



NEW ZEALAND
**FIRE
SERVICE
COMMISSION**
Whakararanga Iwi

Fire Research Report

Safe or Trapped?

Older people's knowledge, attitudes and behaviour towards home security and the fire evacuation risks they impose

Litmus Limited December 2014

Older people hold inaccurate and negative views about crime levels. In spite of the drop in the crime rate over the last ten years, older people do not feel safe in their homes. Furthermore, while crime figures show that victims of crime are more likely to be younger people older people believe they are more vulnerable to intruders in their homes.

Older people take a range of measures to create a strong visible defence to potential intrusions (e.g. installing locks and latches on windows, deadlocks on doors, and security screen doors), and are not considering the potential fire evacuation risks these security measures impose. While older people acknowledge they would be slow to evacuate their homes in the event of fire, due to impaired mobility, vision and hearing, they are underestimating the time to evacuate from fire and the serious consequences of fire.

Older people are more concerned about home intrusions than house fires. This could be due to the different levels of exposure older people have had to intrusions and fires in their lifetimes, the extent intruders and fires receive mass media coverage, and older people's views on the responsiveness of the Police and Fire Service. Older people believe that their fire risk has reduced as they have got older, due to their life style, daily activities and built environment. Older people believe the responsive action they have taken by installing smoke alarms to alert them to a house fire will mitigate the delay security measures impose.

Litmus collected data and information from focus groups and an online survey of older people, key informant interviews and a literature review. The Fire Service will use the research findings to determine how to support older people to be fire safe while maintaining their security needs.

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New Zealand Fire Service Commission

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1. Executive Summary

1.1 Introduction

Strategic Objective One of the New Zealand Fire Service Commission Strategic Plan 2012 – 2015 is to Improve Community Fire Outcomes¹. This includes reducing fire fatalities and injuries, and improving fire safety knowledge and behaviour. One of the Fire Services at risk groups is people aged 65 years and over.

The Fire Service commissioned research to explore and measure older people's knowledge, attitudes and behaviours regarding home security, and their attitudes towards potential evacuation risks posed by some home security measures. The research findings will be used by the Fire Service to determine how to support older people to be fire safe while maintaining their security needs.

The research was conducted between July and September 2014, consisted of focus groups with older people, and an online survey of older people, expert interviews, and a review of national and international evidence.

1.2 Living Safely, Securely and Independently at Home

For many older people, their fears and anxieties about home security and house fires, as well as other events such as earthquakes and natural disasters are secondary to their real concerns about keeping well and remaining independent.

The contribution that older people make to New Zealand society should be celebrated. The wealth of skills, knowledge and wisdom that older people bring to our community is invaluable. However, for many people growing old comes with a loss of identity, control and relevance.

Many older people experience social isolation – an absence of social contact with family or friends or community involvement. Older people also spend more time alone than younger people, and older women spend more time alone than older men, who spend more time with family from their household than older women do. There is a strong relationship between a person's economic standard of living and their feelings of loneliness. This association increases for older people. Older women are more likely to feel lonely than older men, and older people are less likely to feel lonely when they live in a two-person household.

The amount of time older people spend at home, often alone, not participating socially and disconnected from families and communities has an influence on older people's needs and concerns about living safely, securely and independently in their homes.

¹ New Zealand Fire Service Strategic Plan 2012-2015.

The key concern that older people have that undermines their ability to live safely, securely and independently in their homes is having an adverse health event (e.g. a stroke or a heart attack) or accident (e.g. slip, trip and fall). Older people's concerns about home security, fires, earthquakes and other natural disasters are very much secondary to health concerns.

Health concerns and a need for greater support is a key factor determining where older people live. As people age, they often move closer to family/whānau, and hospital, GP, pharmacies and other medical services, shops, and public transport systems so they can remain independent for as long as possible. Often this means downsizing to smaller, more modern and easier to maintain properties and at the same time revisiting their home security and fire protection measures.

1.3 Older People's Views on Crime

Older people hold inaccurate and negative views about crime levels.

Despite the drop in crime rate over the last ten years, older people do not feel safe in their communities. Only 13% agree that there is less crime in their communities than ten years ago and 11% agree that there is less crime in New Zealand than ten years ago. This finding supports a separate research study by the Ministry of Justice that New Zealanders hold inaccurate and negative views about crime levels in society and wrongly believed that crime was increasing.² Older people believe there is more violent crime and sexual offending, drug and anti-social crime, property crime and dishonesty offences.

Furthermore, in spite of crime figures showing that victims of crime are more likely to be younger people, 61% believe older people are more vulnerable to intruders in their homes than younger people. Older people's most significant fear is being confronted and trapped by an intruder, particularly at night and/or when they are alone. Due to their age and physical ability, older people would feel more vulnerable to an attacker, as they are less able to escape from or fend off an attacker.

1.4 Older People's Vulnerability in relation to Crime

The negative attitudes and ageism that are mainly present in New Zealand society is contributing to older people's vulnerability in relation to crime.

Many Pākehā people note their diminishing relevance in their communities, due to their declining status and role. This contributes to their vulnerability towards crime and victimisation. Older women (particularly women living alone) feel more vulnerable to crime than older men, particularly in relation to violent crime and sexual offending. For women their loss of strength and increasing frailty that comes with ageing contributes to feelings of vulnerability, loss of privacy, powerlessness and loss of security. Women are more likely to

² Crime and Safety Survey. Ministry of Justice. 2009.

believe they have been targeted with crime, and/or crime such as tagging and graffiti could lead to more serious crime.

Older people living in urban areas are more likely to be concerned with crime and their security than older people living in rural areas. This perception is driven by feelings of less cooperation and collaboration in communities in recent years.

However, in spite of gender and location, older people living in close knit communities with supportive and vigilant neighbours are less concerned about intruders and break-ins than people who feel isolated in their communities. These people live in resilient communities with Neighbourhood Support structures or retirement villages.

1.5 Older People's Attitudes and Beliefs about their Fire Risk

Older people believe their fire risk is low, due to their lifestyle, daily activities and built environment.

While older people hold strong views over the increasing prevalence of crime in New Zealand, they hold soft opinions on the prevalence of house fires.

Generally, older people are more concerned about intruders coming onto their property and breaking into their house than house fires. This could be due to the different levels of exposure older people have had to intruders and break-ins and fires in their lifetimes, and the extent intruders and break-ins receive mass media coverage. Seventeen percent of older people have had an intruder on their property at some point in their life, compared with 5% who have had a house fire. Men tend to be more concerned about house fires than women. This difference may be due to men typically being the breadwinners their whole lives and so their house represents a lifetime of work, security and identity. Older people living in rural areas tend to be more concerned about house fires than older people living in urban areas. This difference is likely to be due to their relative isolation and often water scarcity. Older people are more concerned about house fires at night, when they are less alert.

Many older people in their lifetimes have experienced fires that have been potentially devastating, and some recall instances where house fires have caused fatalities, injury, destruction and emotional and financial loss in their communities. However, older people believe that their fire risk has reduced as they have got older, due to their life style, daily activities and built environment.

Older people, who downsized and moved to newer, low maintenance homes when they retired, feel their houses are now more fire safe. Older people also believe they are at low risk of causing house fires, as the vast majority of them are non-smokers, rarely deep fry and grill or use open fires for heating. Older people also believe that they are very cautious and responsible in ensuring power cords and multi cords are not overloaded and checking appliances and elements are switched off before going to bed, and keeping clothing,

bedding and furniture away from heaters. Despite these factors, many older people identify that absentmindedness that often comes with old age could contribute to a house fire.

1.6 Older People's Security Measures

Older people take a range of measures to create a strong visible defence to potential intruders, and are not considering the potential fire evacuation risks these security measures impose.

