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**Exploring the Demographic, Social, and Neighbourhood Predictors of Loneliness  
among New Zealand's Older Adults**

A thesis presented in partial fulfilment of requirements for the degree of

Master of Arts

In

Psychology

At Massey University, Manawatu, New Zealand

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2023

### **Abstract**

Increased life expectancy has resulted in a larger proportion of older adults in the population. Through multiple changes, older adults' social networks are shrinking. Consequently, these losses in social connections have resulted in loneliness. Loneliness is a complex and multi-faceted concept, consisting of emotional and social factors. Whilst loneliness has been linked to socio-demographics (age, gender, marital status, and health), few studies have explored the relationship between loneliness and social or neighbourhood influences. The study had three main objectives; to determine how lonely New Zealand's older adult population is and the extent of emotional loneliness and social loneliness; to assess the socio-demographic predictors of loneliness among New Zealand's older adult population; and to investigate whether objective measures of social and neighbourhood variables were related to loneliness. The sample was comprised of 4351 New Zealand adults aged 55–92 years old. Data was analysed using both bivariate correlations and logistic regression. The study found loneliness was most strongly related to gender, physical health, mental health, quality of life, housing and neighbourhood satisfaction, and volunteering. The study was limited to subjective evaluations and the impact of Covid-19 on loneliness in older adults has not been addressed. Some of the known predictors of loneliness were supported. The study also identified important social and neighbourhood determinants that have previously been overlooked, opening up avenues for future research into age-friendly environments.

*Keywords:* Loneliness, Emotional Loneliness, Social Loneliness, Older Adults, Social Participation, Neighbourhood

## **Dedication**

This work is dedicated to my family, friends, supervisor, and proof-reader. You have all supported and encouraged me in different ways. Thank you for all your help in the completion of this work.

Mum, thank you for being there for me through all the struggles and tears, accomplishments, and triumphs. I really appreciate your patience listening to me drone on about my topic and explaining what I was doing. It has been an emotional rollercoaster, and I would like to thank you especially for being my anchor and keeping me sane during this time.

Jean and Dad, thank you for your support while I embarked on this crazy venture. I know it has been a long journey but having you both back my endeavour for higher education has meant so much to me.

To my friends, I really appreciate all the encouraging and supportive messages you have sent me throughout the process of this thesis. You all helped me through the hurdles and pushed me to keep going and achieve the impossible.

Chris, my supervisor, thank you for your unending patience and guidance over the past few years. Your passion for your field was inspiring, and I feel honoured to have been included in a small part of your work.

Stephanie, thank you so much for being an amazing proof-reader. Without you, I would not have been able to find all those half-formed ideas and the inconsistencies in my writing. I really appreciated your supportive and encouraging feedback.

**Table of Contents**

Abstract..... ii

Dedication..... iii

Table of Contents..... iv

List of Figures..... vii

List of Tables..... vii

Exploring the Demographic, Social, and Neighbourhood Predictors of Loneliness in Older Adults in  
New Zealand..... 1

    Development of Social Networks..... 3

        Theoretical Explanations for Reduction in Social Networks..... 5

    Loneliness..... 7

        Prevalence and Experience of Loneliness..... 7

        Definition of Loneliness..... 10

        Social Loneliness..... 12

        Emotional loneliness..... 13

        Loneliness Model..... 14

    Loneliness and Socio–demographic Variables..... 15

        Gender..... 16

        Health..... 18

        Marital Status..... 21

        Summary of Socio–demographic Factors..... 23

    Loneliness and Social Participation..... 23

## LONELINESS IN OLDER ADULTS

Volunteering .....	24
Belonging to Groups .....	25
Summary of Loneliness and Social Participation .....	26
Loneliness and Neighbourhood Characteristics.....	26
Housing and Neighbourhood Satisfaction .....	26
Social Cohesion .....	30
Summary of Loneliness and Neighbourhood Characteristics .....	31
Conclusion .....	31
Hypotheses.....	32
Method.....	35
Research Design.....	35
Pre-existing data.....	35
Participants.....	35
Measures .....	36
Loneliness .....	37
Age, Gender, Marital Status and Living Alone.....	38
Physical and Mental Health .....	39
Health Conditions .....	40
Quality of Life.....	40
Standard of Living .....	40
Social Participation .....	42
Housing Satisfaction .....	42

## LONELINESS IN OLDER ADULTS

Neighbourhood Satisfaction.....	43
Social Cohesion .....	44
Procedure .....	44
Analysis .....	46
Missing Data and Variable Transformations .....	46
Data Analyses .....	46
Results.....	47
Descriptive Statistics.....	47
Loneliness .....	48
Hypothesis Testing.....	49
Hypothesis 1 - Loneliness will be related to individual variables of gender, marital status, living alone, and negatively related to self-reported health .....	49
Hypothesis 2 - Loneliness will be negatively related to social engagement. ....	51
Hypothesis 3 - Loneliness will be negatively related to housing and neighbourhood satisfaction. ....	53
Hypothesis 4 - Loneliness will be negatively related to neighbourhood social cohesion. Length of time living at current residence will be negatively correlated with loneliness. ....	53
Logistic Regression.....	54
Discussion .....	69
Loneliness is Linked to Socio–Demographic Factors.....	70
Loneliness is Negatively Connected to Social Engagement .....	73
Loneliness is Negatively Related to Housing and Neighbourhood Satisfaction.....	74

Loneliness is Negatively Related to Social Cohesion.....	75
Limitations and Recommendations for Future Research.....	77
Conclusion .....	81
References.....	84
Appendix A: Health, Work, and Retirement (HWR) Survey 2020 .....	107
Appendix B: Additional Tables .....	152
Table B1: Percentage of Loneliness Responses to de Jong Gierveld Loneliness Scale Items for Categorical Variables.....	141
Table B2: Loneliness Correlations between Individual Loneliness Items and Continuous Variables .....	145
Table B3: T-test Results for Individual Health Conditions .....	146
Table B4: T-test Results for Individual Social Groups.....	147
Table B5: Logistic Regression excluding Housing Satisfaction.....	148

### **List of Figures**

<b>Figure 1</b> A Multi-Dimensional Model of Loneliness.....	34
<b>Figure 2</b> .....	57
<b>Figure 3</b> .....	58
<b>Figure 4</b> .....	59

### **List of Tables**

<b>Table 1</b> .....	60
<b>Table 2</b> .....	62
<b>Table 3</b> .....	63

<b>Table 4</b> .....	64
<b>Table 5</b> .....	65
<b>Table 6</b> .....	66
<b>Table 7</b> .....	67
<b>Table 8</b> .....	68

## **Exploring the Demographic, Social, and Neighbourhood Predictors of Loneliness in Older Adults in New Zealand**

People around the world today are living longer and the proportion of older adults in the world is increasing more rapidly than the general population growth (World Health Organisation, 2020). As at 2020, older adults comprised 13.5% (1 billion) of the global population, 2.5 times larger than the older adult population in 1980 (382 million), and is expected to double to 2.1 billion by 2050 (World Health Organisation, 2020). Currently, New Zealand's older adults (65+ years) make up 16.3% (847,400) of New Zealand's population, with the most recent population projections indicating this will increase to 23.1% (1.4 million) by 2048 and up to 31.9% (1.9 million) by 2073 (Statistics New Zealand, 2022).

The increasing number of older adults is a consequence of increasing life expectancy. The current global life expectancy is 73.4 years, double that of the life expectancy in 1900 (World Health Organisation, 2022). Life expectancy for New Zealanders is 80.0 years for males, and 83.5 years for females (Statistics New Zealand, 2021). With life expectancy increasing, the older adult category can no longer be considered as a homogeneous group. Some publications only categorise this overarching group into two categories (Steinberg et al., 2011): the old or young-old (65–79 years) and the old-old (80+ years). Whilst a useful distinction between the healthiest and most frail of older adults, further separation into three categories would provide a more nuanced interpretation of the health and well-being of older adults (Mason, 2011; World Health Organisation, 2022): the young-old (60–74 years), the old-old (75–84 years) and the oldest-old (85+ years). Although these categories have been generally based on the age of the older adult, the labels have provided a way of distinguishing between older adults of the same age, but with varying levels of physical and mental capacity. Heterogeneous groupings not only reflect the diversity of the ageing population, but also help to understand the differences in physical and mental health, with the young-old

generally having better physical and mental health, and the oldest-old, having the poorest physical and mental health. Variability in the ageing process between individuals can be explained by the ideas of reserve capacity and plasticity (Mason, 2011; Steinberg et al., 2011; World Health Organisation, 2020). Reserve capacity appears to be a protective feature allowing bodily functions to keep operating despite the ageing process. Although there are physical changes within the body, the older adult's resilience enables them to continue to perform at the same level as prior to the decline of ageing. Plasticity refers to activities that older adults can perform that help protect against ageing. (Mason, 2011; Steinberg et al., 2011; World Health Organisation, 2020). For example, light exercise and solving crossword puzzles can help slow the body's physical decline and mental decline, respectively. Importantly, participation in activities where the older adult is fully engaged (physically and mentally), such as volunteer work, not only slows the physical and mental decline, but also helps to maintain social connections (Hoffnung et al., 2013). Older adults who are involved in their local community are more likely to expand their social networks by associating not only with other people their own age, but also with younger people.

Volunteer work provides opportunities for engaging in social relationships within the community, and a way of contributing to that community in a similar fashion to pre-retirement, when they were a part of the workforce. Contributing to society can provide a great sense of self-worth and belongingness. Two of the five functional abilities outlined by the World Health Organisation in their latest report on healthy ageing in older adults concern social participation: the "ability to build and maintain relationships", and the "ability to contribute" to society (World Health Organisation, 2020, p. xiii). With these functional abilities in mind, it is therefore important to investigate how social connections are developed, how these change in older adulthood, and how the rest of society can enable older adults to maintain or rebuild their social networks. Social participation and social connections

are present from the moment an infant is born and continue throughout a person's life until they are deceased. In the next section, the development of social networks will be discussed, with a focus on how these networks change as people enter older adulthood.

### **Development of Social Networks**

This section will discuss the social development from birth through to older adulthood. The general trend of social networks is one of growth, until older adulthood, when social networks shrink. Theoretical explanations for the changes to older adults' social networks will then be discussed, namely, socioemotional selectivity theory and disengagement theory.

Social development begins at birth, when the first physical and social connections are made directly with the infant. Initially, these interactions centre around social responsiveness, with the baby being content with whoever responds to their needs (Grusec & Lytton, 1988; Hoffnug et al., 2013; Steinberg et al., 2011). The most consistently present figure in the infant's early life, usually the mother or father, is generally the first person they will form an attachment with. From about 2 months of age, the infant begins to develop a preference for particular people, generally the person who most often attends to their needs. Beyond that key attachment, the other members of the household (family) also establish relationships with the baby. As a child develops, so too does their social network. The social network expands beyond family to peer relationships, and other relationships with teachers and peers' parents, through attendance at school.

Social connections are continuously made throughout childhood, adolescence, and this pattern continues well into adulthood (Grusec & Lytton, 1988; Steinberg et al., 2011). During early adulthood, in particular the scope of relationship types expands when a person is first employed and navigates new behavioural etiquette. With increasing independence, the

extent and scope of social connections increase, and can be seen in everyday occurrences. A casual wave to a stranger in the street, interactions with workers at the local store, brunch with friends, a chat with a colleague, and work meetings are all examples of social interactions that can occur outside of the home, all involving differing levels of connection. Therefore, an individual's social network is usually large – with the closest relationships generally immediate and extended family, friends, neighbours, and work relationships. More distant relationships are also formed during casual everyday social interactions. What makes each person's social network unique is the nature of each relationship, and length and breadth of social communication between themselves and the people they interact with. For some, this may mean that the daily exchange they have with their bus driver, for example, may be more meaningful than the weekly obligatory phone call with a family member.

Whilst social patterns and relationships expand earlier in life and appear to stabilise during adulthood, social networks do not necessarily remain constant (Wenger, 1997). Prior to older adulthood, life changes, such as employment relocation, can sever or change some relationships and provide opportunities to develop new relationships. However, the most crucial time for changes to be made to the social network occurs in the transition from middle-age to older adult, with retirement as the key life event at this time. Subsequently, social networks begin to dwindle through loss of those work connections (Barnes et al., 2004; Conway et al., 2013), and through bereavement of spouses and friends (Victor et al., 2005). As a result of these relationship losses, family is the only social connection for some older adults. In some cases, there appears to be a role reversal, where the older adult's child becomes the caregiver, tasked with caring for their elderly parent in the same way their parent cared for them during their childhood. Unfortunately, in some situations, an older adult may have no family nor friends, thus reducing the social network to those more casual interactions with neighbours and the people they encounter outside of the home.

*Theoretical Explanations for Reduction in Social Networks*

Retirement and bereavement only partially explain the reduction in social interactions experienced by all older adults. This section will discuss the theoretical explanations for why there is a universal reduction in social networks upon entering older adulthood at around 60 years of age. First, socioemotional selectivity theory (SST) will be discussed, followed by a discussion of disengagement theory.

Socioemotional selectivity theory (SST), developed by Carstensen, explains the decline in social engagement in older adulthood as a preference for reducing social contacts to only the people closest to the older adult — usually family, spouses, and close friends. This preference could be due to declining energy levels and reduced patience for maintaining the large social network developed throughout the older adult's life. Additionally, the loss of their spouse and friends could also put an emotional toll on the older adult, restricting the amount of social energy they have for maintaining so many relationships. Although many relationships are severed, the connections that remain in the social network are those relationships which are most beneficial and meaningful to the older adult (Mason, 2011; Steinberg et al., 2011). For example, the older adult who has retired no longer needs to maintain work connections, or they may minimise their friendships to only those where there is reciprocity in effort in maintaining the friendship. Frailty could also play a role in the ability of older adults to continue with social interactions, with declining health reducing the capacity of the older adult to be mobile and involved in activities outside their home. Therefore, frail older adults may limit social connections to people who assist them in their daily living, and to people who visit with them.

Disengagement theory, developed by Cummings and Henry in 1961, describes the process of social pruning as one of internal reflection required to come to terms with their

eventual death (Hoffnung et al., 2013; Steinberg et al., 2011). The disengagement stems from spending more time and energy on self-reflection and less time and energy on maintaining their social network. As part of this self-reflection, the older adult faces a moral dilemma between integrity — acceptance of what has happened throughout their life and that the end of life is near, and despair — inability to come to terms with the events of their life and the inevitability of death (Hoffnung et al., 2013). Depending on the level of awareness of their inward thought processes, the severing of relationships in their social network could be an intentional or unintentional consequence of disengagement. This internal focus may be brought about by their own declining health, with the knowledge that their health will continue to decline until they pass away. Other events that may trigger the inward contemplation are retirement, the frailty and loss of their spouses, friends, and peers.

SST and disengagement theory provide two explanations of why older adults' social networks shrink. SST is the decision to focus on reciprocal or beneficial social relationships, and knowingly disconnect from relationships that do not fit within their constraints. In disengagement theory, the loss of social connections is a consequence of the inner conflict that arises as the older adult comes to terms with their eventual demise. Although presented here as two separate explanations, both the focus on specific relationships and the inward contemplation may co-exist within the older adult at the same time.

Interestingly, both socioemotional selectivity theory (SST) and disengagement theory suggest that changes to lifestyle and personality lead to reduction in social networks that seems to hold true, even for socially active people (Cumming & Henry, 1961; Steinberg et al., 2011). Older adults become more aware of the limited time they have left, and therefore, focus more on the relationships they consider most important to them (Carstensen, 2006; Lang & Carstensen, 2002) rather than maintaining a larger number of connections (English &

Carstensen, 2014). Studies support this natural reduction, showing that older adults' social networks become smaller (Barnes et al., 2004; Conway et al., 2013). Both theories help explain why older adults appear to be less social, even when previously having extensive social networks.

Whilst the social pruning process appears to be an inevitable process for the older adult, one of the consequences of these shrinking social networks is loneliness. Regardless of whether by choice or not, the reduction in social connections has made older adults lonely. In fact, one study by Lee et al. (2018) that investigated loneliness across adulthood (27–101 years) found that older adults (65+ years) were lonelier than the rest of the younger population. Additionally, studies have estimated that up to half of older adults are lonely (Cohen-Mansfield et al., 2016; Pinguart & Sörensen, 2001). Loneliness has been associated poorer physical (Ansari et al., 2021; Schrempft et al., 2019; Shankar et al., 2017; Verver et al., 2019) and mental health (Ahadi & Hassani, 2021; Brush et al., 2022; Garabrant & Liu, 2021; Grover et al., 2018). In the next section, loneliness is explained, and the impact of loneliness is discussed.

### **Loneliness**

Loneliness is a negative outcome of the social pruning process, where loss of social connections is either through the selective culling of social relationships or by inward contemplation whereby social relationships are neglected. This section will discuss the prevalence and experience of loneliness, the definition of loneliness, and the socio-demographic, social, and neighbourhood factors associated with loneliness.

### ***Prevalence and Experience of Loneliness***

Before describing what loneliness is, it is important to understand how frequently loneliness occurs among older adults, particularly in comparison to the rest of the population.

Additionally, the experience of loneliness is described to reiterate the importance of this phenomenon. As mentioned in the previous section, estimates of the prevalence of loneliness among older adults varies widely from 5%–50% (Cohen-Mansfield et al., 2016; Pinquart & Sörensen, 2001). One of the main reasons for this wide range is likely due to the level of comfort older adults sampled experienced in reporting their loneliness. Negative connotations associated with reporting feelings of loneliness suggests that the likely true prevalence is towards the higher end of 50%, if not higher (Cohen-Mansfield et al., 2016; Pinquart & Sörensen, 2001). In a lifespan study, Lee et al. (2018) found that older adults are one of the loneliest age groups. Among older adults, loss of friends and intimate partners due to illness and death is more prevalent than at other age groups. Kim and Clarke (2015) findings indicate that distress relating to loneliness may be more prevalent at the younger end of the older adult spectrum (55–64 years) when they are likely to be experiencing more transitions in social relationships, primarily through retirement. They also suggest that older adults may not need as many social interactions and relationships as younger adults. This may be in line with their expectations about losing friends as they pass away, loss of their physical and mental health, and reduced social participation.

Weiss (1974) states that “the aged live increasingly with the experience that retirement and infirmity and depletion of energy lead to loss of friends” (p.78), suggesting that the considerable number of changes that occur at the beginning of retirement age creates more situations where an individual is likely to experience loneliness. Retirement alludes to a loss of colleagues and workplace relationships, along with loss of life purpose. The change from being a part of the workforce and contributing to society, to no longer participating in that way makes retirement one of the major life events that people endure. What makes retirement such a trying time in an older adult’s life, is that it signals the start of the inevitable decline in health that will lead to eventual death. Additionally, bereavement of a spouse

creates more than just loneliness; the individual left behind must also learn to navigate life as a single person, which will change the nature of existing connections in their social networks. Weiss (1974) suggests that community groups specifically targeted at recently bereaved individuals are beneficial in creating new relationships among others that understand the recent loss and feelings of loneliness. It is not only the mere presence of an intimate relationship that is critical, it is the quality of the relationship that protects against loneliness (Weiss, 1974). For example, a non-supportive partner will not protect against loneliness. Furthermore, poor health also contributes to feelings of loneliness, with physical limitations preventing the older adult from attending social activities. Older adults with physical limitations who are still living in their own home are particularly vulnerable to feelings of loneliness (Burholt & Scharf, 2014; Jessen et al., 2018; Rico-Urbe et al., 2016; Schrepft et al., 2019; Shankar et al., 2017), as their capacity to venture the distance to social activities is reduced.

Retirement is the critical turning point for older adults. For some, they might lose not only working relationships, but also their purpose in life. As they continue to age, they begin to lose friends and spouses through natural death. Furthermore, the older adult's body begins to fail, and the development of chronic health conditions is almost inevitable. Adjusting to these losses and navigating a new life as a retired person can make the older adult feel very lonely. The experience of feeling lonely has been described as "being homeless in life" (Hemberg et al., 2019, p. 450), occurring through losses in health, loved ones, and social activity. Participants describe the association of being older and becoming frail with being vulnerable and unsafe and not able to participate in social activities. Physical limitations are met with vulnerability and reliance on others, and a loss of dignity (Hemberg et al., 2019) especially when help is needed for basic daily activities, for example, showering. The

experience of loneliness is also associated with anxiety about whether to expect to feel lonely for the rest of life.

Loneliness is the result of social pruning, which begins in older adulthood, usually with the advent of retirement. The prevalence of loneliness among older adults around the world is high, and the experience of feeling lonely is extremely unpleasant and has been connected to poorer health outcomes. In the following section, loneliness is defined for the purposes of the current study, with particular focus on social loneliness and emotional loneliness.

### ***Definition of Loneliness***

Loneliness was first conceptualised by Perlman and Peplau as a negative experience due to a gap in a person's social network (Peplau & Perlman, 1982). de Jong-Gierveld (1987) defines loneliness as “a situation experienced by the participant as one where there is an unpleasant or inadmissible lack of (the quality of) certain social relationships” (p. 120). Both definitions emphasise the emotional experience of the individual, not just the missing social connections. This formulation of loneliness led to the development and widespread use of the de Jong Gierveld loneliness scale to measure loneliness (de Jong Gierveld & van Tilburg, 2006).

There has been some debate in the literature about the precise definition of loneliness. Loneliness has similarities to being or living alone, social isolation, and depression; however, loneliness also has important differences to being or living alone, social isolation, and depression (McHugh Power et al., 2020; Perissinotto et al., 2019; Townsend, 1973; Weiss, 1974; Wenger et al., 1996). Although the terms loneliness and social isolation are sometimes interchangeable in the literature, the consensus appears to be that social isolation is only the lack of connections to family and friends, and loneliness is the “unwelcome *feeling* of lack or

loss of companionship” (Townsend, 1973, p. 175). Thus, social isolation and loneliness are similar as the lack of relationships occurs in both. Loneliness differs from social isolation in one crucial way in that it addresses the emotional consequences of those missing connections, whereas social isolation does not take emotion into account. Social isolation occurs when an individual does not have contact with others (Wenger et al., 1996), either through choice of their own or neglect by those who know them. Thus, social isolation only measures the objective number of social relationships. However, simply having few connections with other people does not necessarily mean individuals feel distressed (lonely) or that they are socially lacking. Not all individuals who live alone or who do not have a cohabiting partner feel unhappy with their social lives. This makes social isolation an inaccurate measure of social well-being. Loneliness on the other hand, emerges when an individual feels distressed at the discrepancy between their current social network and their desired social network (Perissinotto et al., 2019; Townsend, 1973; Weiss, 1974; Wenger et al., 1996). This experience of distress not only accounts for the social isolation situation (few connections equals problem) but also considers two opposing situations. First, for individuals with few social connections but are content with the level of socialisation they have, may simply prefer their own company and the company of the few close relationships they participate in. Second, for those who have many contacts but still feel distressed about their social situation, they may lack a deeper connection with a significant other and feel lonely despite their wide social circle. Therefore, loneliness is the more nuanced and robust measure as it accounts for the individual’s emotional experience of their social relationships.

Loneliness also differs from depression. Both situations include feelings of distress and a lack of social connection. However, depression involves a lack of desire to be social whereas the distress involved in lonely individuals is due to the desire for more social contact (Weiss, 1974). The distinction here is that those who are lonely feel distressed because they

crave more social connections, whilst depressed individuals withdraw socially, and although the depressed person may have few social connections, they do not feel the need for more social interactions (McHugh Power et al., 2020; Tomás et al., 2019; Weiss, 1974). Although an individual can both be lonely and depressed, depression measures cannot accurately capture loneliness. Nevertheless, depression is a much broader mental disorder than loneliness, and will not be discussed in any depth here. It is important to understand the distinction between depression and loneliness as the two problems can be comorbid but are conceptually different.

Now that loneliness as an overall concept has been defined and distinguished from other similar concepts, the two types of loneliness must be discussed. The two components of loneliness are social loneliness and emotional loneliness (de Jong-Gierveld, 1987; Weiss, 1982). Both social loneliness and emotional loneliness involve feelings of distress at the lack of social connection, social loneliness focuses on the broader network and emotional loneliness is specific to a particular close relationship.

### ***Social Loneliness***

As defined above, social isolation is simply the objective lack of social connections (de Jong-Gierveld & Kamphuis, 1982; Weiss, 1974). This is easily determined by the size of a person's social network, totalling the number of relationships the person has (Kim & Clarke, 2015). Logically, the fewer social connections a person has, the lonelier they are. However, social isolation fails to account for people who have few social connections but are content with their level of socialisation. Additionally, it fails to account for people with large social networks but feel lonely.

Whilst social loneliness is also centred around social networks, it relates more to how a person feels about their level of social engagement (Newall & Menec, 2019; Townsend,

1973; Weiss, 1974). Consequently, social loneliness encompasses the feeling of missing connections in the wider social network (de Jong Gierveld & van Tilburg, 2006). Weiss (1974) states that social loneliness is where the individual's social network is smaller than desired. For example, a couple who have recently moved to a new area may experience social loneliness, as they miss their old friends and neighbours, until they get to know their neighbours and develop new friendships to replace the lost relationships.

### ***Emotional loneliness***

Whilst social loneliness is related to wider social networks, emotional loneliness is focused on the closest connections with the strongest emotional ties: an intimate partner or a close emotional relationship (e.g., best friend). It is the absence of one of these emotional connections that causes the individual to become emotionally lonely (de Jong Gierveld & van Tilburg, 2006; Weiss, 1974). For example, Wiles et al. (2009) describe how an elderly man who is an active participant in his community, attending various classes and engaging in other social activities, still felt lonely due to spousal bereavement. Although the wider social networks are sufficient, the individual may still experience feelings of emptiness and abandonment and, therefore, emotional loneliness (Weiss, 1974).

It is critical to distinguish between social and emotional loneliness, to gain a deeper understanding of the complex concept of loneliness. However, social loneliness and emotional loneliness are not mutually exclusive. Although there will be circumstances where either social loneliness or emotional loneliness will be present, in some instances, a person may be both socially and emotionally lonely. The current study will investigate loneliness in older adults, with analyses including total or overall loneliness, social loneliness, and emotional loneliness. In this way, the effect of various circumstances on the types of loneliness can be determined. Now that loneliness, social loneliness, and emotional loneliness

have been defined, it is time to turn to the loneliness model used in the current study to connect loneliness to socio-demographic, social, and neighbourhood aspects.

### *Loneliness Model*

The experience of loneliness is a holistic one, affecting multiple areas in older adults' lives. Not only are there losses in older adults' social networks, but also in their health and social participation. Therefore, the factors related to loneliness also need to be considered from an integrated approach. Drawing on Bronfenbrenner's ecological model, Kemperman et al. (2019) provide a conceptual model that includes socio-demographic factors (e.g., age, gender, health, marital status) and social factors, such as, social networks, mobility, (e.g., access to public transport), social participation (e.g. volunteering) and the living environment (e.g., housing, neighbourhood attachment, and social cohesion). Figure 1 depicts a simplified version of Kemperman et al's (2019) model, representing a variety of factors included in the current study.

The model depicts four main areas that are thought to exert an effect on the experience of loneliness. The purpose of the current study is to investigate whether social factors are associated with loneliness. Previous research to date has been concentrated on the differences in loneliness for gender, health, and marital status; therefore, these factors have been included in the current study to show they are an important part of the complex experience of loneliness. The social and neighbourhood factors - housing and neighbourhood satisfaction, social participation, and neighbourhood cohesion, have been listed individually in the model to demonstrate that the focus needs to shift to a more holistic view of loneliness, with socio-demographic factors only representing one aspect.

### **Loneliness and Socio–demographic Variables**

Whilst loneliness affects people of all ages, older people are more likely to be lonely due to reduced physical capacity and loss of contacts through retirement and bereavement of spouses and friends (Cohen-Mansfield et al., 2016; Wiles et al., 2009). There are mixed findings of the impact of age on loneliness. This is likely due to majority of studies focusing on older adults as a singular, homogenous group. Studies suggest that loneliness across the lifespan is greater at middle-age, 50s (Jessen et al., 2018; Lee et al., 2018) and then again at oldest old, 85+, with less loneliness for those older adults between 60 and 80 years old (Lee et al., 2018). This pattern of findings follows along the lines of the age of retirement or the start of reduced working capacity, which generally occurs around middle-age (50–60 years) and represents the biggest transition into older adult life and the largest reduction in everyday social interactions. The above studies suggest there is a period of stabilisation as older adults adjust to their new life circumstances, which is then followed by the loneliest group, the oldest-old, who are most likely to have lost connections through bereavement of their spouse and friends, and have the poorest physical health, limiting their ability to socialise.

Older people are more lonely than younger people and have a unique set of life circumstances that warrant further investigation. Some of the factors influencing frequency and experience of loneliness are gender, marital status, and health. The impact of gender on older adults' experience of loneliness teases out the difference between social and emotional loneliness. The discussions of loneliness in terms of health and marital status provide hope in terms of the resilience of older people, and gives suggestions for treating loneliness, not just for single or widowed older adults, but for all older adults and the general population, through the inclusion of older adults in the community.

### *Gender*

Generally, older women are lonelier than older men (Dahlberg et al., 2015; Montero-López Lena et al., 2019; Nicolaisen & Thorsen, 2014; Olawa et al., 2019; Thurston & Kubzansky, 2009; Victor et al., 2006). Interestingly, one study not only compared loneliness between women and men, but also between categories of men and women. Whilst Srivastava et al. (2021) found that women were more lonely than men, they also found that women who were household heads were lonelier than men who were the head of their household, women who were not married or in a relationship were lonelier than men who were not married or in a relationship, women who were less socially active were lonelier than men who were less socially active. Additionally, women who had previously been employed and were retired were not only lonelier than women who had never had employment, but also lonelier than men who were retired. Although only a single study, these matched comparisons of loneliness between men and women provide further insight into the general consensus of older women being lonelier than older men (Srivastava et al., 2021).

There are several reasons why older women's loneliness is being captured by these studies. Olawa et al. (2019) suggests that this is because women tend to live longer than men and that age and widowhood explains this difference. Other explanations relate to the social expectations of men and women and their roles in society, with women having wider social circles and more investment in developing and maintaining social connections (Antonucci et al., 2004; Dykstra & Fokkema, 2007; Liebler & Sandefur, 2002; Santini et al., 2016; Schwartz & Litwin, 2018). Role changes at retirement may therefore be more devastating for women, where the loss of social interactions is felt more strongly. The finding that women who had previously been in employment were lonelier than women who had never worked outside the home (Srivastava et al., 2021) provides support for this claim. Additionally, it is more socially acceptable for a woman to openly express her feelings of being lonely (Cohen-

Mansfield et al., 2016; Pinquart, 2003). This last explanation implies that due to under-reporting of loneliness by men, it only looks like women lonelier than men, when the true findings may mean the genders are more equal or men are lonelier. One way to combat the under-reporting by men could be to use a repeated measures survey. Compernelle et al. (2021) asked participants to record if they felt lonely in real time via a brief survey sent to their mobile phones, multiple times a day for a week (repeated several times, months apart). Their findings indicated that men were lonelier than women. The repeated measures method contrasts with the usual single survey response that most studies have used. Not only can responses be compared across the day and week, but also the repeated exposure to the question of feeling lonely may have enabled men to feel more comfortable in providing a more accurate response.

In addition to the Compernelle et al. (2021) study conducted in the United States, a few studies that have also found that older men are lonelier than older women (Ko et al., 2019; van den Broek, 2017). These results are mostly limited to Asian populations, where it is possible that cultural expectations of social roles may explain this discrepancy. Another study where cultural influences likely skewed the results, was the single study that found that older men and women were equally lonely (Gul et al., 2018a). Gul et al. (2018a) state that in Pakistani culture, both men and women are equally isolated and support is not provided for either gender. These studies represent important findings in that cultural and societal norms may mediate the prevalence of loneliness between older men and women.

Even in some studies where women were found to be lonelier, this only persisted until other factors were controlled for, such as marital status, age, and living arrangements (Dahlberg et al., 2015; Drennan et al., 2008; Olawa et al., 2019; Savikko et al., 2005; Victor et al., 2006). These findings suggest that the experience of loneliness is complex with many

correlates, such as widowhood and social support. Rubio et al. (2016) found men to be more self-critical, whilst women tend to express their emotions more. The large number of studies suggesting that older women are lonelier may be due to women feeling more comfortable disclosing their loneliness than men. Borys and Perlman (1985) found that more complex loneliness scales, such as the UCLA loneliness scale, are more likely to capture men's loneliness than a single direct question about feeling lonely. Similarly, de Jong Gierveld (1998) developed a scale that measures loneliness without using the word "loneliness", thereby reducing the stigma associated with reporting loneliness (Borys & Perlman, 1985). The UCLA loneliness scale and the de Jong Gierveld loneliness scale both ask about particular social situations that the individual may or may not be happy with. These more indirect questions make it easier for individuals to respond truthfully according to their situation.

The relationship between gender and loneliness has been discussed, with older women more likely to report feeling lonely than older men. In the next section, the relationship between health and loneliness is discussed. Health is an important topic to cover, as all older adults experience declines in their health, physical activity, and mental acuity.

### ***Health***

This section covers the relationship between loneliness and health. Physical health and mental health are discussed separately, followed by a discussion of frailty. Frailty is a holistic view of older adults' health, including physical, mental, and social components.

Overwhelmingly, poorer health is associated with greater loneliness (Ansari et al., 2021; Asadollahi et al., 2022; Canjuga et al., 2018; Jessen et al., 2018; Lee et al., 2018; van den Broek, 2017; Verver et al., 2019). Given that loneliness in older adults often begins when experiencing big life changes, for example, retirement, it is important to consider the impact

of loneliness on physical health in middle aged adults (50+ years) as well as older adults (65+ years) to develop policies and interventions to identify those at risk of becoming lonely and to alleviate loneliness. Jessen et al. (2018) identified lonely middle-aged adults as being most at risk of poorer health outcomes than lonely older adults.

Older adults with no limiting physical limitations are less lonely than older adults who have physical conditions limiting their mobility (Schrempft et al., 2019; Shankar et al., 2017). Similarly, older adults who are more physically active are less lonely than those who are more sedentary (Schrempft et al., 2019). Both self-report measures (Canjuga et al., 2018; Jessen et al., 2018; Rico-Uribe et al., 2016; van den Broek, 2017; Verver et al., 2019) and objective measurements (Schrempft et al., 2019; Shankar et al., 2017) of physical health indicate that poorer health and mobility are associated with loneliness. Additionally, among those with chronic health conditions like Fibromyalgia, daily pain is associated with loneliness (Wolf & Davis, 2014). Older adults with multiple chronic health conditions are lonelier than older adults without those conditions (Ansari et al., 2021).

Significantly, some studies investigated the effects of social isolation and loneliness on physical health. Although social isolation was not associated with poorer health, loneliness was associated with poorer health, indicating that it is not merely the absence of social contact (social isolation), but the emotional association with deficiencies in the social network (loneliness) that interacts with health (Holwerda et al., 2014; Rico-Uribe et al., 2016; Shankar et al., 2017). Additionally, a recent study has shown that loneliness and social isolation work cumulatively resulting in poorer health outcomes (Barnes et al., 2021). These effects reiterate that social isolation and loneliness are related but different concepts. Loneliness appears to have wider-reaching consequences than social isolation.

Loneliness is also associated with mental illness, particularly depression (Adams et al., 2004; Ahadi & Hassani, 2021; Brush et al., 2022; Garabrant & Liu, 2021; Grover et al., 2018; Jaremka et al., 2013; Liu et al., 2016; Tomás et al., 2019; Young, 1982) and anxiety (Grover et al., 2018). Specifically, depression is related to emotional loneliness (Peerenboom et al., 2015), whereby there is distress related to a missing close connection. Adams et al. (2004) suggests that depression and loneliness overlap due to similarities in presentation, particularly if the older adult has been bereaved or has had a lack of social interactions. Interestingly, depression, but not loneliness, was connected to older age, increased number of health problems, and less social participation (Adams et al., 2004). Depression may therefore be a more severe ailment, with wider-reaching consequences. In some cases, depression may develop due to unresolved loneliness (Grover et al., 2018), thereby early interventions to address loneliness could protect the older adult from developing depression (Liu et al., 2016). Brush et al. (2022) found that social support was protective against depression. Although depressed individuals do not usually crave social interactions, they may still require some level of socialisation. Providing social support to depressed individuals may help with both depression and loneliness. In addition to depression, dementia may also be a consequence of unresolved loneliness. Holwerda et al. (2014) found that feelings of loneliness often precede the onset of dementia, indicating that identifying and treating lonely older adults is critical in the prevention of dementia.

There is a correlation between frailty and loneliness. Verver et al. (2019) found that older adults who had frailty scores on physical, psychological, and social dimensions were the loneliest, followed by those who were frail on psychological and social dimensions of frailty but not physical frailty. Additionally, those who were psychologically and socially frail were less likely to have children or grandchildren, indicating the importance of the wider family network in the health of older adults. Similarly, Canjuga et al. (2018) found that older

adults who were less capable of caring for themselves physically, psychologically, emotionally, and spiritually were lonelier regardless of whether they were living independently or in rest homes. Sadly, older adults who still live in their own homes are considered to be more capable of caring for themselves than those in rest homes, and therefore receive less care and socialisation. Interestingly, health and loneliness interact with gender. A recent longitudinal study found that loneliness predicted poorer mental health in both women and men, and poorer physical health in women at follow up three years later (Boehlen et al., 2022). Loneliness is therefore an important ailment that requires early treatment to help prolong the physical and mental health of older adults.

### *Marital Status*

The final socio–demographic variable to be discussed is the relationship between marital status and loneliness. Surprisingly, very few studies compare loneliness between older adults with different marital statuses. Instead, most studies investigating marital status and loneliness have focussed on either how bereaved older adults cope with the loss of their partner, or on the effects of marriage quality on loneliness. All results appear to suggest looking beyond the marriage dyad to family, friends, and neighbour relationships for social support, highlighting the importance of multiple types of relationships to promote social well–being.

Overall, unmarried older adults are lonelier than those who are married (van Tilburg & Suanet, 2019; Warner et al., 2018). This is nuanced depending on how marital status is broken down. Married older adults appear to be the most protected against loneliness (Pinquart, 2003), although older adults who are cohabiting with a partner (but are not married) have similar rates of loneliness to those who are married (van Tilburg & Suanet,

2019). Thus, having a positive intimate relationship, whether married or cohabiting, is beneficial for older adults and protective against loneliness.

As would be expected, those who have been widowed are more likely to be lonely (Pinquart, 2003; Szabó et al., 2019; Yang & Gu, 2021). As described earlier, emotional loneliness arises when there is a lack of an intimate relationship with another person (de Jong Gierveld & van Tilburg, 2006). Understandably, older adults who are single or widowed would therefore be more susceptible to emotional loneliness than older adults who have a partner. Szabó et al. (2019) found that, specifically, emotional loneliness increased after spousal bereavement, but social loneliness did not increase, and often decreased immediately after bereavement. They state that this could be due to relatives and friends tend to make a concerted effort to increase contact with the widowed older adult, reinforcing the person's social networks. Similarly, another study found that widowed older adults with larger social networks had the highest emotional functioning, even compared to married older adults (van Tilburg & Suanet, 2019). This suggests that spousal bereavement increases social resilience and widowed older adults develop a greater ability to form new relationships. However, this may not always be the case. A recent study cautions that whilst loneliness decreases over time for older adults that have been widowed, the loneliness caused by bereavement can linger (Yang & Gu, 2021). Consistent with the idea that close relationships protect against loneliness, older adults who have been widowed and then remarried were much less lonely than widowed older adults who never remarried (Yang & Gu, 2021).

In light of these mixed findings, it is important that all older adults —regardless of their marital status — have a variety of social connections. Pinquart (2003) found that married older adults tended to have a greater reliance on their partner in fulfilling all their social needs. Married older adults were found to have smaller social networks and less

contact with siblings, friends, and even neighbours. On the other hand, divorced and widowed older adults tended to have larger social networks, with more frequent contact, and more satisfactory relationships with siblings, friends, and neighbours (Pinquart, 2003). Ayalon et al. (2013) suggest that having positive and fulfilling relationships outside of marriage is beneficial for the older adult and their partner. For example, sibling relationships are protective against loneliness (Stocker et al., 2020).

Support systems have been overly focused on familial relationships, with more casual connections overlooked (Cantor, 1979). These findings indicate the importance of wider social networks, beyond close relationships with partners, friends, and family. In the absence of a supportive partner, the role of the neighbourhood and mutual exchanges between neighbours could help alleviate feelings of loneliness.

### ***Summary of Socio–demographic Factors***

Overall, older women tend to be lonelier than older men, having physical health issues is associated with loneliness, and single older adults are lonelier than those who have an intimate partner. Poor health has the most consistent link with loneliness, with a few studies even demonstrating that loneliness precedes the onset of health issues (Holwerda et al., 2014; Shankar et al., 2017). Although single older adults were generally lonelier than married older adults, having social connections outside of a significant partner by extending social circles to include family, friends, neighbours, and engagement in social activities is protective against loneliness (Ayalon et al., 2013; Szabó et al., 2019; van Tilburg & Suanet, 2019).

### **Loneliness and Social Participation**

Most of the literature around loneliness has centred on the individual factors, for example, gender, health, and marital status, and their influence on feelings of loneliness.

Whilst these are important in understanding the experience of loneliness, there is not much in the way of interventions that can be done to help people to feel less lonely based on these factors. Therefore, the current study has endeavoured to step outside of the singular focus on the individual and look to other potential influences of loneliness. In the next sections, social participation is discussed, with two forms of social participation elaborated on — volunteering and belonging to social groups.

Taylor et al. (2018) suggest that subjective isolation from friends is highly damaging for mental health. Simply having many friends is not protective against loneliness. Chosen social relationships rather than familial networks are crucial for mental well-being, with social networks needing to extend beyond familial relationships, particularly for those with few family members (Cantor, 1979). Another source of expanding social networks is to turn to social participation. For the purposes of the current study, social participation is limited to volunteering and social group membership. There may be other circumstances where the older adult has an extended social network outside of these activities. Older adults have the freedom to choose to volunteer in their community or to belong to a social group. Capitalising on volunteerism and community participation may increase the number of chosen relationships to increase mental well-being among older adults.

### ***Volunteering***

Volunteering is a selfless task whereby a person freely donates their time and/or resources to others. For older adults, volunteering is a way of capitalising on their knowledge and skills and creating a sense of usefulness in society (Lee, 2021; Sundström et al., 2021). Volunteering has been connected with better physical and mental health (Kim et al., 2020). Additionally, volunteering is associated with happiness (Dulin et al., 2012). Dulin et al. (2012) suggest that the relationship between volunteering and happiness is universal for all

cultures. Volunteer work, particularly activities involving older adults sharing knowledge with youth and charity work, was linked to lower levels of loneliness in older adults in the United States (Kim et al., 2020; Lee, 2021). In New Zealand older adults, providing non-kin childcare was associated with reduced levels of social loneliness (Szabó et al., 2021).

Older adults with low economic living standards volunteered more than those with a high standard of living (Dulin et al., 2012). Interestingly, volunteering was associated with reduced loneliness in widowed older adults (Carr et al., 2018). Therefore, volunteering provides a purpose and socialisation that helps alleviate gaps in the older adult's social network.

### ***Belonging to Groups***

In addition to volunteering, belonging to social groups (e.g., sports clubs, church) may also reduce loneliness in older adults. Groups enable older adults to participate in activities they enjoy as well as to socialise with other people in their community. Siette et al. (2021) found that older women were more likely to be actively involved in their community than older men and suggest that communities have social groups that would appeal to men. Attending social venues such as pubs and churches (Buz et al., 2014; Cox et al., 1988) are beneficial to maintaining the older adult's social network, not only in terms of the extent of the network but also the frequency of social interactions. Older adults who participate in their community by going to church (Cox et al., 1988) or through other community groups (Cohen et al., 2006) are physically and mentally healthier and less lonely. Informal community participation might also be protective against loneliness. Torres (2019) suggests that older adults who live alone may engage in conversations with people they see while out in public venues as their form of social interaction.

Being an active participant in the local community through volunteering and social groups is only possible if the older adult feels attached to their home and neighbourhood. The next section discusses housing and neighbourhood attachment, as well as living alone and length of time living at current residence.

### ***Summary of Loneliness and Social Participation***

Volunteering, social group membership, housing and neighbourhood satisfaction, and social cohesion; may all be protective against loneliness. Older adults who volunteer (Kim et al., 2020) or are members of social groups (Cohen et al., 2006) have improved physical and mental health than older adults who do not participate in their community in this way. Communities are responsible for providing older adults with opportunities and accessibility to social participation activities.

### **Loneliness and Neighbourhood Characteristics**

In addition to social participation, another overlooked area that affects older adults' loneliness is their community and the neighbourhood they reside in. As (Cantor, 1979) suggests, frequent interaction and exchanges with neighbours could provide some of the social interaction and support older adults need. This section discusses two important aspects of the neighbourhood and how they affect loneliness. First, housing and neighbourhood satisfaction will be discussed, followed by a discussion of social cohesion.

### ***Housing and Neighbourhood Satisfaction***

There are three important considerations for housing and neighbourhood satisfaction — living alone, length of time residing at current residence, and attachment to the neighbourhood. The literature has extensively investigated the relationship between living alone and loneliness, however, length of time residing at current residence and attachment to the neighbourhood have not been investigated in relation to loneliness.

The link between living alone and loneliness has been well established (de Jong Gierveld et al., 2012; Evans et al., 2019; Havens et al., 2004; Ng & Northcott, 2015). Specifically, emotional loneliness has been associated with living arrangements (Ho et al., 2021), indicating that it may be the absence of a close connection to another person that is lacking in those who live alone, as it is unlikely that the older adult is married. Additionally, living with others provides frequent opportunities for social interactions without the older adult having to leave the house, reducing the likelihood of the older adult feeling lonely (Cohen-Mansfield et al., 2016). A recent study found that living arrangements moderated the relationship between hearing loss and loneliness in older adults (Jiang et al., 2021), indicating that older adults with health problems may benefit from having companionship at home. Whilst living with others provides one protective factor against loneliness, there are other housing factors that have been overlooked, such as, length of time residing at current home, and attachment to the home and neighbourhood.

One factor that has not previously been considered is the length of time the older adult has been living at their current residence. Older adults who have lived at the same residence for many years would be more familiar with the neighbourhood, and consequently, feel more comfortable in that area. Windsor et al. (2021) found that older Australians who had been living in their home the longest were more connected and satisfied with their homes and neighbourhoods. Whilst many older adults may continue to live in the same house for many years, other older adults are having to move from their long-term home and neighbourhood to downsize to a smaller house or even to a rental property as they are no longer able to either look after or afford the house they have been previously living in (Tomaszewski, 2013). Although moving house can be a difficult process, Tomaszewski (2013) found that this was generally a proactive measure for older adults, and that finding a more suitable home increased overall health measures. However, older adults who have recently moved will be

less familiar with their new neighbourhood and be less comfortable with asking their neighbours for help when needed.

Attachment to one's home, neighbourhood, and community is embedded in a person's identity (Rubinstein & Parmelee, 1992). Due to older adults having a wealth of experiences, it therefore makes sense that they would feel more attached to their location (Rubinstein & Parmelee, 1992). In New Zealand, older adults have strong connections to where they live (Wiles et al., 2009), and having a strong attachment to the neighbourhood is protective against loneliness (Kemperman et al., 2019). Memories and meaning are attached to their sense of place, with strong ties to a place they have lived in for a long time (Wiles et al., 2009). Older adults tend to create spaces in their homes through which they are able to observe the environment around them and neighbourhood activity (Wiles et al., 2009). It appears that while older adults tend to reduce the number of social relationships they must maintain, they still crave some social connections. By becoming more of an observer than participant, they can maintain some sense of their social identity. Logically, length of time living at current residence is directly related to attachment to the neighbourhood (Windsor et al., 2021). For example, the older adult who had a strong connection to their home and neighbourhood would feel more comfortable asking for help and would be more likely to have larger social networks than those who have a weak connection. Neighbourhood attachment is also positively correlated to feelings of safety and perception of available amenities, with feelings of safety being correlated with social networks (Kemperman et al., 2019). Older adults who feel safe in their neighbourhood are more likely to make connections with their neighbours and participate in their community through volunteerism and other activities. These small and casual interactions are protective against loneliness (Weijs-Perrée et al., 2015).

Another contributing factor to neighbourhood attachment is the availability and accessibility to amenities, such as supermarkets, healthcare, and public transport. The ability to be able to independently carry out everyday tasks, such as collecting groceries, positively influences quality of life (Kolodinsky et al., 2013) and health (Kemperman et al., 2019). Barriers to independence due to poor physical health reduce accessibility to amenities, thus, resulting in lower satisfaction of neighbourhood amenities (Kemperman et al., 2019). If older adults are unable to access the resources in their neighbourhood, they will feel less attached to their communities. Living in a rural area can add further barriers for older adults to get the things they need as there are fewer amenities in these areas.

An important aspect of neighbourhood attachment could be related to location. Although majority of New Zealand's population lives in urban areas, there are still 676,747 people living in rural areas (Macrotrends, 2022), 13.2% of New Zealand's total population. A review by Cohen-Mansfield et al. (2016) found that older adults in rural areas appear to be more susceptible to loneliness. There are fewer people and more distance between people in rural areas, reducing the number of potential social opportunities for older adults living in these areas. Savikko et al. (2005) explain that there is the added component of younger people leaving rural areas and moving to urban areas to pursue careers. In New Zealand, there is a high turnover of residents, especially with reduced home ownership and a greater number of rental properties (Wiles et al., 2009). This turnover prevents the formation of close communities as the neighbours are unfamiliar to the older adult. It can therefore be difficult to create a sense of community and reliance on neighbours when there are few young people around.

### ***Social Cohesion***

In addition to housing and neighbourhood attachment, social cohesion is also critical for older adults' accessibility to their neighbourhoods and communities. Social cohesion relates to safety, neighbourhood trust, and a sense of belonging among communities (Kawachi et al., 2008).

Poorer neighbourhoods have less social cohesion and more crime due to lack of resources (Cohen-Mansfield et al., 2016). Additionally, limited research has demonstrated that older adults residing in low-income neighbourhoods have poorer health outcomes (Windsor et al., 2021). Unsafe neighbourhoods create barriers for older adults to access resources in their communities as they are vulnerable due to frailty. If communities expect older adults to leave their houses, they need to feel safe and be able to trust that someone would come to their aid should they need help. Higher levels of neighbourhood trust has been associated with positive physical and mental health outcomes, and reduced levels of loneliness (Kemperman et al., 2019; Windsor et al., 2021). Additionally, feelings of safety and trust towards the neighbourhood and community has been connected to increased satisfaction with the older adult's social network (Kemperman et al., 2019). These findings suggest that safer and more trustworthy neighbourhoods provide more opportunities for social interaction, and greater access to resources and amenities.

One important aspect of neighbourhood cohesion is that of social capital. Kawachi and Berkman (2000) define social capital as the resources and support that people can get through their relationships with other people. Cannuscio et al. (2003) state that support from neighbourhood connections is not only beneficial to older adults with many social connections, but critical for an individual with few family and friend relationships. Having a neighbour who is a friend who can provide support has a positive influence on wellbeing

(Cantor, 1979). In a strongly cohesive neighbourhood, an older adult would feel comfortable asking their neighbours for a cup of sugar, for example. Connected neighbourhoods are generally safer and provide opportunities for the older adult to get out of the house (Cannuscio et al., 2003). Social cohesion influences the potential for social interactions (Weijs-Perrée et al., 2015). High neighbourhood cohesion empowers residents to have more social interactions with their neighbours, insomuch as potentially reducing the impacts of loneliness.

### ***Summary of Loneliness and Neighbourhood Characteristics***

Older adults who are attached to their home and neighbourhood are less lonely than those who feel displaced (Kemperman et al., 2019). Living alone reduces the quantity of social interactions, thereby older adults who live alone are lonelier (Evans et al., 2019). Safe neighbourhoods are critical in enabling the older adult to feel supported in their own home (Cannuscio et al., 2003). The innate opportunities for social interactions provided by these social variables could reduce loneliness in older adults.

### **Conclusion**

The older adults' group is becoming a larger proportion of the population in many developed countries around the world, including New Zealand. Ageing is commonly associated with physical and mental decline, which, along with disengagement, contributes to the reduction in social networks. Fewer social connections, combined with the physical decline of ageing can result in social isolation and lead to feelings of loneliness.

Loneliness can be categorised into social loneliness (number of connections and frequency of contact), and emotional loneliness (feelings of being alone), which are distinct but related aspects of loneliness (McHugh Power et al., 2020; Newall & Menec, 2019; Peplau et al., 1982; Perissinotto et al., 2012; Townsend, 1973; Weiss, 1982; Wenger et al., 1996).

## LONELINESS IN OLDER ADULTS

This study seeks to determine not only the overall loneliness of older adults in New Zealand, but whether these two aspects of loneliness can be differentiated in this population. Females tend to discuss their feelings more openly with others, so although there is difficulty in confiding feelings of loneliness, females will be more likely to report being lonely than males. There is also some suggestion that females are more likely to experience emotional loneliness, and males more likely to experience social loneliness, so this will also be investigated in this study to further parse out the concepts of social and emotional loneliness. The literature shows that single and widowed older adults are lonelier than those who are married or in a relationship. It is important to determine if these factors are important determinants of loneliness in older adults in New Zealand.

Social networks, and the reduction of social connections largely contributes to loneliness. Those with larger networks will be less lonely than those with smaller networks. Social network theory emphasises the importance of connections outside of family and friends. Older adults who participate in the community through work, volunteering, or community group memberships and get social support from these social situations, should therefore be less lonely than older adults who do not participate in the community. A preliminary investigation will be undertaken to discover if there is a link between neighbourhood factors and loneliness: length of time living at current residence, and neighbourhood attachment (safety and reliance on neighbours).

### **Hypotheses**

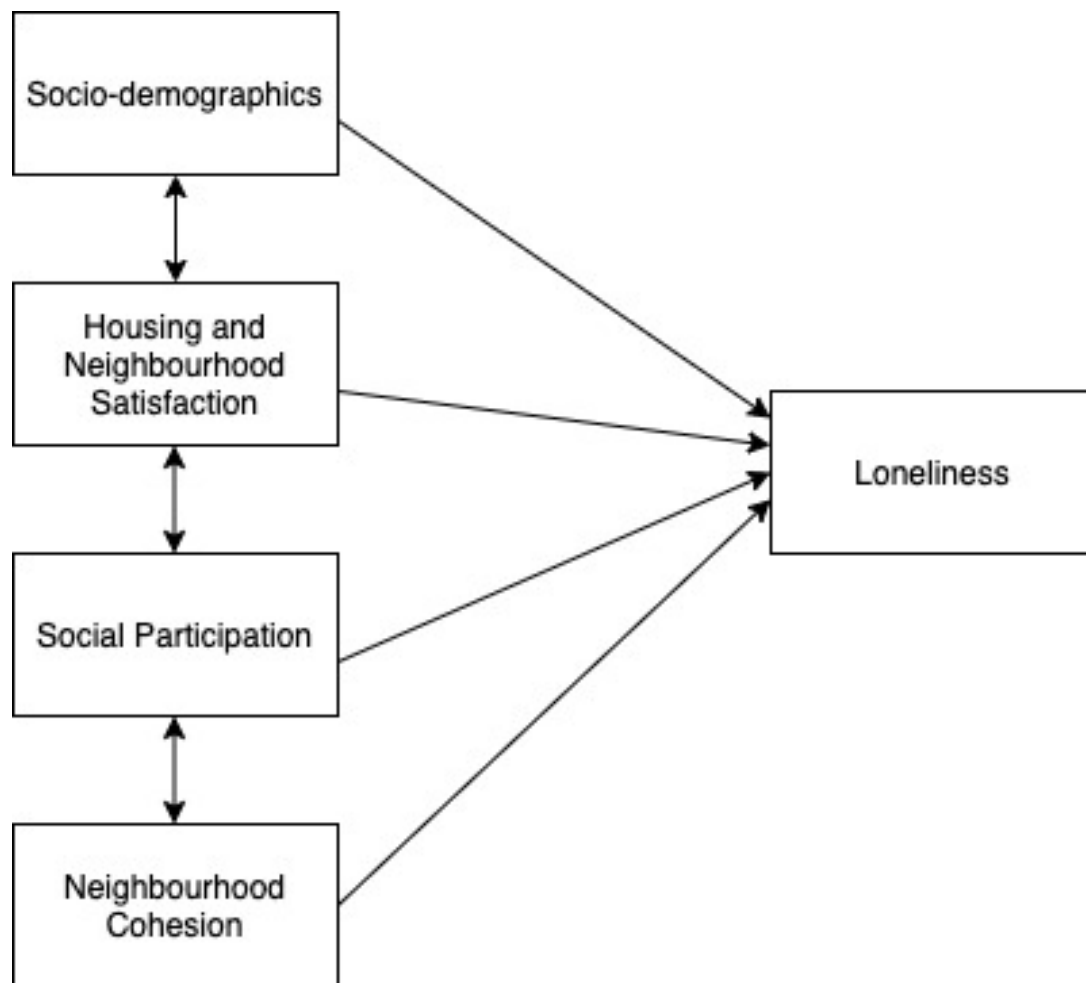
H1. Loneliness will be related to individual variables of gender (women will be lonelier than men), marital status (single older adults will be lonelier than older adults in a relationship or married), living alone (those who live alone will be lonelier), and negatively related to self-reported health.

H2. Loneliness will be negatively related to social engagement. Older adults who volunteer and are members of social groups will be less lonely than older adults who are not volunteers or social group members.

H3. Loneliness will be negatively related to housing and neighbourhood satisfaction. Older adults who indicate higher levels of housing and neighbourhood satisfaction will be less lonely than older adults who indicate they are less satisfied with their housing and neighbourhood.

H4. Loneliness will be negatively related to neighbourhood social cohesion. Length of time living at current residence and social cohesion will be negatively correlated with loneliness. Older adults who live alone will be lonelier than older adults who live with others.

**Figure 1** *A Multi-Dimensional Model of Loneliness*



## **Method**

### **Research Design**

#### ***Pre-existing data***

The current study used secondary survey data from the 2020 wave of the Health, Work, and Retirement Study (HWR). A copy of the survey can be found in Appendix A. The HWR is a longitudinal study conducted by the Health and Ageing Research Team (HART) at Massey University that began in 2006 to investigate health, retirement, and ageing among New Zealand's older adults (Phillips, 2021). Funding for the 2020 HWR study has been provided by the Ministry of Business, Innovation and Employment (MAUXI705) obtained by the HART team (Phillips, 2021). Ethics approval for the 2020 wave of the HWR study was granted by Massey University Human Ethics Committee Southern A (MUHEC) under the protocol Health, Work and Retirement Study SOA 20/07. The current study investigates the relationship between loneliness and individual variables, housing and neighbourhood satisfaction, social cohesion, and social participation.

#### ***Participants***

The sampling procedure for the survey data provided by HART was purposive sampling. The participant cohort was selected randomly from the electoral roll, restricted to older adults 55 years and over (Phillips, 2021). The 2020 sample consists of follow-up from previous iterations of the postal survey ('existing' cohort), as well as recruitment of new ('refresh') cohort of persons born between 30/10/1954 and 29/10/1965 (aged 55-65 in 2020) to the HWR study (Phillips, 2021). Persons with Māori descent were over-sampled to provide enough data for representation in analysis. Participants from the existing cohort were excluded if they were deceased, relocated overseas, withdrawn from the study, had not responded to the survey since 2014 or earlier, or lost to contact (no address, forwarding

details, or phone number) (Phillips, 2021). 4361 older adults returned the 2020 HWR survey, with ten participants excluded due to inconsistencies in demographic data between recorded and received information, resulting in 4351 respondents included in the 2020 HWR dataset (Phillips, 2021).

Participants were 55-92 years old, with a mean age of 66.8 years. Just over half of the sample were female (56.7%), and 3126 (71.8%) were either married or in a de facto relationship. The sample had a high rate of loneliness, just over 40% were lonely. Majority (88%) of the sample reported having one or more chronic health conditions. Length of time at current residence varied widely, from one month to 78 years, with a median of 13.6 years. Nearly half of the sample (47%) volunteered their time. Of those who volunteered, 3.6 hours per week was the average time commitment. Over half of the sample belonged to at least one social group (65.7%), with 1267 participants indicating they belonged to two or more social groups. Older adults in this sample had fairly high standards of living, ELSI mean of 24.9 (range: 0-31) and LSCAPE mean of 22.3 (range: 6-30). Only 15.6% were experiencing hardship, with nearly 60% of the sample having a good standard of living. General rating of quality of life was very high, with a mean of 4.29.

### **Measures**

The current study investigated loneliness as the dependent variable. Independent variables were gender, marital status, living alone, health conditions, SF-12 physical and mental components, ELSI, quality of life, time at residence, housing satisfaction, neighbourhood satisfaction, social cohesion, volunteering, and belonging to groups. Age and ELSI were included in the logistic regression as control variables. Measures are described below and in the survey which is included in Appendix A.

### *Loneliness*

The de Jong Gierveld loneliness measure is a multidimensional scale that was developed to assess the complex concept of loneliness, capturing not only the lack of social connection, but also the emotions experienced by the lonely (De Jong Gierveld & Kamphuis, 1982; de Jong Gierveld & van Tilburg, 2006). The scale has been widely used to investigate loneliness in older adults, both in its original 11-item form (Bosma et al., 2015; Julsing et al., 2016; Verver et al., 2019), and the shortened 6-item form (Gul et al., 2018a; Margelisch et al., 2017; van den Broek, 2017). The 6-item de Jong Gierveld measure was created to reduce response fatigue, particularly in long surveys, and has been assessed as being a valid and reliable measure of loneliness in the wider population (Caballer et al., 2020; de Jong Gierveld & van Tilburg, 2006, 2010; Grygiel et al., 2019), particularly in older adults (Buz & Pérez-Arechaederra, 2014; Caycho-Rodriguez et al., 2021; de Jong Gierveld & van Tilburg, 2006; Jaafar et al., 2019; Penning et al., 2014; Rodríguez-Blázquez et al., 2020; Tomás et al., 2017; Uysal-Bozkir et al., 2017; Victor et al., 2021).

The de Jong Gierveld loneliness measure asks participants to rate their experience using a 3-point scale (with 1 = yes, 2 = more or less, and 3 =no). Participants are asked about their social experiences, for example, there are enough people I feel close to, and their emotional experiences, for example, I often feel rejected. The 6-item scale was scored as outlined by de Jong Gierveld and van Tilburg (2010). To obtain a loneliness score the number of “yes” or “more or less” responses to the three negatively worded items was counted (Emotional Loneliness subscale), and the number of “no” or “more or less” responses to the three positively worded items was counted (Social Loneliness subscale). Scores for the two subscales ranged from zero (not lonely) to three (intensely lonely). A total score of overall loneliness was obtained by summing the two subscale scores, with scores ranging from zero (least lonely) to six (most lonely).

Reliability for the 6-item scale as assessed by Cronbach's alpha was .75, was in accordance with previous reliability estimates: Malaysia —.71 (Jaafar et al., 2019), Netherlands —.85 - .92 (Uysal-Bozkir et al., 2017), Netherlands, England and Wales — alpha's of .70 - .87 (de Jong Gierveld & van Tilburg, 2006; Victor et al., 2021). The two three-item subscales (emotional and social loneliness) have been validated for separate analysis in both younger and older populations across Eastern and Western countries and Japan, with internal reliability estimates ranging from .68 to .95 (de Jong Gierveld & van Tilburg, 2010; Uysal-Bozkir et al., 2017; Victor et al., 2021). In the current study, the emotional loneliness subscale had a lower internal consistency (Cronbach's alpha = .58), than the social loneliness subscale (Cronbach's alpha = .82).

For the purposes of logistic regression, loneliness scores were categorised into two groups (lonely and not lonely). Scores below one and a half were considered "not lonely" and scores from one and a half to three were classified as "lonely".

### ***Age, Gender, Marital Status and Living Alone***

Age of participants was measured as their age in years at the time they completed the survey. Gender was measured as a dichotomous variable (male/female). For marital status, participants were asked to select from five options: married, civil union/de facto/ partnered, divorced/separated, widowed, and single. Based on the categorisations of married and not married in the literature, and with van Tilburg and Suanet (2019) finding that de facto couples were more similar to married than not married, the marital status options from the survey were dichotomised: 1. married or de facto and 2. not married or de facto. Living alone was assessed by response a single question "I live alone".

***Physical and Mental Health***

The 12-item short form health survey (SF-12) was developed from the original SF-36 (Ware Jr et al., 1996). Whilst the SF-36 provided more detailed information on 8 subscales, as well as a physical component summary (PCS) and a mental component summary (MCS), the 12-item self-report measure sufficiently reconstructed the physical and mental health scores without losing any critical information provided by the original 36 items (Frieling et al., 2013; Jenkinson et al., 1997). The shortened SF-12 is easier to administer, reducing the time required by participants to provide their responses (Jenkinson et al., 1997).

The SF-12 asks participants about health and well-being on 8 dimensions — physical functioning, physical role capabilities, bodily pain, general health, vitality, social functioning, mental health and emotional health (Frieling et al., 2013; Gandek et al., 1998; Jenkinson et al., 1997; Lyons et al., 1994; Sanderson & Andrews, 2002; Ware Jr et al., 1996). Participants were asked about their physical health, for example, does your health now limit you in climbing several flights of stairs? With responses ranging from: limited a lot, to not limited at all; and their mental health, for example, how much time during the past four weeks have you felt calm and peaceful? With responses ranging from — all of the time through to none of the time.

The original SF-36 and its eight subscales have been validated with high internal consistency —  $\alpha = .68 - .94$  (Gandek et al., 1998). The SF-12 has been validated for use in multiple countries (Gandek et al., 1998), including Australia (Sanderson & Andrews, 2002), United States (Ware Jr et al., 1996), United Kingdom (Jenkinson et al., 1997). Both the Physical Component Scores (PCS) and Mental Component Scores (MCS) have good test-retest reliability, with PCS estimates of .864 to .890 and MCS estimates of .760 to .774 (Ware Jr et al., 1996). Frieling et al. (2013) developed New Zealand specific population norms and

factor score coefficients for each of the subscales from the New Zealand General Social Survey 2008 and the New Zealand Health Survey 2006-07. Higher scores indicate better physical and mental health. For the current study, the SF-12 had very good internal reliability (Cronbach's alpha = .91), with the SF-12 Physical subscale Cronbach's alpha of .90, and the SF-12 Emotional subscale Cronbach's alpha of .86. The SF-12 Physical component scores had a moderate negative correlation with number of chronic health conditions ( $r = -.44$ ), indicating that those with poorer self-reported health also reported a greater number of chronic health conditions.

### ***Health Conditions***

A general assessment of chronic health conditions was given by a single question: Please indicate whether a health professional has ever told you that you have one of the following conditions (e.g., arthritis, depression). Participants were asked to respond either: no, yes in the last 12 months, or yes prior to the last 12 months. Responses were categorised into 1 = no chronic conditions and 2 = one or more chronic health conditions.

### ***Quality of Life***

The World Health Organisation (WHO) Quality of Life question asks participants to rate their quality of life on a 5-point scale, with response options ranging from very poor through to very good (The WHOQOL Group, 1998). The question provides a general idea of how participants view their health and standard of living in relation to expected outcomes.

### ***Standard of Living***

The Economic Living Standards Index (ELSI) was developed by the Ministry of Social Development in New Zealand to provide a New Zealand-specific standards of living measure (Jensen et al., 2002). The Economic Living Standards Index Short Form (ELSI<sub>SF</sub>) is a shortened version of the 40-item ELSI, a self-report measure that asks participants about

their quality of living in three main ways: ownership of possessions, social participation, and economisation (Jensen et al., 2005). The ELSI<sub>SF</sub> includes 25 items and is able to differentiate those who have a high standard of living; defined as those who have the possessions they want, can socialise and participate in the activities they wish to, and do not have to use cost-cutting measures in their day to day life; from those who have a low standard of living, defined as not being able to have the possessions or being able to partake in social activities as they would like to, and having to save on costs (Jensen et al., 2005).

Participants are asked about their access to possessions (e.g., please indicate whether or not you have (or have access to) a telephone), and the activities they are able to do, for example, keep the main rooms of their home adequately heated. Responses include — yes, I have it; no, I don't want it; no, because of the cost; and no, for some other reason.

Participants are also asked about the activities they do to keep costs down (e.g., gone without or cut back on fresh fruit and vegetables) with responses ranging from not at all to a lot; and they are asked to give an overall assessment of their quality of living (e.g., generally, how satisfied are you with your current material standard of living?) with responses ranging from very satisfied to very dissatisfied.

The ELSI<sub>SF</sub> is scored by summing the totals for each of the items, total scores below 10 are set to 10, then 10 is subtracted from all total scores, giving respondents with the lowest scores a score of 0 (Jensen et al., 2005). Scores ranged from zero to 31, where scores of 16 and below indicating some form of hardship, with lower scores indicating increasing hardship (Jensen et al., 2005). The ELSI<sub>SF</sub> had very good internal reliability with a Cronbach's alpha of .88, equivalent to the original development of the scale, (Jensen et al., 2005), and has been highly correlated with the original 40 item version ( $r = .99$ ). The ELSI<sub>SF</sub> moderately

correlated with the WHO quality of life responses ( $r = .49$ ) to indicate that quality of life is related to material standards of living.

### ***Social Participation***

Social participation as outlined in chapter one, refers to participation in the community through volunteerism and group membership. Volunteering was measured by asking participants two questions: I contribute my time and/or labour to volunteer activities, with responses ranging from very often to never; and how many hours do you contribute to volunteer activities per week, where participants indicated the number of hours they volunteered per week. Responses from “I contribute my time and/or labour to volunteer activities” were grouped into “Yes, I volunteer” and “No, I do not volunteer” i.e., very often, often, and sometimes were classed as “Yes”; and rarely or never were classed as “No”. Social Participation was measured by asking participants if they belong to any organisations (e.g., sports clubs, hobby groups, religious organisation). Participants indicated yes or no to each of eight group options. Participants were split into two groups for analysis, into those who belonged to one or more social groups, and those who indicated they did not belong to any social groups.

### ***Housing Satisfaction***

Participants were asked to provide the number of years and/or months they have resided at their current home. To obtain a total length of time at current residence, the number of months was divided by 12 to give the proportion of years e.g., 6 months is 0.5 years, and then the adjusted months was added to the years. Participants who did not respond to the question were excluded from analysis. One additional participant was excluded as the number of years lived at current residence exceeded their age at the time of survey.

The 8-item housing satisfaction measure was comprised of three items adapted from Oswald et al. (2006) and five items adapted from Heywood et al. (2002). Self-reported satisfaction with housing, rather than objective measures relating to quality of housing better capture the effects of housing on older adults (Heywood et al., 2002). The measure asks participants about their capability to maintain their home and partake in social activities. Participants were asked to rate their agreement, on a 5-point scale, about their satisfaction with their current home, and various aspects of their current home, for example, “my house enables me to see friends and whānau/family as often as I like”. Responses ranged from “no, definitely not” to “yes, definitely”.

Negatively worded items (i.e., “my home does not meet all my needs”, and “my house is difficult for me to clean”) were reverse scored, so that higher scores indicated greater satisfaction. Total scores were derived by summing the scores from individual items. Scores ranged from 8 to 40. The measure had a Cronbach’s alpha of .82, indicating very good internal consistency.

### ***Neighbourhood Satisfaction***

To understand how older adults feel about their current neighbourhood, the HART team developed a neighbourhood satisfaction measure. The Neighbourhood Satisfaction scale is a self-report measure that consists of 8 items that ask participants about accessibility to amenities (e.g., “I can get to the shops easily”), and other neighbourhood qualities (e.g., “The neighbourhood is peaceful”). Participants rated their agreement on a 5-point scale from “no, definitely not”, to “yes, definitely”.

Scores from the individual items were summed to provide a neighbourhood satisfaction score. Scores ranged from eight to 40. The measure had very good internal consistency, with a Cronbach’s alpha of .86, indicating that the items chosen for the measure

were highly related to one another. Neighbourhood satisfaction was also highly related to housing satisfaction ( $r(3989) = .60, p < .001$ ), and moderately related to social cohesion ( $r(4114) = .49, p < .001$ ), suggesting that all three variables have overlapping qualities but still measuring different aspects of the neighbourhood.

### ***Social Cohesion***

Social cohesion was measured by using the trust subscale from Stafford et al. (2003). The social cohesion scale was a self-report measure that consisted of six items that asked participants about the safety of their neighbourhood (e.g., “people would be afraid to walk alone at night”), and the trust they have in their neighbours (e.g., “If you were in trouble, there are lots of people in this area who would help you”). Responses were given on a 5-point scale, from strongly disagree to strongly agree.

Negatively worded items were reverse scored (e.g., “people in this area will take advantage of you”), so that higher scores reflected greater trust. Scores from the individual items were then summed to provide a composite score of social cohesion. Total scores ranged from six to 30. Cronbach’s alpha of .77 was similar to the Stafford et al. (2003) trust subscale, which had an alpha value of .73, reflecting good internal consistency between the items.

### **Procedure**

Data for the current study comes from the HWR 2020 postal survey. The participants comprise of both the existing participants from the longitudinal cohort and new participants recruited for the refresh cohort. The following steps were carried out using guidelines posed by Dillman et al. (2014) for obtaining high response rates from postal surveys. These guidelines include making contact on multiple occasions, an initial thank you gift, and providing return postage (Dillman et al., 2014). First, the 36-page postal survey was sent to

both the existing and refresh cohorts initially on 11<sup>th</sup> June 2020 with introductory letter, information sheet, pen, survey booklet, consent form, and reply-paid return envelope. Next, all participants received a postcard (first reminder) after three weeks, either thanking them for the return of their survey, or asking them to complete the survey if they had not yet done so. A second reminder on 17<sup>th</sup> September 2020, 12 weeks after initial contact, was sent to those who had not yet returned their survey nor contacted the research team regarding reasons for non-return of survey (i.e., lost to contact, deceased, or withdrawn). The second reminder included a final reminder letter, information sheet, survey booklet, consent form, and reply-paid return envelope (Phillips, 2021).

The 2020 HWR survey wave had a high response rate of 53.3% of surveys returned, with 4351 respondents included in the study (Phillips, 2021). The existing cohort returned majority of their surveys within the first four weeks after initial contact, and majority of responses from the refresh cohort were returned after the first reminder was issued.

*Existing cohort.* Completed surveys were returned by 75.4% ( $n = 3840$ ) of the existing cohort ( $n = 4614$ ). Persons of non-Māori descent had an 80.8% ( $n = 2251$ ) response rate, whilst 67.1% ( $n = 1224$ ) of persons with Māori descent responded. Men ( $n = 1510$ , 74.8%) and women ( $n = 1968$ , 76.0%) had similar response rates.

*2020 refresh cohort.* Of the 3552 persons selected from the electoral roll for inclusion in the refresh cohort, 24.5% ( $n = 871$ ) returned a completed survey. Non-Māori had a response rate of 30.4% ( $n = 468/1541$ ) and 20.2% ( $n = 403/2220$ ) of Māori responded. The response rate was slightly lower for men ( $n = 371$ , 22.7%) than for women ( $n = 500$ , 26.3%).

## **Analysis**

### ***Missing Data and Variable Transformations***

Descriptive analysis included means and standard deviations of variables prior to transformations. Listwise deletion was utilised to deal with missing data, given the large sample size. All variables were primarily screened for missing datapoints, inappropriate values, and assumptions for parametric tests (Pallant, 2020). Variables with greater than 5% missing values, but less than 10% missing are listed as follows: LSCAPE, SF-12 (individual items <5% missing), Belonging to Groups, Chronic Health Conditions (Disability and Other Mental Illness items only), and Housing Satisfaction (individual items <5% missing). The Economic Standards Living Index (ELSI<sub>SF</sub>) had 10.3% missing values (individual items < 5% missing). Only the “other illness” item from the Chronic Health Conditions list had greater than 10% missing values (36.3%). All variables gave heavily skewed data, therefore, non-parametric tests have been conducted as has been recommended by Pallant (2020) as the appropriate statistical procedure for working with skewed data.

### ***Data Analyses***

The data was analysed using SPSS for Windows version 27. The analyses were conducted in stages which allowed for each hypothesis to be addressed in turn.

First, descriptive analyses were conducted to assess the sample’s characteristics (N = 4351) and to determine the overall loneliness of the sample. Variables that were treated as dichotomous included gender (male/female), relationship status (married or de facto/no relationship), living status (alone/with others), chronic health conditions (no conditions/one or more conditions), belonging to groups (yes/no), and volunteering (yes/no). Age, quality of life, living standards, physical and mental health, housing satisfaction, neighbourhood

satisfaction, and social cohesion were treated as continuous variables. Loneliness was treated as both a dichotomous variable (lonely/not lonely) and as a continuous variable.

Based on the earlier definition of loneliness, which comprises of both emotional and social components (de-Jong Gierveld & van Tilburg, 2010; de Jong Gierveld & van Tilburg, 2006), loneliness was assessed in three parts for each analysis: total loneliness (all 6 items), emotional loneliness (3 items), and social loneliness (3 items). Independent samples t-tests were conducted to assess the relationship between loneliness and the dichotomous variables. Spearman's correlations were conducted to assess the relationship between loneliness and the continuous variables. Due to the large number of variables and binary tests carried out, logistic regression was carried out to determine which variables were predictors of loneliness. For the purposes of logistic regression, age and Economic Living Standards Index (ELSI) were added as control variables. Age was expected to have no influence on loneliness, whilst ELSI was expected to be negatively related to loneliness. Logistic regression was chosen rather than multiple regression due to the skewed data for the loneliness variable which violated the normal distribution requirement for multiple regression (Pallant, 2020).

### **Results**

The current study investigated the relationship between loneliness and socio-demographic variables, as well as living standards, health status, housing and neighbourhood satisfaction, social cohesion, and social participation. This section provides the descriptive statistics and inferential testing of the hypotheses outlined in the introduction.

#### **Descriptive Statistics**

The demographic data from participants is described in Table 1. Table 2 presents the means and standard deviations for the continuous variables. Total number of participants in the sample was 4351. Median values were reported in addition to mean values due to the

skewed nature of many of the variables (Pallant, 2020). Quality of life, economic living standards, housing satisfaction, neighbourhood satisfaction, and social cohesion were all skewed towards the higher end of each scale, indicating that the overall sample considered their quality of life, living standards, housing and neighbourhood satisfaction, and social cohesion to be good (see Table 2). As expected for a sample of older adults, only 7.3% were not diagnosed with any chronic health conditions (see Table 1), and scores for the SF-12 physical and mental health scales were below 50/100 (see Table 2). Nearly half of the sample spent time volunteering in their community, and two-thirds of the sample indicated they were a member of at least one social group. The next section describes the loneliness measure in more depth.

### ***Loneliness***

Total possible scores ranged from zero to six, with higher scores indicating more loneliness. Loneliness, as measured by the de Jong Gierveld scale, had a mean score of 1.56 ( $SD = 1.66$ ,  $N = 4266$ ). Figure 2 shows the range of loneliness scores for the sample. 40.3% of the sample was lonely ( $N = 4266$ ). Emotional and social loneliness subscale scores ranged from zero to three, with mean scores of .60 ( $SD = .86$ ,  $N = 4270$ ) and .96 ( $SD = 1.15$ ,  $N = 4281$ ), respectively.

Figure 3 depicts the frequency of “lonely” responses to each item on the loneliness measure. The items that contributed most to older adults’ loneliness were “I miss having people around”, “There are many people I can trust completely”, and “There are plenty of people I can rely on when I have problems”. The current sample was much less likely to report feeling rejected or a sense of emptiness. As can be seen in Figure 4, older adults were more socially lonely than emotionally lonely.

## Hypothesis Testing

This section describes the results from testing the hypotheses as outlined in the introduction. Table 3 presents the means and standard deviations for loneliness for each of the descriptive variables. The correlations for the continuous variables are presented in Table 4.

### *Hypothesis 1 - Loneliness will be related to individual variables of gender, marital status, living alone, and negatively related to self-reported health*

**Gender.** Independent samples t-tests were conducted to compare loneliness scores for males and females. There was no significant difference in total loneliness scores for males and females (see Table 5). However, as seen in Table 7, males ( $M = 1.08$ ,  $SD = 1.18$ ) were slightly more socially lonely than females ( $M = .87$ ,  $SD = 1.12$ ). Table B1 displays the proportions of loneliness responses to each loneliness item, grouped by variable. Men were 8.4% more likely to indicate they did not have people they could rely on compared to women. Similarly, men were more likely to report they did not have people they trusted. The item with the highest number of responses for both genders was “there are many people I can trust completely” (42% of men and 35.6% of women). Both men and women were equally likely to indicate that they experienced emptiness and missing having people around.

**Marital Status.** Independent samples t-tests revealed a small significant difference in loneliness scores between married/de facto relationships (see Tables 5-7). Older adults who are either married or in de facto relationships ( $M = 1.43$ ,  $SD = 1.57$ ) were less lonely than those who were not in relationships ( $M = 1.89$ ,  $SD = 1.85$ ). There was a moderate difference in emotional loneliness scores ( $M$  difference = .28), and a small difference in social loneliness scores ( $M$  difference = .18). As shown in Table B1, Older adults who were not married/de facto reported higher loneliness ratings on all six items of the loneliness measure, with the

largest difference between the married/de facto and the not married/de facto groups being the items “I experience a general sense of emptiness” (9.6% difference) and “I miss having people around” (10.3% difference). The highest number of loneliness responses were given to the item “There are many people I can trust completely” for both groups.

**Living Alone.** There was a small significant difference in loneliness scores between older adults who lived alone and older adults who lived with others (see Tables 5-7). Emotional loneliness scores were moderately higher for those who lived alone ( $M$  difference = .28), whilst social loneliness scores were only slightly higher ( $M$  difference = .11). Whilst loneliness scores were higher across all six items on the loneliness measure for those living alone, the largest difference in loneliness scores between those living alone and those living with others (see Table B1) were for the “I experience a general sense of emptiness” (9.6% higher for living alone) and “I miss having people around” (11.4% higher for living alone) emotional loneliness items. “I miss having people around” had the highest rate of loneliness responses for those who lived alone; whereas the trust item had the highest rate of loneliness responses for those who lived with others (37.7%).

**Self-reported Health.** The relationship between loneliness and self-reported health was assessed using the SF-12 measurement, quality of life, and number of chronic health conditions. As shown in Table 4, there was a weak negative correlation between loneliness and physical health ( $r(3917) = -.15, p < .001$ ), and a moderate negative correlation between loneliness and mental health ( $r(3917) = -.42, p < .001$ ). As physical and mental health improved, older adults were less lonely. Older adults with poorer physical and mental health as assessed by the SF-12 were more likely to indicate having a sense of emptiness than the other loneliness items. Self-reported quality of life was negatively related to loneliness (see Table 4). Older adults who reported having a better quality of life were less lonely. “I

experience a general sense of emptiness” ( $r = -.40$ ) was the item that contributed most strongly to the correlation; whilst the item “I miss having people around” ( $r = -.20$ ) did not contribute as much (see Table B2).

**Health Conditions.** Number of chronic health conditions was weakly correlated with loneliness (see Table 4). Older adults who had a greater number of chronic health conditions were slightly lonelier than older adults who had fewer health problems ( $r(4182) = .17, p < .001$ ). Independent samples t-tests revealed that only some health conditions were significantly related to loneliness (see Table B3). Loneliness scores were moderately higher for older adults with depression, mental illness, sleep disorders, or hepatitis than older adults without each of these conditions. Diabetes, blood pressure, stroke, gout, and cancer did not reveal any significant differences in loneliness scores between older adults with these conditions and those who did not have these conditions. Older adults with chronic health conditions were more likely to report that they did not have people they could rely on (35.0%) or people they could trust completely (38.5%), compared to older adults with no chronic health conditions — only 26.5% lacked people they could rely on, and 29.9% lacked people they could trust (see Table B1). “There are many people I can trust completely” contributed the most towards loneliness scores for those with health conditions (38.5% indicated they did not have people they could trust). However, for those with no chronic health conditions, both the trust item (29.9%) and “I miss having people around” (29.9%) were equal contributors to loneliness scores.

***Hypothesis 2 - Loneliness will be negatively related to social engagement.***

**Social Groups.** There were small significant differences in loneliness scores for older adults who participated in social groups and older adults who did not participate in those social groups (see Tables 5-7). Older adults who were involved in social groups were slightly

less emotionally ( $M$  difference = .13) and socially lonely ( $M$  difference = .19) than older adults who were not involved in social groups. Group members were much less likely to report feeling empty (11.8%; non-group 20.0%) and much more likely to indicate they had people they could trust (63.5%; non-group 55.1%) compared to non-group members (see Table B1). The trust item was the strongest contributor to loneliness scores for both group members and non-group members.

Independent samples t-tests revealed that this effect remained for most of the groups included in the analysis (see Table B4). However, there was no significant difference in loneliness scores for older adults who were part of trade unions and older adults who were not.

**Volunteering.** There were very small differences in total, emotional, and social loneliness scores between those who spent time volunteering in their community and those who did not volunteer (see Tables 5-7). Older adults who volunteered were slightly less lonely than older adults who did not volunteer (Cohen's  $d = .19$ ). Number of hours spent volunteering each week was very weakly negatively correlated with loneliness ( $r(2487) = -.06, p = .002$ ). Older adults who volunteered more hours per week were slightly less lonely than older adults who did not volunteer as many hours. As shown in Table B1, loneliness item scores were lower for those who volunteered in their community across all six items, particularly for "I experience a general sense of emptiness", "There are plenty of people I can rely on when I have problems" and "There are many people I trust completely" when compared to older adults who did not volunteer in their community. Only 9.7% of volunteers (vs 16.9% of non-volunteers) reported feeling empty. Volunteers were less likely to report not having people to rely on (30.8% vs 37.5% of non-volunteers) and trust (34.5% vs 42.0%

of non-volunteers). Both volunteers (10.8%) and non-volunteers (12.8%) reported equally low levels of feeling rejected.

***Hypothesis 3 - Loneliness will be negatively related to housing and neighbourhood satisfaction.***

**Housing Satisfaction.** Housing satisfaction was negatively correlated with loneliness (see Table 4). Older adults who were more satisfied with their house were moderately less lonely than older adults who were less satisfied with their house ( $r(3926) = -.37, p < .001$ ). Five of the six items from the loneliness scale had correlation coefficients ranging from  $-.29$  to  $-.32$ , indicating a moderate relationship with housing satisfaction. The “I miss having people around” item was weakly correlated ( $r = -.17$ ) with housing satisfaction (see Table B2).

**Neighbourhood Satisfaction.** There was a moderate negative correlation neighbourhood satisfaction and loneliness (see Table 4). Older adults who were less satisfied with their neighbourhoods were lonelier than older adults who had greater neighbourhood satisfaction ( $r(4076) = -.34, p < .001$ ). Most of the loneliness items were moderately correlated with neighbourhood satisfaction, with correlation coefficients ranging from  $-.27$  to  $-.31$ . “I miss having people around” was only weakly related ( $r = -.16$ ) to neighbourhood satisfaction (see Table B2).

***Hypothesis 4 - Loneliness will be negatively related to neighbourhood social cohesion. Length of time living at current residence will be negatively correlated with loneliness.***

**Social Cohesion.** Social cohesion was negatively correlated with loneliness (see Table 4). Older adults who reported greater social cohesion were less lonely than older adults who reported lower social cohesion ( $r(4068) = -.33, p < .001$ ). Loneliness items were weakly to moderately related to social cohesion. As shown in Table B2, the loneliness item that was

most related to social cohesion was “There are many people I can trust completely” ( $r = -.31$ ); and the item that was least associated with social cohesion was “I miss having people around” ( $r = -.14$ ).

**Time at Current Residence.** Whilst there was a significant negative correlation between length of time residing at current residence and loneliness, the effect ( $r = -.06$ ,  $p < .001$ ) is extremely small (see Table 4). Older adults who have lived in their current home for many years were just as lonely as older adults who had recently moved into their home. As shown in Table B2, those who had been living at their current residence for longer were slightly more likely to indicate that they had enough people they felt close to ( $r = -.07$ ).

### **Logistic Regression**

This section describes the logistic regression used to determine which factors predicted loneliness in older adults. For the purposes of logistic regression, the loneliness variable was treated as dichotomous (lonely/not lonely). The model contained 15 independent variables as specified in Table 8.

Age and Economic Living Standards Index (ELSI) were included in the logistic regression as control variables. Bivariate analyses revealed both variables were significantly related to loneliness. Age of participant was very weakly negatively correlated ( $r(4264) = -.09$ ,  $p < .001$ ) with loneliness, and the ELSI was moderately negatively correlated ( $r(3859) = -.35$ ,  $p < .001$ ) with loneliness. There was very little difference in the proportion of loneliness responses to the six items between the youngest group (55–59) and the oldest group (85+), particularly for the “I miss having people around” and “There are enough people I feel close to” items (see Table B1), although the largest difference in loneliness responses between these two age groups was “There are many people I can trust completely”. As shown in Table

B1, the proportion of older adults reporting loneliness decreased at a similar rate as ELSI scores increased for all six items.

The model containing all predictor variables was statistically significant,  $\chi^2(15, N = 1809) = 445.17, p < .001$ , indicating that the model was able to distinguish between older adults who were lonely and older adults who were not lonely. The Hosmer-Lemeshow Goodness of Fit test had a value of .086, indicating support for the model. The model correctly classified 71.9% of cases. The model was able to correctly identify 48.1% of loneliness cases, and 86% of those who were not lonely.

As shown in Table 8, eight of the independent variables made a unique statistically significant contribution to the model (Gender, SF-physical, SF-mental, Quality of Life, Housing Satisfaction, Social Cohesion, Volunteer, and ELSI). The strongest predictor of being lonely was gender, indicating that males were 1.74 times more likely to be lonely than females. Quality of Life also made a significant contribution to the model, for every point increase in quality of life, the odds were .72 times lower that older adults would report being lonely. Older adults who volunteered in their communities were .78 times less likely to report loneliness. Although the SF-12 physical measure was significant in the model, with an odds ratio of 1.02, it did not contribute to the prediction of loneliness. The SF-12 mental measure reduced the odds of reporting being lonely by a factor of .95 times.

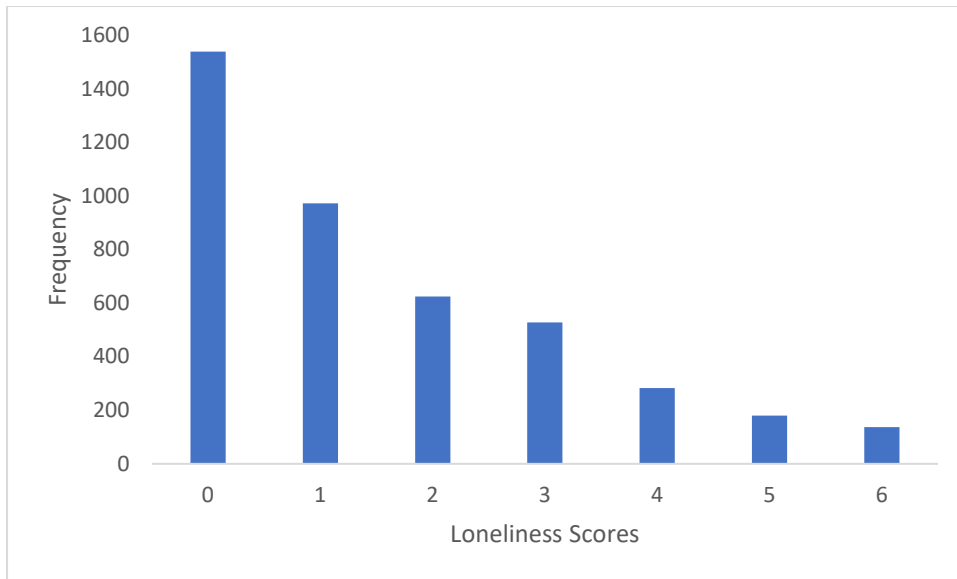
Housing Satisfaction and Neighbourhood Satisfaction were highly correlated, with a bivariate correlation of .60, consequently, when both variables were added to the regression model, only Housing Satisfaction predicted loneliness. When Housing Satisfaction was excluded from the model (see Appendix C), Neighbourhood Satisfaction was a significant predictor of loneliness, with an odds ratio of .95, a similar result to Housing Satisfaction.

## LONELINESS IN OLDER ADULTS

Age and ELSI were added to the logistic regression model as control factors (see Table 5). Age was not a significant predictor of loneliness, whilst ELSI had an odds ratio of .95, indicating that with an increase in living standards, the odds were .95 times less likely to report feeling lonely.

**Figure 2**

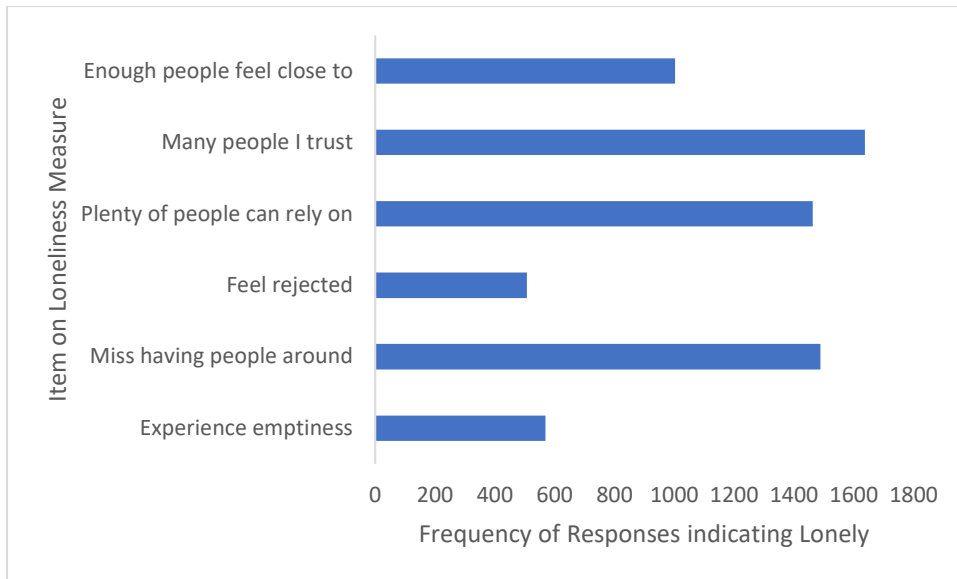
*Frequency of Loneliness Scores*



*Note.* The de Jong Gierveld loneliness 6-item scale has a minimum score of zero, and a maximum score of six

**Figure 3**

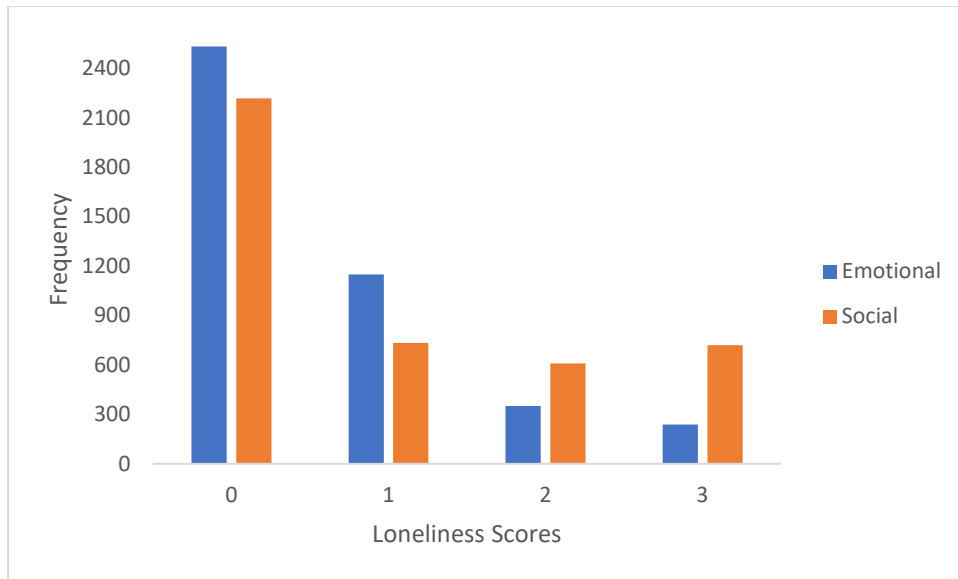
*Frequency of Responses to Loneliness Items Indicating Loneliness*



*Note.* The top three items comprise the Social Loneliness sub-scale, with “no” and “more or less” responses tallied. The bottom three items comprise the Emotional Loneliness sub-scale, with “yes” or “more or less” responses tallied.

**Figure 4**

*Frequency of Emotional and Social Loneliness Subscale Scores*



*Note.* The Emotional and Social Loneliness Subscales are individually scored between zero and three

**Table 1***Number of Missing Cases and Cases per Category for each Variable (N= 4351)*

Variable	Category	N missing	% (N)
Age	55-59	0	15.7 (682)
	60-64		25.2 (1098)
	65-69		24.3 (1056)
	70-74		16.7 (726)
	75-79		10.3 (450)
	80-84		6.9 (302)
	85+		0.9 (37)
Gender	Female	0	56.7 (2469)
	Male		43.2 (1881)
Marital Status	Married or de facto	57	71.8 (3126)
	Not married or de facto		26.8 (1168)
Loneliness	Lonely	85	40.3 (1753)
	Not Lonely		57.8 (2513)
Quality of Life	Poor	36	2.8 (122)
	Neutral		8.6 (373)
	Good		87.8 (3820)
Chronic Health Conditions	No conditions	2049	7.3 (316)
	1 condition		12.0 (522)
	2+ conditions		33.6 (1464)
SF-12	Physical	312	92.8 (4039)
	Mental	312	92.8 (4039)

## LONELINESS IN OLDER ADULTS

Variable	Category	<i>N</i> missing	% (N)
Economic Living Standards	Hardship	217	17.6 (765)
	Comfortable		15.3 (665)
	Good		62.1 (2704)
Living Status	Alone	6	20.1 (874)
	With Others		79.8 (3471)
Time at Residence		110	97.5 (4241)
Housing Satisfaction		309	92.9 (4042)
Neighbourhood Satisfaction		141	96.8 (4210)
Social Cohesion		148	96.6 (4203)
Belonging to Groups	No Groups	503	22.7 (989)
	1 Group		25.3 (1101)
	2+ Groups		40.4 (1758)
Volunteer	No	86	51.0 (2218)
	Yes		47.0 (2047)

**Table 2***Average Scores for Continuous Variables (N = 4351)*

Variable	N	Mean	Standard deviation	Median
Age (years)	4351	66.82	7.24	65.5
Loneliness	4266	1.56	1.66	1.0
SF-12 Physical	4039	46.04	10.61	49.18
SF-12 Mental	4039	49.68	10.05	52.58
Quality of Life	4315	4.29	.76	4.0
Economic Living Standards	3902	24.94	5.94	27.0
Time at Residence (years)	4241	16.30	12.99	13.58
Volunteer (hours)	2515	3.63	5.64	2.0
Housing Satisfaction	4042	35.26	5.14	37.0
Neighbourhood Satisfaction	4210	36.88	4.32	39.0
Social Cohesion	4203	24.98	4.10	26.0

**Table 3***Loneliness Means and Standard Deviations by Descriptive Variables*

Descriptive Variable	Item description	Mean	Standard deviation	P value
Age	55-59	1.72	1.79	< .001
	60-64	1.72	1.73	
	65-69	1.55	1.63	
	70-74	1.47	1.61	
	75-79	1.34	1.51	
	80-84	1.29	1.50	
	85+	1.12	1.34	
Gender	Female	1.46	1.67	< .001
	Male	1.70	1.64	
Marital Status	Married or de facto	1.43	1.57	< .001
	Not married or de facto	1.89	1.85	
Chronic Health Conditions	No Conditions	1.20	1.47	
	One Condition	1.31	1.47	
	2+ Conditions	1.60	1.68	
Economic Living Standard	Hardship	2.62	1.93	< .001
	Comfortable	1.78	1.65	
	Good	1.17	1.41	
Living Status	Alone	1.88	1.86	< .001
	With Others	1.49	1.60	
Belonging to Groups	No groups	1.82	1.79	< .001
	1 Group	1.57	1.70	
	2+ Groups	1.45	1.58	
Volunteering	No	1.72	1.74	< .001
	Yes	1.40	1.55	

*Note.* The de Jong Gierveld scale is scored between zero and six

**Table 4**

*Spearman Correlations Coefficients Showing the Relationship between Continuous Variables and Loneliness*

	Total Loneliness	Emotional Loneliness	Social Loneliness
Age	-.09**	-.04*	-.11*
Quality of Life	-.39**	-.34**	-.32**
Economic Living Standards	-.35**	-.31**	-.28**
Length of Time at Current Residence	-.06**	-.04**	-.05**
Physical Health	-.15**	-.16**	-.09**
Mental Health	-.42**	-.42**	-.30**
Chronic Health Conditions	.14**	.15**	.09**
Housing Satisfaction	-.37**	-.28**	-.33**
Neighbourhood Satisfaction	-.34**	-.26**	-.31**
Social Cohesion	-.33**	-.23**	-.30**
Volunteering Hours	-.06*	-.04 <sup>a</sup>	-.06**

<sup>a</sup> Not Significant

\*  $p < 0.05$ . \*\*  $p < 0.001$

**Table 5***Differences in Total Loneliness Scores as Examined by T-tests*

Variable	<i>T</i>	<i>df</i>	Sig (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		Cohen's <i>d</i>
						Lower	Upper	
Gender	4.74	4263	0.71	0.24	0.05	0.14	0.34	0.15
Marital Status <sup>a</sup>	-7.46	1760.75	<.001	-0.46	0.06	-0.58	-0.34	0.28
Live Alone <sup>a</sup>	5.64	1170.87	<.001	0.39	0.07	0.26	0.53	0.24
Health Condition <sup>a</sup>	-3.58	446.81	<.001	-0.32	0.10	-0.50	-0.15	0.20
Social Groups <sup>a</sup>	4.98	1571.83	<.001	0.32	0.06	0.19	0.45	0.19
Volunteer <sup>a</sup>	6.33	4217.48	<.001	0.32	0.05	0.22	0.42	0.19

<sup>a</sup> Equal variances not assumed

**Table 6***Differences in Emotional Loneliness Scores as Examined by T-tests*

Variable	T	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		Cohen's d
						Lower	Upper	
Gender	1.10	4267	0.91	0.03	0.03	-0.02	0.08	0.03
Marital Status <sup>a</sup>	-8.56	1692.34	<.001	-0.28	0.03	-0.34	-0.22	0.33
Live Alone <sup>a</sup>	7.43	1136.62	<.001	0.28	0.04	0.20	0.35	0.32
Health Condition <sup>a</sup>	-2.69	462.29	<.001	-0.12	0.04	-0.21	-0.03	0.15
Social Groups <sup>a</sup>	3.96	1541.50	<.001	0.13	0.03	0.07	0.20	0.16
Volunteer <sup>a</sup>	4.61	4222.01	<.001	0.12	0.03	0.07	0.17	0.14

<sup>a</sup> Equal variances not assumed

LONELINESS IN OLDER ADULTS

**Table 7**

*Differences in Social Loneliness Scores as Examined by T-tests*

Variable	T	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		Cohen's d
						Lower	Upper	
Gender <sup>a</sup>	6.01	3855.37	<.001	0.21	0.04	0.14	0.28	0.19
Marital Status <sup>a</sup>	-4.37	1927.12	<.001	-0.18	0.04	-0.26	-0.10	0.16
Live Alone <sup>a</sup>	2.50	1258.98	0.003	0.11	0.04	0.02	0.2	0.10
Health Condition	-2.95	2280	0.116	-0.20	0.07	-0.34	-0.07	0.18
Social Groups <sup>a</sup>	4.32	1625.99	<.001	0.19	0.04	0.10	0.28	0.16
Volunteer <sup>a</sup>	5.70	4236.79	<.001	0.20	0.03	0.13	0.27	0.18

<sup>a</sup> Equal variances not assumed

**Table 8***Logistic Regression Predicting the Likelihood of Being Lonely*

	<i>B</i>	<i>SE</i>	Wald	<i>df</i>	<i>p</i>	Odds	95% CI for	
						Ratio	Odds Ratio	
							Lower	Upper
Age	.01	.01	.67	1	.412	1.01	.99	1.03
Gender	.55	.12	22.86	1	<.001	1.74	1.39	2.18
Marital Status	.07	.23	.08	1	.772	1.07	.68	1.68
Live Alone	.21	.25	.68	1	.41	1.23	.75	2.01
SF-12 Physical	.02	.01	6.75	1	.009	1.02	1.01	1.03
SF-12 Mental	-.06	.01	54.67	1	<.001	.95	.93	.96
Chronic Conditions	.01	.04	.07	1	.79	1.01	.94	1.08
Quality of Life	-.34	.11	9.98	1	.002	.72	.58	.88
Housing Satisfaction	-.06	.01	15.14	1	<.001	.95	.92	.97
Neighbourhood								
Satisfaction	-.03	.02	2.97	1	.085	.97	.94	1.00
Social Cohesion	-.07	.02	18.17	1	<.001	.93	.90	.96
Groups	.06	.04	1.71	1	.191	1.06	.97	1.15
Volunteer	-.24	.12	3.99	1	.046	.78	.62	1.00
Time at Residence	-.01	.01	1.99	1	.158	.99	.98	1.00
ELSI	-.05	.01	17.03	1	<.001	.95	.92	.97
Constant	8.39	.88	90.58	1	<.001	4380.48		

## Discussion

Older adult's shrinking social networks has resulted in the negative outcome of loneliness. Despite theories claiming that this is a natural progression (Hoffnung et al., 2013; Steinberg et al., 2011), older adults are still experiencing deficiencies in their social networks (Lee et al., 2018). Loneliness is comprised of two different forms: social loneliness and emotional loneliness (de Jong-Gierveld, 1987), whereby a person can experience both forms at the same time, or may only experience either social loneliness or emotional loneliness. Loneliness is therefore a complex multi-faceted problem, linked to many factors, including both individual characteristics, such as gender, and social characteristics, such as social cohesion. The association between loneliness and individual variables has been well-developed, however, the association between loneliness and social variables is poorly understood.

Previous studies have connected loneliness to being male (e.g., Montero-López Lena et al., 2019; Victor et al., 2006), single/widowed (e.g., Pinquart, 2003; van Tilburg & Suanet, 2019; Warner et al., 2018), and poor health (e.g. Schrempft et al., 2019; Verver et al., 2019). Very few studies have delved into whether environmental or social factors are related to loneliness. One social factor that has a well-established connection to loneliness is living alone (e.g., de Jong Gierveld et al., 2012; Evans et al., 2019). Most of the studies investigating social participation among older adults have focused on physical and mental health rather than loneliness as a separate variable. Connections have been made between volunteering and happiness (Dulin et al., 2012), and volunteering and health (Kim et al., 2020). Belonging to and participating in social groups has been associated with better health (Cohen et al., 2006) and wider social networks (Buz et al., 2014; Cox et al., 1988). One study investigated the link between neighbourhood attachment and loneliness (Kemperman et al.,

2019), with another study showing that housing and neighbourhood attachment were linked to the length of time living in the current residence (Wiles et al., 2009).

The current study had two purposes. The first purpose was to determine if previously studied factors, such as gender, marital status, and health were related to loneliness in the New Zealand older adult population. The second purpose for the current study was to discover if other factors, such as social engagement, neighbourhood attachment, and social cohesion were also related to loneliness. The current study sought to encourage a more holistic approach to loneliness in older adults, where both individual and social factors were considered, to enable a better understanding of how older adults become lonely and what interventions might be helpful in abating their loneliness.

Loneliness has a significant impact on the well-being of older adults. The current study found that many of New Zealand's older adults are lonely. Social loneliness was slightly higher in the current sample, as was found in a similar study (Sum et al., 2015). The results (Chapter 4) from the current study indicate that whilst some factors affect both social and emotional loneliness equally, others were more likely to affect either social or emotional loneliness. This nuance has critical implications in terms of interventions to prevent loneliness. In the next section, the findings from the current study regarding the relationships between loneliness and socio-demographic variables (gender, marital status, health, and living alone) are discussed.

### **Loneliness is Linked to Socio-Demographic Factors**

Contrary to previous studies, (e.g., Olawa et al., 2019; Savikko et al., 2005), gender did not create large differences in loneliness during the bivariate analyses and was only a contributing factor to loneliness when all other variables were controlled for in the logistic regression. In line with previous research, the current study identified that men were more

socially lonely than women. Specifically, men were more likely to report not having people they felt close to, trusted, or could rely on than women. These were all items from the social loneliness scale. Rubio et al. (2016) suggests that men are less likely to express their emotions, which may have contributed to these results. In the current study, both men and women reported experiencing similar rates of emotional loneliness. If men are less likely to express their emotions, then New Zealand's older men could be more emotionally lonely than what the current study suggests.

As expected, marital status was related to loneliness, with those who were married or in de facto relationships reporting being less lonely than those who were not in either of those relationships (e.g., Pinguart, 2003; van Tilburg & Suanet, 2019). Both living alone and self-reported health were negatively related to loneliness. Living alone decreases the number of opportunities for social interactions (Cohen-Mansfield et al., 2016), thereby indicating that interactions within the home can provide sufficient social interactions to prevent feeling lonely. In line with previous studies, in the current study some chronic health conditions had stronger relationships with loneliness than others, for example, hypertension (Asadollahi et al., 2022), but not cardiovascular reactivity (Brown et al., 2021) have been linked to loneliness. Although multimorbidity is associated with loneliness (Ansari et al., 2021), it may be either one particular condition, or the specific combination of conditions that is responsible for the link rather than the total number of conditions.

Although the levels of social loneliness responses were generally higher than the levels of emotional loneliness for the overall sample, older adults who were not either married or in de facto relationships, living alone, and had poor health were more likely to be emotionally lonely than older adults who were in a relationship, living with other, and had better health. These findings make sense as older adults in those circumstances are less likely

to have a close relationship that fosters a strong emotional connection. Emotional loneliness arises when there is an “absence of an intimate relationship or a close emotional attachment” (de Jong Gierveld & van Tilburg, 2006, p. 584). This was reflected in the responses to the items “I experience and general sense of emptiness” and “I miss having people around”. Older adults who live alone obviously do not have a cohabiting partner and may not have another other close relationship to satisfy their emotional connections. Even if those who have poor health are in cohabiting relationships, the relationship dynamic may be changed whereby their partner is more of a caregiver, resulting in a weakened emotional bond.

Unsurprisingly, older adults with depression or other mental health problems were more likely to report being lonely, as found in other studies (e.g., Adams et al., 2004; Grover et al., 2018), with emotional loneliness being particularly more problematic for those with depression (Peerenboom et al., 2015). As mentioned in chapter one, loneliness and depression overlap in their symptomology, however, they differ in that lonely individuals desire social connections, whereas depressed individuals do not (McHugh Power et al., 2020; Weiss, 1974).

Whilst these socio–demographic variables were important in understanding feelings of loneliness in New Zealand’s older adults, none of these variables had an overwhelming influence on loneliness. The analyses conducted suggest that considering socio–demographic factors as part of a more holistic perspective is beneficial in the treatment of loneliness in older adults. The current study aimed to extend the knowledge around older adults and loneliness by looking at whether social engagement and neighbourhood characteristics affected feelings of loneliness. In the next section, the relationship between loneliness and social engagement (volunteering and belonging to groups) is discussed, followed by the

relationship between loneliness and housing and neighbourhood satisfaction. Finally, the discussion turns to loneliness and social cohesion.

### **Loneliness is Negatively Connected to Social Engagement**

Independently, both volunteering and belonging to social groups were both negatively related to loneliness. Interestingly, belonging to a trade union was not related to loneliness, which is likely due to the nature of the group. Trade union groups may not assemble as often as sports clubs or church groups, for example. When all other variables were controlled for, volunteering (but not belonging to groups) still contributed to loneliness, similar to other studies (Kim et al., 2020; Lee, 2021). In the current study, both volunteering and belonging to groups reduced feelings of emptiness and increased the number of people that could be relied on and trusted. These findings support the claim that social participation provides a purpose for older adults, either through an activity they enjoy, a group they belong to, or by providing a service to their community (Lee, 2021; Sundström et al., 2021). Not only did the social participation (volunteering and group membership) reduce social loneliness, but there were also some reductions in emotional loneliness as well. Volunteering has also been associated with increased happiness (Dulin et al., 2012), physical health and mental health (Kim et al., 2020). Older adults who volunteered with youth (Lee, 2021) or provided childcare (Szabó et al., 2021) were less lonely. These findings indicate that older adults who either volunteer where they are interacting with youth, and older adults who provide childcare may experience the most protection from loneliness. Future studies could investigate whether older adults who connect with youth in these ways are less lonely than older adults who do not.

A couple of studies have shown that participation in community groups has been linked to increased health and reduced loneliness (Cohen et al., 2006; Cox et al., 1988). However, this relationship may be mediated by frequency of interaction with the groups,

which is beyond the scope of the current study. Frequency of contact and type of contact are important factors that have been found to affect loneliness (Atzendorf & Gruber, 2021; Choi et al., 2022; Green et al., 2021; Teater et al., 2021). Specifically, in-person contact at least weekly has been shown to be beneficial (Atzendorf & Gruber, 2021; Green et al., 2021). Other community activities and interventions may also help mitigate and protect against loneliness. For example, social activities such as arts programmes (Kim & Kim, 2022), peer companionship (Kotwal et al., 2021), and community support (Teater et al., 2021) are all interventions that have recently been utilised to help reduce loneliness among older adults. Smale et al. (2022) suggest that supportive communities that enable access to a variety of social opportunities foster a sense of belongingness that in turn increases older adults' participation in social activities in their neighbourhood. This cyclical process reiterates the importance of neighbourhood and community supports.

### **Loneliness is Negatively Related to Housing and Neighbourhood Satisfaction**

In the current study, both housing satisfaction and neighbourhood satisfaction were negatively related to loneliness, in line with the study by Kemperman et al. (2019). Older adults who were more comfortable in their homes and neighbourhoods were less lonely. This effect was shown across five of the six loneliness items, where increased housing and neighbourhood satisfaction were associated with reductions in loneliness across those items. Although a reduction of missing having people around was observed, the effect wasn't as strong. Feelings of belonging in a neighbourhood have been associated with lower levels of loneliness (Smale et al., 2022). A more welcoming environment is conducive to social interaction with neighbours and other community members (Wiles et al., 2009). Ease of access to the local facilities helps older adults participate in community activities and feel less lonely (Kemperman et al., 2019). For example, the positioning of bus stops is critical in providing access (Wiles et al., 2009), something that could be looked into in further studies.

Not only are social capital resources essential, but social networking and communication is critical for making these resources known to older adults, particularly lonely older adults (Cannuscio et al., 2003; Menec, 2017).

### **Loneliness is Negatively Related to Social Cohesion**

In the current study, social cohesion was negatively related to loneliness, similar to the findings by Kemperman et al. (2019). Increased social cohesion was associated with reductions in loneliness across all items, although less effective for “I miss having people around”. As expected from the previous literature on social cohesion, the greatest improvements were seen for having people to trust and rely on. A safe neighbourhood enables older adults to participate in social activities, and to feel comfortable in asking neighbours for help (Cannuscio et al., 2003; Weijs-Perrée et al., 2015). Additionally, close relationships with neighbours has a positive effect on well-being (Cantor, 1979). Social cohesion is more prevalent in areas with higher social capital (Warren et al., 2001). Neighbourhood resources, such as senior centres, and creating networks between these resources and the assistance of active older adults, helps lonely older adults to become more involved in social activities and to develop relationships and trust in healthcare professionals, thereby reducing loneliness (Coll-Planas et al., 2017). Coll-Planas et al. (2017) reason that instead of focusing on factors that cannot be changed for example, gender or marital status, making changes at the community level is critical in reducing not only the frequency but also the intensity of loneliness among older adults. They report not only an immediate effect of their intervention implementation but also continued social participation in the long-term, resulting in greater life satisfaction and the development and maintenance of social contacts.

Social capital is particularly important in deprived neighbourhoods where individuals lack other connections, or the ability to obtain connections through affluence. Sampson

(2001) introduces the term *collective efficacy*, which is the ability of communities or neighbourhoods to work together cohesively, focusing on shared goals and beliefs. Collective efficacy and social order are associated with low violence and crime neighbourhoods. Warren et al. (2001), suggest that social capital is integral to better “health, safety, education, economic well-being, political participation, and quality of life of residents in poor communities” (p. 1). They recommend that strong institutions, such as schools, libraries, churches, and other community groups are important in providing opportunities for individuals within a community to have interactions with others and in the development of trust.

Length of time living at current residence was not related to loneliness. This suggests that older adults who have recently moved house have done so to benefit their social connections, which agrees with the study by Tomaszewski (2013), who found that moving house was generally regarded as advantageous for older adults. As would be expected, those who had been living at their current residence for the least amount of time were slightly more likely to report not having enough people they felt close to. Developing connections with neighbours and making close friends takes time.

The findings from the investigation of social engagement and neighbourhood factors indicate that when working with lonely older adults, a wide range of considerations must be made. Interventions with regards to social engagement and the quality of neighbourhoods could offset loneliness caused by spousal bereavement, for example. The following section discusses the limitations of the current study as well as recommendations for future studies.

### **Limitations and Recommendations for Future Research**

There were several limitations of the current study. These are discussed along with recommendations for future research to clarify and further the literature on older adults and loneliness.

Data for the current study was extracted from the Health, Work, and Retirement Study. One of the limitations of the current study is that it is based on the self-reports of those who were able to participate in the lengthy survey. In particular, the housing and neighbourhood satisfaction measures may not accurately represent the actual state of older adults' housing and neighbourhoods. Future research could look to physical examination of the houses and neighbourhoods that older adults live in, and whether the physical environment influences feelings of loneliness. Additionally, the current study only included older adults who were living independently in the community, excluding older adults in retirement villages and homes. Although many older adults living in these facilities are unable to participate in the survey, there are others who could participate and provide some interesting insights into how retirement villages and homes influence loneliness.

Additionally, data from the current study was taken prior to the global pandemic, thus, further research into how Covid-19 has influenced the experience of loneliness among older adults is also needed. The latest research indicates that older adults became lonelier during the lockdown phases of Covid-19 in other countries (Alhalaseh et al., 2022; Atzendorf & Gruber, 2021; Choi et al., 2022; Fuller & Huseth-Zosel, 2022; Holaday et al., 2021; Stolz et al., 2020; van Tilburg, 2022). However, in Turkey, levels of loneliness among older adults actually decreased, which Durmuş and Öztürk (2022) determined was likely due to specific social policies that were put in place to provide extra support to older adults during lockdowns and social distancing measures.

Investigation into social engagement in the current study was limited and incomplete, with the focus solely on social groups and volunteerism. However, other forms of social engagement that may help older adults feel less lonely should also be investigated. For example, Smale et al. (2022) found that making leisure, recreational, and cultural opportunities accessible to older adults was important in reducing feelings of loneliness among older adults. Peer companionship, whereby a lonely older adult is matched with another older adult with a similar background and have also experienced loneliness before (Kotwal et al., 2021), helps develop rapport and provides support from someone who understands to the lonely older adult. Similarly, intergenerational relationships could also help mitigate the effects of loneliness. Zhang and Silverstein (2022) found that older adults who had positive emotional relationships with their adult children were less lonely. This could have important implications for not only helping older adults foster strong connections to their adult children, but also their grandchildren and great grandchildren as well. de Jong Gierveld et al. (2012) report several different types of intergenerational relationship between older adults and their adult children. Interestingly, they found that older adults who are only on the receiving side of exchanges were the loneliest, whilst those who predominantly on the giving side of exchanges with their adult children were the least lonely. Additionally, future research could investigate interventions whereby older adults, particularly those who do not have family, are in contact with younger generations of people. Hawkey and Cacioppo (2010) suggest that socialisation with others outside of familial relationships is an evolutionary survival mechanism. Positive reciprocal relationships provide companionship, support, and connectedness.

The current study was only a preliminary investigation into neighbourhood and community influences on loneliness. Additional studies could investigate whether neighbourhood satisfaction and social cohesion have a mediating or moderating effect on the

relationship between loneliness and volunteering, and loneliness and belonging to social groups. Social participation could be expanded to include more casual social activities, such as dance or art classes, or events that might occur less regularly. With some research suggesting that older adults engaged in youth work being a positive influence on reducing loneliness (Kim et al., 2020; Lee, 2021), further research into whether working with youth in some way is beneficial for older adults. Not only community youth work, but also the provision of childcare could also reduce loneliness in older adults (Szabó et al., 2021). Research could also investigate whether reciprocal learning opportunities between older adults and children provides benefits to both groups.

Further investigation into the impacts of neighbourhood and community accessibility on loneliness would also be valuable. Social capital, as defined earlier, as the support that can be accessed via social connections (Wiles et al., 2009), provides the accessibility needed for neighbourhood satisfaction and social cohesion. At the group-level, this can relate to the resources made available to groups, organisations, and communities; for example, in communities with public transportation where bus stops and/or train stations are physically and financially accessible to older adults, creating a sense of independence and providing social interactions outside of their homes (Wiles et al., 2009). Older adults do not wish to be a burden on society, wanting to maintain their autonomy as much as possible.

At the individual-level, social capital also refers to the resources that come from an individual's social connections, for example, doctors provide a valuable resource in terms of medical advice and additional networks to give an individual access to the things they need (Kawachi et al., 2008). As the world becomes more digital and information is more readily spread online via the internet, it is important to also make sure that same information is still being conveyed through more traditional means, that is, newspapers, radio, and television.

The Covid-19 messaging in New Zealand is a good example of how using multiple forms of communication is allowing the information to reach almost everyone in the country, from the younger people who receive most of their news online, to the elderly who prefer to watch the news on television. This is in line with recent research (Atzendorf & Gruber, 2021; Choi et al., 2022; Holaday et al., 2021; van Tilburg, 2022) demonstrating that during Covid-19 restrictions, online communications were not sufficient replacements for in-person connections for older adults. For many older adults, navigating modern technology may cause stress or fatigue that is not mitigated by the virtual connections with their loved ones (Choi et al., 2022). Therefore, older adults cannot be expected to simply adapt to alternative modes of social interactions. However, communities need to ensure older adults receive the information and access the resources available to them. This can be achieved through clear and consistent communication made between various businesses and facilities, as well as the development of age-friendly environments.

Age-friendly environments are a relatively new idea, which are designed to promote active ageing by ensuring safety, for example, footpaths and accessibility through public transport or reduced distances to shops, for older adults to access services e.g. doctors, supermarket; and their neighbourhoods (Gibney et al., 2019). “An age-friendly city encourages active ageing by optimizing opportunities for health, participation and security in order to enhance quality of life as people age” (World Health Organisation, 2007, p. 1). Age-friendly cities are accessible and inclusive for not only older people but also for those with disabilities or other vulnerabilities. They respect and capitalise on older adults’ experience and knowledge, are responsive to the needs of their inhabitants, and protect the vulnerable (World Health Organisation, 2007). Gibney et al. (2019) found that age-friendly environments promoted overall psychological well-being, and reduced feelings of loneliness. They suggest that age-friendly environments promote autonomy among older adults and

create opportunities for them to participate in their communities, developing and maintaining social connections. Menec et al. (2011) theorise that age-friendly communities should be viewed from an ecological perspective, highlighting the complexity of the interaction between individuals and their environment and influences on social connectivity. Creating age-friendly communities is a complex undertaking due to the interconnectedness of the environmental factors and differential influence on individuals.

One factor that was not included in the current study was whether participants were in urban or rural areas. New Zealand has a lot of isolated farms and small towns. Although the participants were recruited all throughout New Zealand, there was no differentiation between those in urban or rural areas. Based on the literature, older adults in rural areas are more likely to experience loneliness (Cohen-Mansfield et al., 2016; Savikko et al., 2005). Additionally, interventions to ease loneliness may also differ for rural areas where there are fewer resources.

### **Conclusion**

There were three main lessons from the current study. Firstly, loneliness is prevalent and problematic among older adults in New Zealand, with some findings corroborating the previous literature, and the identification of new areas for further research. Secondly, distinguishing between emotional and social loneliness can provide insight into how loneliness is impacting older adults. Thirdly, a holistic approach to loneliness is key to understanding how loneliness arises and in the development of interventions to reduce loneliness.

Loneliness is problematic in New Zealand, with over a third of New Zealand's older adults experiencing loneliness, which is the first main lesson learned from the current study. Of the eight variables that made a unique contribution to predicting loneliness, only half

(gender, physical and mental health, and quality of life) of those had well-established links in the literature. Housing satisfaction/neighbourhood satisfaction, social cohesion, and volunteering were all factors that provided new insight into the experience of loneliness in older adults. These findings suggest that further research should focus on the neighbourhood, community, and environment to provide opportunities for older adults to engage beyond their household.

The second main lesson learned from the current study was that emotional and social loneliness provided some unique insight into the experience of loneliness in older adults. Overall, older adults in New Zealand were more socially lonely than emotionally lonely, particularly older males. Emotional loneliness was more considerable for older adults who were unmarried/not in a relationship, and those with poorer physical and mental health. Yet, for the neighbourhood (i.e., housing and neighbourhood satisfaction, social cohesion) and social engagement (volunteering) variables, social and emotional loneliness were equally affected.

The third main lesson learned from the current study was to engage in a holistic approach to loneliness. Research must move beyond the individual (i.e., gender, marital status, and health), to the environment, neighbourhood, and community. The development of age-friendly cities (Gibney et al., 2019; World Health Organisation, 2007) would be beneficial in not only alleviating loneliness in older adults and providing safe spaces for older adults to navigate, but also in benefiting the rest of the population as well.

Loneliness has wide-reaching and significant impacts on all areas of older adults' lives. It is the responsibility of the communities, local councils, and other agencies to provide safe and engaging environments whereby older adults can participate. Opportunities for older

## LONELINESS IN OLDER ADULTS

adults to contribute their considerable wisdom and experience are needed to provide self-sufficiency not only for older adults, but also for younger generations.

## References

- Adams, K. B., Sanders, S., & Auth, E. A. (2004). Loneliness and depression in independent living retirement communities: Risk and resilience factors. *Aging & Mental Health*, 8(6), 475-485. <https://doi.org/10.1080/13607860410001725054>
- Ahadi, B., & Hassani, B. (2021). Loneliness and quality of life in older adults: The mediating role of depression. *Ageing International*, 46, 337-350. <https://doi.org/10.1007/s12126-021-09408-y>
- Alhalaseh, L., Kasasbeh, F., Al-Bayati, M., Haikal, L., Obeidat, K., Abuleil, A., & Wilkinson, I. (2022). Loneliness and depression among community older adults during the COVID-19 pandemic: A cross-sectional study. *Psychogeriatrics*, 22, 493-501. <https://doi.org/10.1111/psyg.12833>
- Ansari, S., Muhammad, T., & Dhar, M. (2021). How does multi-morbidity relate to feeling of loneliness among older adults? Evidence from a population-based survey in India. *Journal of Population Ageing*, 1-22. <https://doi.org/10.1007/s12062-021-09343-5>
- Antonucci, T. C., Akiyama, H., & Takahashi, K. (2004). Attachment and close relationships across the life span. *Attachment & Human Development*, 6(4), 353-370. <https://doi.org/10.1080/1461673042000303136>
- Asadollahi, A., Ghajari, O., Yarelahi, M., Abnoos, A. B., & Charkazi, A. (2022). Relationship between health status and loneliness among Kazak older adults in Iran: A cross-sectional study on their sense of loneliness. *Current Psychology*, 1-9. <https://doi.org/10.1007/s12144-022-03127-6>
- Atzendorf, J., & Gruber, S. (2021). Depression and loneliness of older adults in Europe and Israel after the first wave of covid-19. *European Journal of Ageing*, 1-13. <https://doi.org/10.1007/s10433-021-00640-8>

- Ayalon, L., Shiovitz-Ezra, S., & Palgi, Y. (2013). Associations of loneliness in older married men and women. *Aging & Mental Health, 17*(1), 33-39.  
<https://doi.org/10.1080/13607863.2012.702725>
- Barnes, L. L., de Leon, C. F., Bienias, J. L., & Evans, D. A. (2004). A Longitudinal Study of Black–White Differences in Social Resources. *Journal of Gerontology: Social Sciences, 59*(3), S146-S153.
- Barnes, T. L., MacLeod, S., Tkatch, R., Ahuja, M., Albright, L., Schaeffer, J. A., & Yeh, C. S. (2021). Cumulative effect of loneliness and social isolation on health outcomes among older adults. *Aging & Mental Health, 26*(7), 1327-1334.  
<https://doi.org/10.1080/13607863.2021.1940096>
- Boehlen, F. H., Maatouk, I., Friederich, H., Schoettker, B., Brenner, H., & Wild, B. (2022). Loneliness as a gender-specific predictor of physical and mental health-related quality of life in older adults. *Quality of Life Research, 31*, 2023-2033.  
<https://doi.org/10.1007/s11136-021-03055-1>
- Borys, S., & Perlman, D. (1985). