addressed in the following points:

- Encourage self-preparation of older adults by providing checklists and educational material to older adults and their support networks within the community: friends, family, community organisations, and health providers (Australian Red Cross, 2009). It is important to address personal and social vulnerability factors by empowering older adults to prepare in advance with family and neighbourhood support networks so that hazards are identified. Make sure that older adults know how to access information in an emergency.
- Treasured possessions need to be identified, located and protected. These include documents such as passports, wills, marriage and birth certificates, prescriptions and medical histories (Australian Red Cross, 2009). Older adults who have identified particular possessions of special significance will save time and experience less stress when it comes to preparing to evacuate in an emergency. Protection techniques that have shown to be effective include: storage of documents in a waterproof container, making duplicate copies of treasured items such as photographs and videos that are stored in another location (Australian Red Cross, 2009).
- Ensure that all persons in the communication network are aware of the plan, and that each person has the contact details of the network. More than one person is needed to depend on for assistance in an emergency (Australian Red Cross, 2009). The communication network needs to include numerous people because it is likely that in a disaster some of the listed contacts may be unavailable to assist because they may also be affected by the disaster event and require help themselves.

- Ensure that community and agency support networks are aware of the location of older adults living in the community so that the community and agency networks could communicate with and assist older adults in the early warning phase of a disaster. There is a role for community organisations involved with older adults to provide disaster preparedness programmes to assist older adults. For example, community organisations that represent the interests of older adults could work to develop initiatives that focus on decreasing personal and social vulnerability to a disaster.
- Assessment by healthcare providers of older adults' self-protective preparedness measures they have in place; the assessment of personal and social needs prior to a disaster would identify factors that put this age group at increased risk of negative outcomes. The assessment by healthcare providers would profile the personal and social vulnerability of older adults' strengths and weaknesses within their community setting. For example, agencies involved with older adults' health and welfare needs would liaise with emergency management to create evacuation plans and encourage older adults to practice their plan. A partnership prior to an emergency would ensure that older adults have an understanding of their own abilities and possible needs during an emergency event (Australian Red Cross, 2009).
- Health and welfare agencies that are already offering services to older adults in the community have an important role in emergency preparedness. Emergency management teams need to liaise with community health and welfare agencies and sensitise them to disaster planning principles (Fernandez, et al. 2002). Health and welfare agencies already provide assistance with daily living needs, which can include the provision of transportation, and meal deliveries. Linking these agencies and community groups with emergency management planners would enable "assistance in identifying the at-risk elderly population during the risk assessment phase of preparedness, and in developing preparedness procedures (Fernandez, et al., 2002). Once at-risk older adults have been identified, an information system could be developed to assist with disaster planning and education aimed at reducing personal and social vulnerability to improve preparedness to a disaster event.

4.0 SUMMARY

Emergency planning prior to a disaster event needs to take into account factors that can impact on older adults' personal and social vulnerability and their preparedness to a disaster event. Knowledge of the age specific needs of this group is relevant for civil defence readiness, community planning and preparedness. Emergency managers, health-care providers, emergency responders, local public and private agencies dedicated to the health and well-being of older adults, along with family and friends, also share in this responsibility of disaster preparedness (Fernandez et al., 2002). Agencies in contact with older adults in an everyday setting may not be aware of the importance of disaster planning and preparedness when discussing and assessing the health and well-being needs of older adults. Therefore, emergency planning that includes using natural networks available to older adults could be supported to assist older adults to become disaster prepared. In addition inter-sectoral relationships between health and welfare agencies and emergency management agencies could be strengthened. Such relationship building would enable a

consistent and comprehensive approach in supporting older adults to prepare and importantly to be visible within the community.

PART TWO — CASE STUDY RESEARCH BASED ON A NEW ZEALAND DISASTER AFFECTING OLDER ADULTS

5.0 INTRODUCTION

Part Two of this report is based on my Master of Arts thesis (Psychology) entitled: Older adults' experiences of a flood disaster: making sense of an extraordinary event (Tuohy, 2009). Part Two provides an analysis of factors that had an influence on older adults' preparedness to a disaster, and links to the literature discussion and concepts discussed in Part One of this report.

The flood disaster in Kaitaia occurred on July 10, 2007. Prior to this disaster event, twenty of the preceding thirty days had been wet. On the evening of July 9, 2007, rain had begun falling; the rain became more intense during the early hours of Tuesday July 10 and continued until 6pm that evening. Consequently, the storm arrived on top of already wet grounds, increasing runoff into elevated rivers and streams (Environmental Monitoring Report, 2007-2008).