Older people evaluate their home security, and install new measures when they downsize their properties, when they renew their insurance or change insurance company and after they or a neighbour have had an intruder or been burgled. Many older people believe that insurance companies require deadlocks on doors, and may not pay out on a claim if the owner or occupier is proven not to have effectively secured their homes. Older people also upgrade their security measures following advice and insistence of family who want assurance that their parents are safe and secure in their homes.

Many measures which are designed to strengthen the security of older people's homes to deter or delay an intruder can pose a potential evacuation risk in the event of fire. These include installing locks and latches on windows, deadlocks on doors, and security screen doors which add another layer of protection to main doors and ranch sliders. Many older people and their families are not considering the potential fire evacuation risk security measures pose when determining the security measures for their homes. At best, older people believe that the security measures they have taken to prevent an intruder entering their homes will slow down rather than prevent their evacuation in a house fire. Many older people overestimate the time they have to evacuate their home in a house fire.

Older people with arthritis find it difficult operating snibs, turning keys in locks and disengaging latches. Older people also acknowledge that security screen doors are an additional barrier and could slow down their evacuation in a fire.

Many older people lock their doors both at night and during the day and remove the keys from the locks. While people believe their deadlock keys are accessible, either on a side board, on a hook, or in a drawer, people are not always keeping their keys in the same place making them hard to retrieve in a fire. Often deadlock keys are on a single key ring, which would slow down peoples' evacuation, depending on where the safest exit was located. Keys are often placed at waist or head height which would be difficult and dangerous to reach for in a crawl position. Very few people keep deadlock keys in their pockets or attached to clothing to enable a faster exit.

Many older people are not seeing the poles and other obstacles placed in less frequently used exits (e.g. bedroom ranch sliders) as significant impediments to evacuation. Partly, this is due to older people not foreseeing that they would need to use these doors, if the main doors they usually enter and exit from are not safe to exit from.

Generally, older people believe the locks and latches they have on their windows would not significantly pose a risk of escape from a fire, as many have impaired mobility and vision making exiting from a window difficult or impossible.

1.7 Older People's Fire Safety Responsiveness Measures

Older people believe the responsive action they have taken by installing smoke alarms to alert them to a house fire will mitigate the delay these security measures will pose.

Overwhelmingly, older people believe the responsive action they have taken by installing smoke alarms to alert them to a house fire will mitigate the delay these security measures will pose. Over 90% of older people have at least one working smoke alarm and 77% have their alarms regularly tested. However, despite the presence of smoke alarms and other fire safety measures such as fire extinguishers, only 10% have practiced their escape plan.

Older people acknowledge they will be slow to evacuate from a house fire. Many older people have hearing impairments, which restricts their ability to hear smoke alarms and be alerted to a house fire. Some older people's medications cause drowsiness and would make them slow to respond to a house fire. Many older people have poor mobility and/or low vision and therefore have fewer exit options. The ability to evacuate from a fire is more profoundly felt by couples where a disabled partner would be dependent on an able bodied partner for assistance.

1.8 Older People's Views of Police and Fire Service Responsiveness

The visibility and responsiveness of the Police and Fire Service contributes to older people's views of crime and fire security.

Police responsiveness and crime resolution rates contribute to older people's inaccurate and negative views of crime. Older people generally believe the Police are less responsive than in the past, due to fewer personnel to respond to the rising crime, and competing priorities. Some older people are not confident that the Police will respond urgently in the event of an intruder on their property or burglary, and those living in rural areas feel less confident that the Police can respond urgently or in a timely manner, due to their distance from the nearest Police station.

A perception of low Police resolution rates to burglaries and other crimes contributes to older people's view of crime. Older people mention that most media communications about crime focus on violent crimes that have been committed, rather than those that have been solved.

The responsiveness and visibility of the Fire Service contributes to older people's positive views on fire security. Older people view the Fire Service is to be an effective and well-

resourced organisation with highly trained personnel, high performance fire trucks and state of the art fire-fighting equipment. Overall, people perceive the Fire Service to be more responsive than in the past, due to better telecommunications, faster trucks and better and more accessible roads. Older people are therefore confident in the Fire Service's ability to respond to a call out. People who have had a callout say the Fire Service responded urgently and attended the scene quickly.

The contact older people have with the Fire Service through installing and checking smoke alarms, checking electric blankets and other electrical equipment, and checking fire hydrants and sprinkler systems provides a heightened view of the Fire Service being equipped and able to respond urgently to a call out. Older people consider the Fire Service is very proactive in both television and local media promoting the effectiveness of smoke alarms. In provincial and rural communities, the visibility of the Fire Service in community events and fundraisers is also contributing to older people's sense of fire security.

1.9. Overseas Jurisdictions

As technology changes there is going to be greater integration of health systems, home security and fire prevention. 'Life systems' is the new philosophy.

There are many aged care websites that recognise older people's increased fire risk as a result of, for example, reduced physical ability (less able to hear smoke alarms and less able to escape quickly), more likely to 'make do' with old or low quality appliances, and more likely to have clutter blocking exit pathways.³ Some also provide some tips about keeping older people safe in their homes, including fire safety.

A web-search of international fire departments and organisations for older people show very little information of the fire safety risks posed by home security measures beyond a bullet point on a home safety check list to make sure exits are clear and to keep door and window keys in a handy place.

Fire service websites tend to provide general fire safety information for adults not targeted information for older people. Fire service webpages commonly have a tab or information specifically about children (or parents and schools). Very few have interventions targeted at older people. Community education programmes also tend to focus on children, not older people.

Internationally there is move towards assistive technologies and holistic approaches to home safety which includes for example, health (illness and injuries), security and fire safety in one package.

³ Examples of websites include: Agewell, Aging care, My Ageing Parent, At Home Care, Elder Parent Help, Science Daily, Hue and Cry, SA Metropolitan FS, NSW FS, QLD FS, Victoria FS, UK FS, USA fire administration, London Fire Brigade, Fire Prevention Canada, Commonwealth of Massachusetts, Montgomery County, Scottish Fire and Rescue, Pennsylvania State Fire Commissioner, kcet.org

In the United Kingdom (UK) and US there is growing interest in **Smart Homes**. Smart homes are homes equipped with a communication network, sensors, and other electronic devices that can be remotely monitored and controlled to respond to the needs of the inhabitants. In Japan there is a move towards **Integrating Community Involvement** with specialised alarm systems and technology. Fire department home visits include visiting the next door and nearby neighbours, and fitting exterior alarms to alert neighbours when the internal smoke alarm is activated.

1.10 Recommendations

The Research Team makes the following recommendations based on the research findings:

1. **Develop a fire safety programme for older people to acknowledge the increased fire risk older people have as a result of their physical and sensory impairment.** This programme should include an overarching strategy for older people's fire safety, and activities including relevant information and messaging, education, technology and support.
2. **Develop and strengthen public and private sector partnerships.** Strong sector partnerships will assist collaboration for maintaining older people's safety, security and independence and break down 'competing messaging.' Partners would include the New Zealand Police, Neighbourhood Support, Insurance Council of New Zealand, and the medical, fire (private sector) and security sector.
3. **Research into age-appropriate fire prevention and safety technology:** Review the effectiveness and usability of current fire safety measures and packaging (e.g. smoke alarms and fire extinguishers, etc) with older people. Where required, explore options and partnerships for the design and supply of age-appropriate technology.
4. **Investigate the potential of integrated 'Life Systems' in New Zealand:** Explore the relevance, affordability and potential of smart 'Life Systems' technology for integrating health, fire and security measures for older people in New Zealand and overcoming 'competing' concerns and fears and measures.

2. Introduction

2.1 Background

Strategic Objective One of the New Zealand Fire Service Commission Strategic Plan 2012 – 2015 is to Improve Community Fire Outcomes.⁴ This includes reducing fire fatalities and injuries, and improving fire safety knowledge and behaviour. One of the Fire Service's at risk groups is people aged 65 years and over - a significant and growing part of New Zealand's population, expected to reach 21 percent of New Zealand's total population by 2031. While some Fire Service activities are targeting older people (e.g. the recently launched 'Home safe home' fire safety basics booklet), other activities have been discontinued (e.g. older people's fire safety kit) and there is no overarching programme that focuses on fire safety of older people.

There has been a significant decline in fatalities and injuries from fires in New Zealand in the last decade⁵. The Fire Service attributes its delivery of fire safety education as the main reason for this decline. However, the incidence of fire related injuries and fatalities for the 2012/13 year were above the average annual rate for the last decade. While analysis of fires has shown no single contributing factor, several common factors were present in most of the fire fatalities including the increasing age of the victims.⁶

In 2013 Litmus undertook research for the Fire Service to explore social marketing approaches for improving safety behaviour in older people.⁷ This report concluded that 'the challenge for the Fire Service is making fire safety relevant for older people, as older people may not view themselves as being at risk, and are more concerned about home safety issues such as burglaries or earthquakes which are considered more relevant, more likely to happen, and unpreventable'.

Police statistics show that older people are less likely to be the victims of crime, including burglaries and violent crimes.⁸ Despite this, Victim Support reports that older New Zealanders, especially those who live alone, often feel more vulnerable to crime, and this can be 'debilitating'.⁹ Fear may be exacerbated by media coverage of home invasions and sexual assaults on older people.

Fear of crime, coupled with strong messages from the New Zealand Police and other agencies, means that many older people take home security precautions, such as installing deadlocks on their doors and windows. The Fire Service is concerned by the potential

4 New Zealand Fire Service Strategic Plan 2012-2015. New Zealand Fire Service. 2012.

5 Annual Report for the Year ended 30 June 2012. New Zealand Fire Service. 2012.

⁶ Fire Deaths and Serious Injury Report June 2013. New Zealand Fire Service 2013.

7 Exploring Social Marketing Approaches (particularly digital channels) for Improving Safety Behaviour in Older People, Litmus. CRF2013.

8 Crime and Safety Survey. Ministry of Justice. 2009.

9 <http://www.police.govt.nz/news/featured/older-people-less-likely-be-victims-serious-crime-video>.

disparity between home security features and effective fire safety in the home: namely, some home security measures can hinder evacuation in the event of a fire. The Fire Service commissioned Litmus under the 2013-2014 Contestable Research Fund to identify how older New Zealanders can remain fire safe, while maintaining their sense of security.

2.2 Research objectives

The objectives of the research were to:

1. Understand and measure older people's knowledge, attitudes and behaviours regarding home security.
2. Understand and measure older people's attitudes towards potential evacuation risks posed by some home security measures.
3. Understand how other jurisdictions are mitigating these risks.
4. Provide recommendations on how the New Zealand Fire Service can help older people be fire safe while maintaining their security needs.

2.3 Research approach

A four stage research approach was used to answer the research questions. This included focus groups and an online survey of older people, expert interviews and a review of national and international evidence, and data collection occurred between 15 July and 15 September 2014.

1. Focus groups

Four focus groups were undertaken with older people to explore their knowledge, attitudes and behaviours regarding home security and the risks posed to fire evacuation by some home security measures. The focus group discussion guide is appended.

Focus group participants were mainly aged over 70 years, and some participants had mobility and/or sensory impairments.

Two focus groups were conducted with people who live with their partners and two focus groups were conducted with people who live alone. Across the four focus groups, 13 women and 11 men participated, and 17 people who own the home they live in and seven people who rent the home they live in participated.

Table 1: Focus group sample matrix

Number	Location	Living alone status	Gender	Home ownership
1	Lower Hutt	Living alone	3 women 3 men	4 living in own home 2 living in rental accommodation
2	Palmerston North	Living alone	4 women 2 men	4 living in own home 2 living in rental accommodation
3	Masterton	Living with partner	3 women 3 men	4 living in own home 2 living in rental accommodation
4	Fielding	Living with partner	3 women 3 men	5 living in own home 1 living in rental accommodation

Participants were recruited from qualitative research panels. Focus groups were two hours long and conducted in community meeting rooms.

2. Online survey

An online survey was undertaken of older Fly Buys members to measure their knowledge, attitudes and behaviours regarding home security and the risks posed to fire evacuation by some home security measures. The online survey questionnaire is appended.

In total 2,723 older people were sent the survey. Of those, 216 completed the survey (8% response rate). A further 125 people started and did not complete the survey.¹⁰

The survey was designed to include people aged 70 years and over, with a mix of the following demographic characteristics:

- gender
- living status
- home ownership
- and rural/urban living.

The number of people sent the survey was large to achieve the minimum numbers across the demographic characteristics required for analysis. (Table 2)

¹⁰ Incomplete surveys are excluded from analysis.

Table 2: online survey sampling matrix¹¹

Demographic sampled		Minimum number required	Number achieved
Living alone status	Living alone	60	66
	Living with partner or other living situation	60	150
Gender	Women	60	108
	Men	60	108
Home ownership	Living in own home	50	177
	Living in rental accommodation	50	28
	Living in a retirement village	No min	11
rural/urban	Rural	Mix	38
	Provincial		66
	Urban		112
Total		200	216

A total of **216** people (108 women and 108 men) responded to the survey. All participants were aged 70 years and over. Nearly one quarter of respondents (24%) said they had a long term (lasting six months or more) disability.

Over two thirds of respondents (67%) live with their partner, 31% live alone and 3% live with at least one other person who is not their partner. Over one half of all respondents (52%) live in a city, 31% live in a provincial location and 18% live in a rural location. The majority of respondents own the home they are living in (82%).

3. Expert interviews

Expert interviews were conducted with **three** organisations (a government agency working in the community justice sector, a national non-government organisation promoting and supporting safe and caring communities, and a national private security systems firm) to understand the triggers and reasons for older people adopting home security measures and their understanding of the related fire safety risks. Interviews were conducted face-to-face in Wellington and by telephone in Auckland.

4. Evidence review

A review of national and international evidence was undertaken to identify any approaches to mitigating the risk of home security measures on fire safety used in other jurisdictions. The search was undertaken using the New Zealand Fire Service library and the Google Fire Information Hub. A general google search and Google Scholar search were also undertaken.

¹¹ Due to the project including people aged 70 years and over, the majority of participants were Pākehā.

3. Living Safely, Securely and Independently

For many older people, their fears and anxieties about home security and house fires, as well as other events such as earthquakes and natural disasters are secondary to their real concerns about keeping well and remaining independent.

3.1 Older people's experiences of social isolation

The contribution that older people make to New Zealand society should be celebrated. The wealth of skills, knowledge and wisdom that older people bring to our community is invaluable. However, for many people growing old comes with a loss of identity, control and relevance.

Many older people experience social isolation – an absence of social contact with family or friends or community involvement. Older people spend more time on mass media activities and have more free time than younger people. Older people also spend more time alone than younger people, and older women spend more time alone than older men, who spend more time with family from their household than older women do. These differences are probably due to women living longer than men.¹²

While the chances of feeling lonely decreases with age, there is a strong relationship between a person's economic standard of living and their feelings of loneliness. This association increases for older people. Older women are more likely to feel lonely than older men, and older people are less likely to feel lonely when they live in a two-person household.¹³

The amount of time older people spend at home, often alone, not participating socially and disconnected from families and communities has an influence on older people's needs and concerns about living safely, securely and independently.

3.2 Older people's primary safety concerns health related

The key concern that older people have that could undermine their ability to live safely, securely and independently in their homes is having an adverse health event (e.g. a stroke or a heart attack) or accident (e.g. slip, trip and fall). For many older people, their fears and anxieties about home security and house fires, as well as other events such as earthquakes and natural disasters are very much secondary to their real concerns about health and wellbeing.

¹² Time Use Survey 2009/10 Statistics New Zealand, 2011.

¹³ Loneliness in New Zealand, Statistics New Zealand, 2013.

People over 75 years and/or those with a chronic health condition or disability are more likely to consider this a key concern undermining their ability to live safely, securely and independently in their own homes. Along with a loss of independence many older people also worry about the affordability of long term residential care.

Many older people enjoy living healthy, active and independent lives in their own homes. However, it is recognised that people over 65 years do, on average, have higher health and support needs. Health concerns and a need for greater support is a key factor determining where older people live. As people age, they often move closer to family/whānau, and hospital, GP, pharmacies and other medical services, shops, and public transport systems so they can remain independent for as long as possible. Often this means downsizing to smaller, more modern and easier to maintain properties, and at the same time revisiting their home security and fire prevention measures.

‘There is a sense of security, having the hospital close by. If anything happened it is nice to know there is an ED.’

Many older people and their families/whānau fear not getting help immediately in the event of illness or accident, and being left in a vulnerable position for days. Medical alarms provide older people and their families/whānau with comfort and assurance that professional, timely help is available. Older people with a disability can claim medical alarm rental and monitoring as part of the Disability Allowance

‘I fear that I may die and not be found immediately.’

Section 10 discusses how medical alarms are being integrated into smart systems overseas to provide user-centred solutions to health and wellbeing, home security and fire protection.

4. Older People's Views on Crime

Older people hold inaccurate and negative views about crime levels.

Despite the drop in crime rate over the last ten years, older people do not feel safe in their communities. Only 13% agree that there is less crime in their communities than ten years ago and 11% agree that there is less crime in New Zealand than ten years ago. This finding supports the separate research study by the Ministry of Justice that New Zealanders hold inaccurate and negative views about crime levels in society and wrongly believed that crime was increasing.¹⁴ Older people believe there is more violent crime and sexual offending, drug and anti-social crime, property crime and dishonesty offences. These perceptions mainly come from television and newspapers that often report on older people being the victims of crime.

'In today's society they are more violent than in recent years. Basically they don't give a damn about their actions.'

'When I read the paper I get frightened. Crime is happening all around New Zealand and it makes you think.'

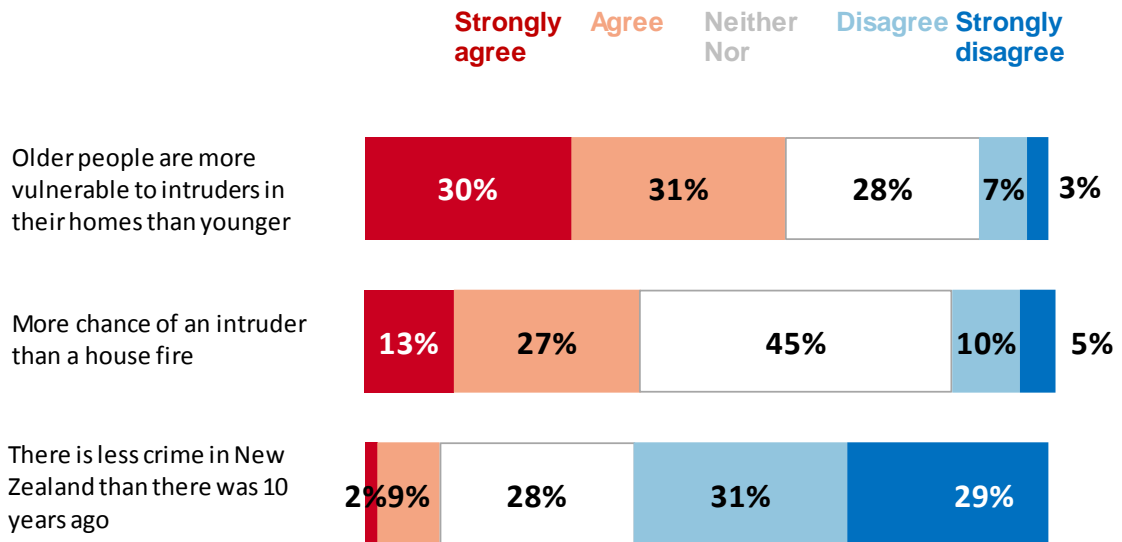
Furthermore, in spite of crime figures showing that victims of crime are more likely to be younger people, 61% believe older people are more vulnerable to intruders in their homes than younger people. Older people's most significant fear is being confronted and trapped by an intruder, particularly at night and/or when they are alone. Due to their age and physical ability, older people would feel more vulnerable to an attacker, as they are less able to escape from or fend off an attacker.

'At my age I wouldn't stand a chance regards to being bashed or raped.'

Overall, older people believe there is more chance of being the victim of crime at home than having a house fire. Forty percent of older people believe there is more chance of an intruder coming onto their property or into their home than having a house fire.

¹⁴ Crime and Safety Survey. Ministry of Justice. 2009.

Figure 1: Older people's perceptions of crime levels



Base: 216

While violent and sexual offending is of greatest concern, many older people are also fearful of intruders entering and damaging their property and stealing their belongings, especially irreplaceable personal items (wedding rings and jewellery) and family treasures. A few older people have had their keys and credit cards stolen during burglaries causing additional anxiety. Older people who have been burgled in the past felt violated, say they lost confidence and became withdrawn after the event, and key informants believe older people often take longer to recover from a burglary or other crime than younger people.

‘You lose confidence when you are burgled. You become nervous about the intrusion.’

‘Someone took my wife's credit cards from her purse while she was working in the garden and then rang pretending to be the bank, saying they needed her pin number in order to cancel the "compromised" cards. I'm more concerned about theft or fraud than violence.’

5. Older People's Vulnerability in Relation to Crime

The negative attitudes and ageism that are present in New Zealand society are contributing to older people's vulnerability in relation to crime.

5.1 Older women feel more vulnerable to crime than older men

Many older people note their diminishing relevance in their communities, due to their declining status and role¹⁵. This contributes to their vulnerability towards crime and victimisation. Older women (particularly women living alone) feel more vulnerable to crime than older men, particularly in relation to violent crime and sexual offending. For women their loss of strength and increasing frailty that comes with ageing, contributes to feelings of vulnerability, powerlessness and loss of privacy and security. Women are more likely to believe they have been personally targeted, and/or offending such as tagging and graffiti could lead to more serious crime.

'My house is a fortress at night. I have a steel rod in the door and a pole in the ranch slider. I have a pot plant in the way so I know if anyone is coming. I also have a lock on my bedroom door.'

5.2 People living in tight-knit communities feel more resilient to crime

Older people living in urban areas are more likely to be concerned with crime and their security than older people living in rural areas. This perception is driven by feelings of less cooperation and collaboration in communities in recent years. People living in urban areas note the changing nature of communities, from strong, connected and caring communities where everyone knew one another and helped each other, for example, women looked after each other's children and men pulled together to build garages, shed and decks, to more fragmented communities. People living in urban communities also note they have less relevance in their communities due to their often diminishing status and role. This lack of community connectedness contributes to their perceptions of safety and security from crime.

'When people move into the neighbourhood, you don't get to know them because they all go by car – you don't see them

¹⁵ Older people participating in the study were mainly Pākehā. This view about the declining status and role of older people may not be the same for other ethnic groups.

walking and everyone goes to work and no one is at home. It's only me and the man across the street who are at home during the day.'

However, in spite of gender and location, older people living in close knit communities with supportive and vigilant neighbours are less concerned about intruders and break-ins than people who feel isolated in their communities. These people live in resilient communities with Neighbourhood Support structures or retirement villages.

'We have a gang in our street and it's absolutely no problem. It's because we live in a strong neighbourhood, the gang don't want to get out of step.'

6. Older People's Attitudes and Beliefs towards Fire Risk

Older people believe their fire risk is low, due to their lifestyle, daily activities and built environment.

6.1 Generally, older people are more concerned about intruders coming onto their property and breaking into their house than house fires.

While older people hold strong views over the increasing prevalence of crime in New Zealand, they hold soft opinions on the prevalence of house fires. This could be due to the different levels of exposure older people have had to intruders and break-ins and fires in their lifetimes, and the extent intruders and break-ins receive mass media coverage. Seventeen percent of older people have had an intruder on their property at some point in their life, compared with 5% who have had a house fire.

'Positive stories of community resilience to crime don't make the press.' (NGO)

'There is more chance of having someone in your back yard than having a house fire. If you are looking after your house wiring, fire shouldn't be too much of a concern.'

Men tend to be more concerned about house fires than women. This difference may be due to men typically being the breadwinners their whole lives and their house represents a lifetime of work, security and identity. Older people living in rural areas tend to be more concerned about house fires than older people living in urban areas. This difference is likely to be due to their relative isolation and water scarcity. Older people are more concerned about house fires at night, when they are less alert.

'I don't like the thought of burglars. I would feel worse if I was burgled than if the house burnt down.'

'In our home security is more important to my wife than a risk of fire, there is no question about it. So for us feeling comfortable and secure in our own home is more of a priority.'

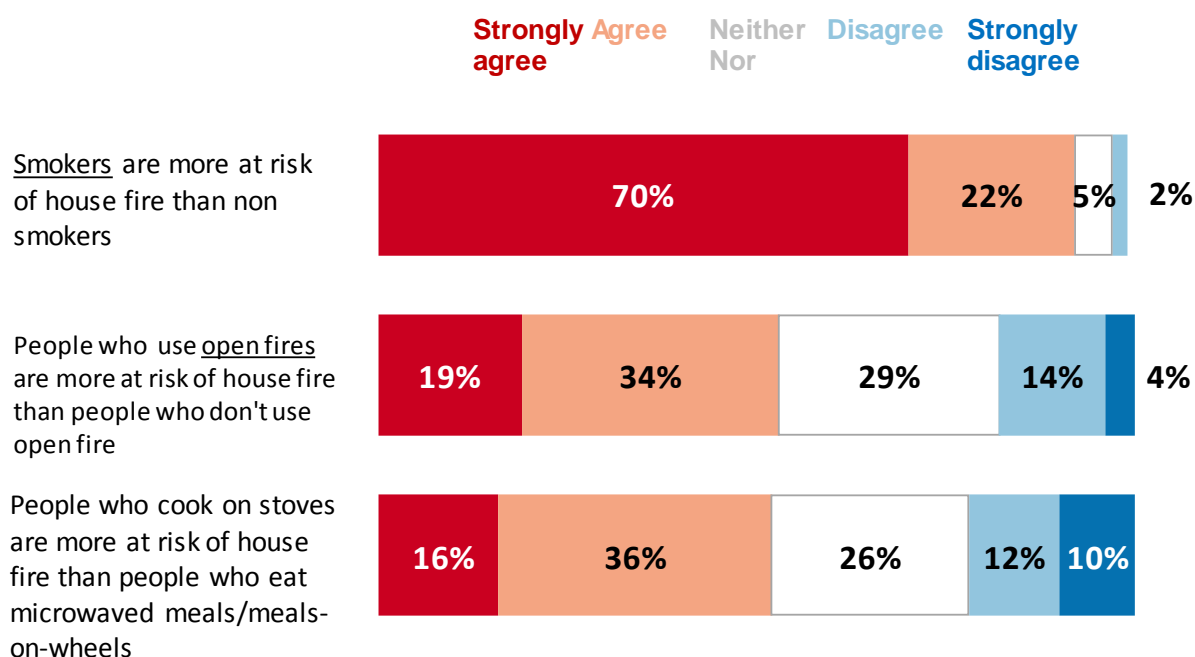
6.2 Older people believe that their fire risk has reduced as they have got older, due to their life style, daily activities and built environment.

Many older people in their lifetimes have experienced fires that have been potentially devastating, and some recall instances where house fires have caused fatalities, injury, destruction and emotional and financial loss in their communities. Older people believe that

house fires are more likely to be started through cigarettes, grilling and frying, candles and other open flames, old house wiring, and clothes (particularly children’s nightwear) catching fire. Over 90% of older people agree that people who smoke are more likely to cause a house fire than people who do not smoke, and over 50% of older people agree that people who cook on stoves are more at risk of causing a house fire than people who use other means of cooking and preparing meals (e.g. heating meals in the microwave or receiving meals-on-wheels).

‘There is a book in the library about the old pubs in the Wairarapa and virtually every one of them burnt down because of a log rolling out of an open fire.’

Figure 2: Older people’s perceptions of fire risk behaviour



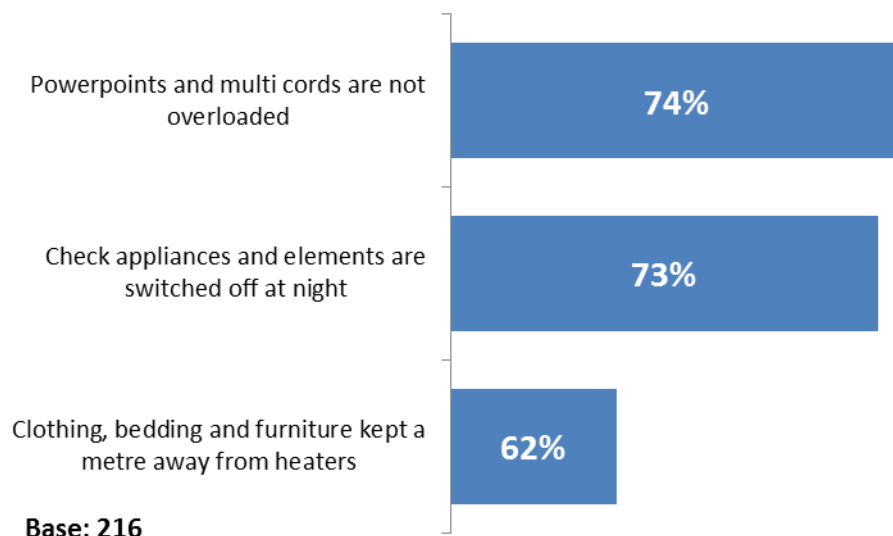
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In spite of Fire Service fire fatality statistics indicates the increasing age of victims, older people believe that their fire risk has reduced as they have got older, due to their life style, daily activities and built environment.

Older people, who downsized and moved to newer, low maintenance homes when they retired, feel their houses are now more fire safe. Older people also believe they are at low risk of causing house fires, as the vast majority of them are non-smokers, rarely deep fry and grill as they are preparing smaller meals for one or two people, and becoming more conscious of lifestyle-related diseases. Many older people prefer more fuel efficient heating systems (e.g. heat pumps and energy efficient log burners) over open fires.

Older people also believe that they are very cautious and responsible in ensuring power cords and multi cords are not overloaded and checking appliances and elements are switched off before going to bed, and keeping clothing, bedding and furniture away from heaters. Three quarters of older people ensure power cords and multi cords are not overloaded and check appliances and elements are switched off before going to bed, and 62% keep clothing, bedding and furniture away from heaters.

Figure 3: Older people's fire prevention measures



6.3. Absentmindedness in older people can contribute to house fires

Despite these factors, many older people recognise that absentmindedness that often comes with old age could contribute to a house fire. Some older people say occasionally they had forgotten to turn off elements or become distracted and left elements unattended.

‘I was stir-frying and went outside to pick some herbs. I got **distracted and started weeding, and then I noticed smoke coming out of the house. I ran inside and panicked when I saw the pan was on fire, so I threw a tea towel on it and the whole thing went up in flames. I opened the window and threw the flaming pan and tea towel out the window.’**

‘Nowadays I worry about my **mind disappearing and I am worried that I may do something and forget about it. I’m using the microwave a lot more because it is safer.’**

7. Older People's Security Measures

Older people take a range of measures to create a strong visible defence to potential intruders, and are not considering the potential fire evacuation risks these security measures impose.

7.1. Older people take a range of measures to create a strong visible defence to potential intruders.

Older people evaluate their home security, and install new measures when they downsize their properties, when they renew their insurance or change insurance company and after they or a neighbour have had an intruder or been burgled. Many older people believe that insurance companies require deadlocks on doors, and may not pay out on a claim if the owner or occupier is proven not to have effectively secured their homes. A key informant working in the security sector says insurance companies ask people to assess the risk to their homes and pass on discounts if they pass a certain security level. Older people also upgrade their security measures following advice and insistence of family who want assurance that their parents are safe and secure in their homes.

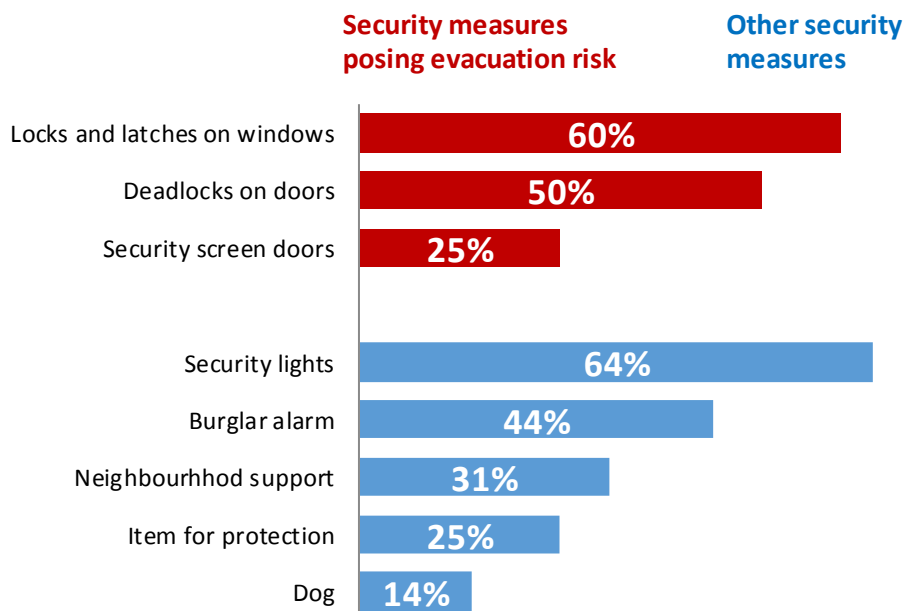
'We have deadlocks because the insurance company demanded it.' (Older person)

'Insurance discounts for meeting security criteria is most appealing to budget conscious older people.' (Security expert)

The security expert says that home security in New Zealand and Australia are very 'DIY/home grown' with a high degree of improvisation, compared to home security adopted in the USA and elsewhere. Home security measures in New Zealand are relatively affordable and easy to install by a family member and often locksmiths where locks and bolts are purchased from say 'we can install these at no extra cost or for a low fee.'

Many measures which are designed to strengthen the security of older people's homes to deter or delay an intruder can pose a potential evacuation risk in the event of fire, and could mean people being trapped with an intruder. These include installing locks and latches on windows, deadlocks on doors that are designed so burglars cannot exit with large household items, and security screen doors which add another layer of protection to main doors and ranch sliders. Sixty percent of older people have locks and latches on windows, 50% have deadlocks on doors and 25% have security screen doors.

Figure 4: Security measures undertaken by older people



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7.2. Older people are not considering the potential fire evacuation risk security measures pose

Many older people and their families are not considering the potential fire evacuation risk security measures pose when determining the security measures for their homes. At best, older people believe that the security measures (e.g. installing deadlocks or security screen doors) they have taken to prevent an intruder coming through their main doors will slow down rather than prevent their evacuation in a house fire. Many older people overestimate the time they have to evacuate their home if there was a fire, and assume they have ‘several minutes’ to exit. The security expert interviewed says there is not the same protection of people in residential settings as there is in public buildings, where ease of egress is a requirement under the Building Code.

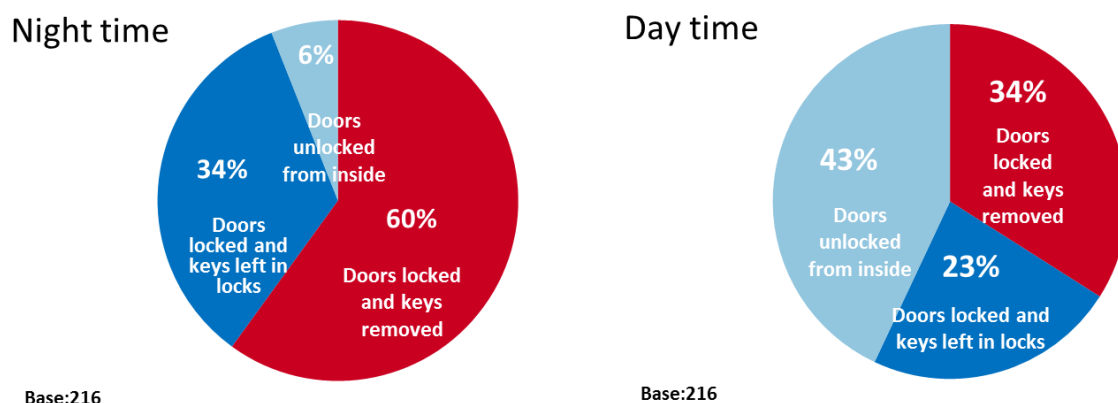
Older people with arthritis find it difficult operating snibs, turning keys in locks and disengaging latches. Older people also acknowledge that security screen doors are an additional barrier and could slow down their evacuation in a fire.

‘My front door also has a screen door. When both are locked against intruders it means two doors need to be unlocked quickly in the event of a quick exit. Sometimes I find it hard to unlock them because of arthritis in my fingers.’ (Older person)

‘People don’t realise that they are as stuck as they are secure with deadlocks.’ (Security expert)

Many older people lock their doors both at night and during the day and remove the keys from the locks. During the night, 94% of older people lock their doors when they are at home, and 60% remove the keys from the locks. During the day, 57% of older people lock their doors when they are at home, and 34% remove the keys from the locks. Women, people living alone and people living in cities are more likely to remove the keys from the locks, making these groups more at risk of being able to quickly evacuate from a fire.

Figure 5: Removing keys from deadlocks during the night and day time



People are more likely to remove locks from main doors if they have glass doors or glass windows next to doors that intruders could break and enter by turning the keys if they were left in locks. While many people say their deadlock keys are accessible, either on a side board, on a hook, or in a drawer, people are not always keeping keys in the same place making them easy to misplace and hard to retrieve in a fire. Often deadlock keys are on a single key ring, which would slow down peoples' evacuation, depending on where the fire was located. Keys are often placed at waist or head height which would be difficult and dangerous to reach for in a crawl position. Very few people keep deadlock keys in their pockets or attached to clothing to enable a faster exit.

Older people believe their main exit in a house fire will be through one of their main doors. Many older people are not seeing the poles and other obstacles placed in less frequently used exits (e.g. bedroom ranch sliders) as significant impediments to evacuation. Partly, this is due to older people not foreseeing that they would need to use these doors, if the main doors they usually enter and exit from are not safe to exit from.

Generally, older people believe the locks and latches they have on their windows would not significantly pose a risk of escape from a fire, as many have impaired mobility and vision making exiting from a window difficult or impossible.

8. Older People's Fire Safety Preventative Measures

Older people believe the preventative measures they have taken by installing smoke alarms and having clear escape routes will mitigate exit delays imposed by home security measures.

8.1 Most older people have working smoke alarms and clear escape pathways

Overwhelmingly, older people believe the preventative action they have taken by installing smoke alarms will alert them to a house fire and give them time to evacuate and/or to put the fire out. They also believe that clear escape paths will facilitate a faster exit

'We wouldn't be slowed down much [from security measures] as the smoke alarms should give ample warning and we have fire extinguishers conveniently placed.'

Over 90% of older people have at least one working smoke alarm and 77% have their alarms regularly tested. Older people get their smoke alarms tested generally once a year, usually around the beginning or end of day light savings through the help of a family member, neighbour or the Fire Service. Older people raised many questions in focus groups about the recommended number and placement of smoke alarms, signalling a need for more education in this area.

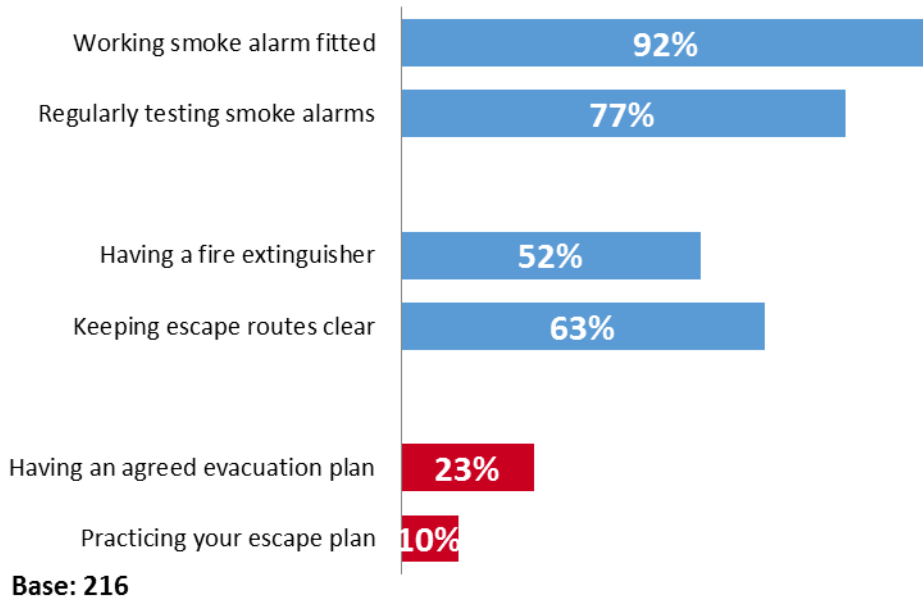
Sixty three percent of older people report having their escape routes clear. However, they mention that their actions to keep passages clear are more in response to preventing a trip or fall, than to escape quickly in a fire.

Around one half of older people (52%) have a fire extinguisher to put out fires. Older people with extinguishers mention that they seldom get them checked and many would not have the strength or dexterity to use them, if there was a house fire. Women are less confident in their knowledge and ability to use an extinguisher, but having an extinguisher in their kitchen areas gives them comfort.

However, despite these fire safety measures, less than one quarter of older people (23%) have an escape plan, and only 10% had practiced their plan.

'No one really has an official evacuation plan. Do you really need one when you are on your own? It's more important for families than when you are not just getting yourself out.'

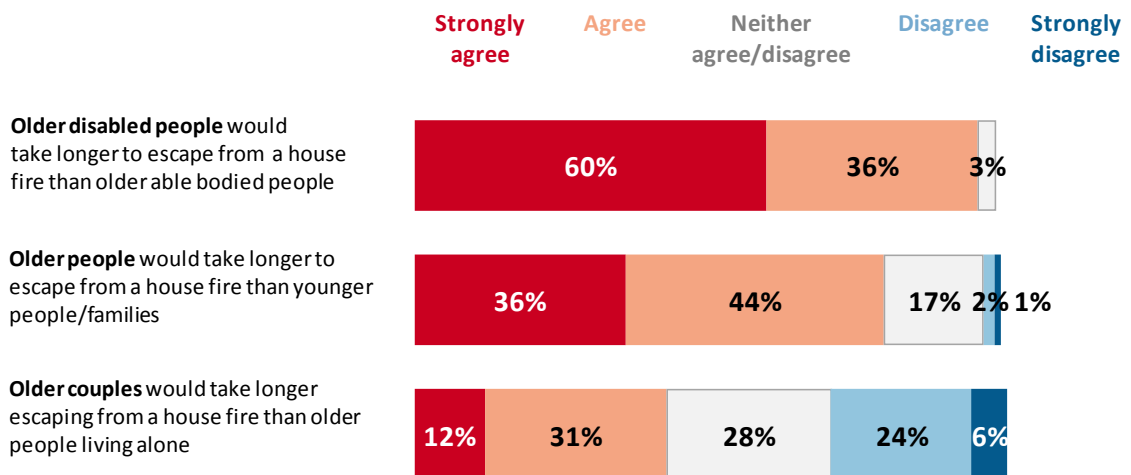
Figure 6: Fire safety preventative measures



8.2. Older people acknowledge they would be slow to escape from a house fire

Eighty percent of older people agree it would take them longer to escape from a house fire than other demographic groups, and 98% agree it would take them longer to escape if they have a disability.

Figure 7: Older people’s attitudes on escape times



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Many older people have hearing impairments, which restricts their ability to hear smoke alarms and be alerted to a house fire. Some older people’s medications cause drowsiness and would make them slow to respond to a house fire.

Many older people have poor mobility and/or low vision and have fewer exit options, and would be afraid of tripping and falling trying to escape. Older people would have few exit options in the event of fire, as their mobility would prevent them climbing out windows. People whose bedrooms are on upper floors are very conscious of their limited means of escape.

The ability to evacuate from a fire is more profoundly felt by couples where a disabled partner would be dependent on an able bodied partner for assistance. Women in particular would be unable to lift or provide significant assistance to their disabled partners if a fire broke out. In these cases couples say they would 'stick together' until help arrived.

'I know my husband wouldn't be able to get out, and I can honestly say that I couldn't just think about myself. I would have to give it a go for both of us.'

The fire security expert interviewed believes the 'run of the mill' smoke alarms and fire extinguishers may not be as effective for older people, due to their pitch and strength and dexterity required to operate them. The expert commented that there are products being developed and sold overseas targeting older people, but they are not in the market in New Zealand.

9. Older People's Views of Police and Fire Service Responsiveness

The visibility and responsiveness of the Police and Fire Service contributes to older people's views of crime and fire security.

9.1 Police responsiveness and crime resolution rates contribute to older people's inaccurate and negative views of crime

Older people generally believe the Police are less responsive than in the past, due to fewer personnel to respond to the rising crime, and competing priorities. Some older people are not confident that the Police will respond urgently in the event of an intruder on their property or burglary. Older people living in rural areas feel less confident that the Police can respond urgently or in a timely manner, due to their distance from the nearest Police station. Some rural people also lack of cell phone coverage, and/or their homes are in remote areas, which would be difficult for emergency services to find.

'We have rung the Police so many times and it takes them so long. It's always the same thing they have been busy...we don't have much confidence in them.'

'It would be most unnerving having to hide and wait.'

A perception of low Police resolution rates to burglaries and other crimes contributes to older people's view of crime. Older people mention that most media communications about crime focus on those that have been committed, rather than those that have been solved.

9.2. The responsiveness and visibility of the Fire Service contributes to older people's positive views on fire security

Older people view the Fire Service is to be an effective and well-resourced organisation with highly trained personnel, high performance fire trucks and state of the art fire-fighting equipment. Overall, people perceive the Fire Service to be more responsive than in the past, due to better telecommunications, faster trucks and better and more accessible roads. Older people are therefore confident in the Fire Service's ability to respond to a call out. People who have had a callout say the Fire Service responded urgently and attended the scene quickly.

'The Fire Service came to my house because I was cooking and then went and watched TV. The neighbours saw smoke and called them. They came very quickly.'

The contact older people have with the Fire Service through installing and checking smoke alarms, checking electric blankets and other electrical equipment, and checking fire hydrants and sprinkler systems provides a heightened view of the Fire Service being

equipped and able to respond urgently to a call out. Having the fire truck and several fire personnel present at these events contributes to this sense of security.

‘I rang and asked them if they would come and change my batteries because I hate heights and ladders and it is a really good service. I liked the way they came with the engine and the crew to change the batteries.’

‘I see them around town all the time, checking the hydrants and buildings and all the preventative measures.’

Older people consider the Fire Service is very proactive in both television and local media promoting the effectiveness of smoke alarms. Many have seen the current fire safety television campaign, and recall its key messages about the effectiveness of smoke alarms. At a community level, the Fire Service is considered proactive at analysing the fire protective measures used in house fires and reinforcing the ‘smoke alarms save lives’ messages.

‘Whenever there is a fire here the Fire Service are in the paper with their comments and they say ‘there were no smoke alarms or they were not working’. They are very proactive in getting the messages out.’

In provincial and rural communities, the visibility of the Fire Service in community events and fundraisers is also contributing to older people’s sense of fire security. Focus group participants in Masterton, Palmerston North and Fielding say they regularly see fire trucks and hear sirens responding to fires and traffic emergencies, and are also aware of the Fire Service actively participating in community events and fundraisers such as food bank appeals and local sponsorship.

‘They have an annual appeal where they drive through town and let off their sirens and we bring out our tinned food and non-perishables.’

10. Overseas Jurisdictions

As technology changes there is going to be greater integration of health systems, home security and fire prevention. “Life systems” is the new philosophy.

10.1 Other jurisdictions risk mitigation strategies posed by home security measures

There are many aged care websites that recognise older people’s increased fire risk as a result of, for example, reduced physical ability (less able to hear smoke alarms and less able to escape quickly), more likely to ‘make do’ with old or low quality appliances, and more likely to have clutter blocking exit pathways.¹⁶ Some also provide some tips about keeping older people safe in their homes, including fire safety.

A web-search of international fire departments and organisations for older people show very little information of the fire safety risks posed by home security measures beyond a bullet point on a home safety check list to make sure exits are clear and to keep door and window keys in a handy place.

Fire service websites tend to provide general fire safety information for adults not targeted information for older people. Fire service webpages commonly have a tab or information specifically about children (or parents and schools). Very few have interventions targeted at older people. Community education programmes also tend to focus on children, not older people. Fire service websites that have a tab or targeted information regarding older people include:

- National Fire Protection Association (NFPA), United States of America (US)
- New South Wales, Australia (whole section on senior safety)
- Queensland, Australia
- Victoria, Australia (helping elderly leave early in case of bush fires)
- Scotland (top ten tips for safety, home visits)
- Canada (tab with tips for seniors, and for family members).

Some fire service offered home visits on their websites to check the fire safety of people’s homes (e.g., New South Wales, US & London Fire Brigades). It is commonly suggested that older people practice escape plans.

¹⁶ Examples of websites include: Agewell, Aging care, My Ageing Parent, At Home Care, Elder Parent Help, Science Daily, Hue and Cry, SA Metropolitan FS, NSW FS, QLD FS, Victoria FS, UK FS, USA fire administration, London Fire Brigade, Fire Prevention Canada, Commonwealth of Massachusetts, Montgomery County, Scottish Fire and Rescue, Pennsylvania State Fire Commissioner, kcet.org

10.2 The way forward: Use of technology in a holistic home safety approach

Internationally there is move towards assistive technologies and holistic approaches to home safety which includes for example, health (illness and injuries), security and fire safety in one package.

Smart homes: In the United Kingdom (UK) and U.S there is growing interest in smart homes. Smart homes are homes equipped with a communication network, sensors, and other electronic devices that can be remotely monitored and controlled to respond to the needs of the inhabitants. Types of services provided vary based on the users' needs. A holistic approach includes a broad spectrum of services such as security, assisted living, health, entertainment, communication, convenience and comfort, and energy efficiency.¹⁷

Smart homes are targeted towards people who are living alone and unable to seek help in emergencies, older people, people with disabilities, caregivers, and those living in remote communities (or who are not connected to their community).¹⁸

There are some barriers to the use of smart homes, which include: cost of installation and ongoing monitoring costs, perceptions that older homes may not be compatible, difficulties in operating the technology or unreliability of technologies, privacy and data security concerns.¹⁹

Adapting technologies: Older people are unlikely to purchase new assistive technologies unless they perceived a real need for it. Where existing technologies could be adapted or updated this considered a more favourable option. For example, smoke alarms that send signal/alert to company or nominated person, automatic lighting, keyless locks, remote programming options using mobile phone innovations.²⁰

General adaptive technologies that are more 'low-tech' include: lever door handles, amplifiers on door bells and telephones, electric window and door openers.²¹

Integrate community involvement: In Japan there is a move towards integrating community involvement with specialised alarm systems and technology. Fire department home visits include visiting the next door and nearby neighbours, and fitting exterior alarms to alert neighbours when the internal smoke alarm is activated.

There is also an initiative in which a willing person is given training to become a 'community assistant.' Community assistants work with the local fire department by helping an older person to escape, directing first responders, and/or providing information about the older occupant to the responding fire department.

¹⁷ The development of smart homes market in the UK. Balta-Ozkan et al. 2013.

¹⁸ Smart homes - Current features and future perspectives. Chan et al. 2009.

¹⁹ Social barriers to the adoption of smart homes. Balta-Ozkan et al. 2013.

²⁰ Emerging Technologies to Enhance the Safety of Older People in Their Homes. Daniel et al. 2009 & The development of smart homes smart in the UK. Balta-Ozkan et al. 2013.

²¹ Emerging Technologies to Enhance the Safety of Older People in Their Homes. Daniel et al. 2009

Pendant alarm: Similar to health alarms available in New Zealand, pendant alarms are heavily encouraged by Tokyo and Osaka fire departments. The alarms are worn around the neck, and the wearer can push a button to report a fire or health emergency.

11. Recommendations

The Research Team makes the following recommendations based on the research findings:

- 1. Develop a Fire Safety Programme for Older People to acknowledge the increased fire risk older people have as a result of their physical and sensory impairment.** This programme should include an overarching strategy for older people's fire safety, and activities including relevant information and messaging, education, technology and support.
- 2. Develop and strengthen public and private sector partnerships.** Strong sector partnerships will assist collaboration for maintaining older people's safety, security and independence and break down 'competing messaging.' Partners would include the New Zealand Police, Neighbourhood Support, Insurance Council of New Zealand, and the medical, fire (private sector) and security sector.
- 3. Research into age-appropriate fire prevention and safety technology:** Review the effectiveness and usability of current fire safety measures and packaging (e.g. smoke alarms and fire extinguishers, etc) with older people. Where required, explore options and partnerships for the design and supply of age-appropriate technology.
- 4. Investigate the potential of integrated 'Life Systems' in New Zealand:** Explore the relevance, affordability and potential of smart 'Life Systems' technology for integrating health, fire and security measures for older people in New Zealand and overcoming 'competing' concerns and fears and measures.

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- Hue and Cry <http://www.hueandcry.com/blog/home-security/home-security-and-safety-tips-for-the-elderly/>
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