5.1 Methodology

The following sections in this report are based on narrative interviews that were audiotaped and transcribed by the researcher. Narrative as a research methodology is able to explore "how individuals perceive, organise, give meaning to, and express their understandings of themselves, their experiences and their worlds" (Mishler, 1986, p. ix). One of the strengths of narrative is that it produces the opportunity to be sensitive to the respondent in exploring understandings and meanings generated from the interviewer's questions. Narratives can be analysed at the individual level, but also can provide representations of experiences and meanings that extend to the socio-cultural level. The use of narrative interviewing is an appropriate methodology for studying older adults' experiences of a disaster because personal stories incorporate a socio-cultural perspective, which can tell us about personal and social influences on preparedness for this age group.

5.2 Participants

The participants were a location specific sample of nine older adults from Kaitaia, who were evacuated from their accommodation because of rising floodwaters. Four participants lived in a rest home and five lived independently in a grouping of semi-detached rental flats (25 flats in total were flooded). The two groups differed in their levels of independence in the community: the rest home environment provided 24 hour support to the residents, while the adults in the rental flats were independent in the community. The two groups also differed in the effects of the flood disaster: the rest home was not flooded, although all residents were evacuated overnight and returned the following afternoon. The residents from the rental flats were flooded, as water rose to a metre inside their flats. Those in the rental flats received the warning to evacuate from firemen who went door knocking in the early evening to warn the residents of the possible need to evacuate. These participants lost many of their possessions. Three of the participants were in temporary accommodation for six months waiting for their flats to be refurbished due to contaminated flood damage. Two of the

residents chose not to return to the same area because of concerns about future flooding from the nearby stream.

All participants from the rest home and rental flats met the criteria of being physically and cognitively able to be interviewed about their flood experiences. The potential for distress of the participants in recalling their experiences of the flood was addressed by ensuring that appropriate social support was available. Two participants from the rental flats requested a support person with them during the research interview. The nine interviews were conducted in September 2008, 14 months after the flood disaster. Eight participants consented to having the interviews audiotaped, and one participant declined having her interview audiotaped, but consented to me taking notes during the interview. Approval was gained from Massey University Human Ethics Committee to conduct this research.

5.3 Results and discussion from rest home narrative interviews

5.3.1 Personal and social vulnerability and preparedness

Rest home residents are vulnerable in a disaster because of their personal and social dependency needs. Older adults residing in rest homes, generally have high care needs relating to age related physical and cognitive decline, such as impaired mobility, chronic illness, sensory impairment, dementia, and reliance on medications. They are at increased risk in a disaster because they require a high level of assistance to evacuate and be cared for during the disaster event. In the New Zealand context, disaster preparedness is addressed through the statutory safety legislation required by rest home organisations: Fire Safety and Evacuation of Buildings Regulations, 1992; The Health and Disability Services (Safety) Act, 2001 (Ministry of Civil Defence and Emergency Management, n.d.). The statutory requirements of a licensed rest home functions to ensure that the safety of residents in a disaster event is addressed.

The rest home residents' narratives included expressions of personal and social vulnerability to a disaster, and highlighted the importance of institutional preparedness in a disaster. Excerpts from the interviews conducted with the rest home residents are used in the following section to discuss the narrative themes that emerged from their experiences of the disaster.

5.3.2 Narrative themes: care, protection and trust

The orderliness of the evacuation and assistance by staff and emergency personnel helped to provide the rest home residents with a sense of protection and ongoing care. Trust in the emergency personnel in charge of the decision-making and evacuation was important for all the rest home residents as these excerpts reveal:

Mr G:

"I feel quite confident in those people who make the decisions (to evacuate) that nothing will happen to us."

Miss J:

"I didn't find it distressing, I just asked for my medication, everything was taken care of."

Mrs G:

“Everybody was concerned for our safety, and knowing you could rely on them. We weren't on our own they did everything that was right for us.”

Continuity of rest home care was also maintained during the night of the evacuation. One resident expressed the importance she attached to the familiar presence of rest home staff present at the welfare centre:

Mrs G:

“It's like your parents coming in you know, you didn't have to worry.”

The themes of care, protection and trust can be linked to factors relating to personal and social vulnerability and the importance of institutional preparedness. The rest home residents had high personal vulnerability and low social vulnerability and this ensured a good outcome for the residents. Furthermore, the rest home residents were visible within the community by nature of their location in an institution; their location made the rest home an identifiable as a place where older adults with high personal vulnerability needs resided, and that assistance would be needed.

The residents experienced a safe environment throughout the emergency, which made certain their personal care and protection needs were met. After the decision to evacuate the rest home had been made, the residents' health related needs were managed through either being accommodated at the welfare centre or the local hospital. The environment at the welfare centre ensured that the residents were grouped together and separated from other non-rest home evacuees. The separated area for older adults at the welfare centre fits with the World Health Organisation guidelines, which has recommended that dedicated spaces be created for older adults who require accommodation in emergency shelters (WHO, 2008).

5.3.3 Features of the evacuation as described by the rest home residents

- Rest Home staff prepared the residents for a possible evacuation by warning them that there might be an evacuation, and warm clothing was got out for them in preparation.
- Residents were provided with information about what was going to happen.
- Residents reported that they experienced a sense of order during the evacuation, and there was no sense of panic.
- Residents reported that they had confidence and trust in the decisions being made by the emergency personnel.
- Assistance was available from staff and emergency personnel to help organise residents onto buses.
- Residents were triaged to the local hospital or welfare centre.
- The Rest Home staff remained with the residents either at the hospital or welfare centre, which ensured the continuity of nursing care for each resident.
- Rest home residents had their medications.
- Residents' own mattresses were made up and ready for the residents at the welfare centre.
- A separate area at the welfare centre was established for older adults. The creation of a dedicated space for the rest home residents helped to maintain continuity and familiarity in an environment that was temporary and unfamiliar to the residents.

5.4 Results and discussion from narrative interviews with older adults living independently in the community

The Kaitia disaster highlighted the independent older adults' vulnerability and lack of preparedness to a disaster event. The following narratives provide a context for highlighting age specific challenges in a disaster, which can inform future emergency preparedness and planning for this age group. Excerpts from the interviews conducted with residents flooded from their rental flats are used in the following section to highlight the narrative themes that emerged from their experiences during the disaster.

5.4.1 Coping with limited assistance

The participants evacuated during the flood lived in rental accommodation in a flood prone area of Kaitia. An aerial view of the rental flats is shown in Figure 1. The proximity of the rental flats to the waterway and stop bank is clearly visible. The 25 rental flats were designated for older adults over 65 years, which may have isolated them from the wider community and reduced their awareness of possible flooding and the need to prepare.



Figure 1 Aerial view of Tarawhataroa Stream and flooded flats that were occupied by older adults (Source: Google maps: maps.google.co.nz/)

Communication about flood concerns did not occur. No one had rung or visited the residents during the day to express concerns about possible flooding. Common themes within the residents' stories were panic, lack of preparedness and vulnerability. The residents were alerted about possible flooding half an hour prior to water entering their homes. Most left without their medications, wallets and personal effects.

5.4.2 Loss of treasured possessions

The residents lost many of their possessions because metre deep water flowed through their homes. Within each person's narrative was a sense of personal vulnerability in relation to loss of treasured possessions. The representation of tangible objects destroyed in the flood can be understood as a metaphor for loss and vulnerability. Kamptner (1989) stated meanings of personal possessions in late adulthood embody psychosocial challenges and relate to perceived control and mastery over aspects of the environment. Possessions communicate what is important in the lives of older adults. The role of treasured

possessions in an older person's life provides a connection with the past. Treasured possessions also provide a sense of continuity throughout the lifespan through the meanings objects hold for the owners (Tobin, 1996). Such meanings may not be obvious to others, but for the owner, the treasured possessions can give a sense of pleasure, attachment, or wellbeing and can provide a sense of identity for older people (Kroger & Adair, 2008).

The following excerpts illustrate the importance of treasured possessions and the need to protect special items prior to a disaster event.

Mr W:

"The thing that really hurt me the most was losing your personal papers and your photo albums and things like that. That was the hardest part when you sat down there and looked at all the things that you had had for fifty years and all that was gone, all gone."

Mr T:

"I lost all my coaching stuff and all that from bowls, all my certificates."

Mrs C:

"I had oodles of wool, and all my patterns, that's my life, knitting is my life."

Treasured possessions have symbolic meanings in older adulthood, which can help to maintain a sense of identity. Loss of important possessions may impact on recovery and wellbeing after a disaster event. Therefore it is important to recognise the psychological and emotional importance that treasured possessions may represent for older adults. Recognition of the importance of treasured possessions must be addressed in the non-disaster/preparedness stage, so that such items are identified and made safe.

5.4.3 Preparedness and risk perception

The residents lived next to a flood protection stop-bank. They did not perceive the waterway (Tarawhataroa Stream) behind the stop bank as a credible hazard prior to the disaster. Consequently they were not prepared for a flood event. There was surprise and disbelief when they were told that the stream was about to flood.

Mrs C:

"When the fire brigade chap came to my door and said we might have to evacuate you all because the little creek over the back is coming up, I thought rubbish, that's not going to flood."

A short time later when the water began to enter Mrs C's home she said:

"I went out my back door, it was quite swift water and there were bits and pieces floating in it, you were banging into bits and pieces, you couldn't see."

Mrs B: on hearing about the need to evacuate said:

"Because it was dark, I somehow got the creeps, I could feel the water running down the back of my neck, and I came inside all prepared to be sensible, and I really didn't know what to do, because I couldn't see where the water was, how close it was to coming over the stopbank."

Mrs K:

"I left my old handbag behind with all my money in it and my passport. When they said water and I saw it at the back door - I panic and I never thought about the water coming into my house, never gave it a thought, must be my old age."

Mr W:

"And I think most people were quite surprised how quick, when it did start to flood, how quick it came through. As far as I was concerned it was just another rainy day."

Mr T:

"I just grabbed my bag which I always have some clothes in and I grabbed my medicine, I didn't even grab my wallet".

5.4.4 Social connectedness and access to social support

The residents lived in an area that had been identified as flood prone, yet awareness about the potential hazard and the need to be prepared for flooding was not high. This highlights the importance of social networks within the community so that hazard information in the early warning stages of a disaster is received. Reduced social connectedness can mean that older adults become vulnerable in a disaster event; they may be less easily visible to emergency services and the wider community as needing early warning advice and assistance. Older adults' personal social networks may also be reduced, which can make them less able to cope independently in a disaster event. The following excerpt from one resident gives some insight into the pre-disaster vulnerabilities within their rental flat community:

Mr W described his role within the rental flat community:

"Well I was the youngest here, so I ended up doing all the odd jobs and that, like changing the light bulbs 'cos they are all over in their eighties and nineties in some cases."

Speaking about the flood Mr W said:

"Yes I think everybody was taken by surprise, of course the older ones you had trouble getting them out of their houses and convincing them to move...The old lady next to me I helped... I was more worried about the lady 'cos she had dementia, but she was OK."

6.0 CONCLUSION

In conclusion, this report has identified the need to understand personal and social vulnerability and how it can influence disaster preparedness for older adults. The dynamics of disaster preparedness include understanding and assessing the human context of older adults' pre-disaster vulnerability as well as understanding and assessing the nature of the hazard. Factors that contribute to older adults' personal vulnerability to a disaster event include age related cognitive and physical decline, which can influence preparedness behaviour and perceptions about the need to plan for a disaster. Factors that can influence social vulnerability to a disaster event include decreased social connectedness and social inequality. Socio-cultural expectations around independent ageing may also predispose

older adults to becoming more vulnerable in a disaster, especially since traditional family supports may now not be as readily available.

The Kaitaia research on older adults' experiences of a flood disaster revealed both personal and social vulnerabilities to the disaster event and highlighted the importance of preparedness for frail and dependent older adults. In the context of the rest home environment, the older adults' location in a care facility ensured that they were looked after during the disaster. The rest home residents were identifiable and visible as a vulnerable age group who needed assistance in a disaster event. Organisational preparedness and the availability of rest home staff to give assistance during the evacuation ensured that this vulnerable group did not experience adverse outcomes.

In the context of the older adults living independently in the community, their preparedness for the flood disaster was limited. They were unaware that the amount of rain which had fallen posed a flood threat and their location next to a flood protection stopbank was not seen as a risk. All the residents in the rental flats lost treasured possessions that were irreplaceable. Medications, wallets and handbags containing personal information were also left behind during the evacuation.

7.0 RECOMMENDATIONS

Health and welfare agencies together with emergency planners need to work with older adults to identify and address personal and social vulnerability to a disaster prior to a disaster event occurring. Developing a preparedness plan in partnership with health and welfare agencies already assisting older adults in their day-to-day lives would contribute to enhancing disaster preparedness and decreasing personal and social vulnerability. For example encouraging the monitoring of medication supplies to ensure they always have enough in an emergency situation, adequate food and water supplies, developing a emergency contact list of friends and family, and identification of treasured possessions that need safe-guarding.

At an inter-agency level, developing communication links between emergency management planners, health and welfare agencies currently involved with older adults would also improve preparedness planning. Disasters occur within the routines of everyday life; utilising agencies involved with the health and welfare needs of older adults would contribute to assisting in disaster preparedness education for this age group. Moreover, involving older adults in disaster preparedness at a community level would further inform local community organisations about the strengths and gaps in preparedness planning for this age group.

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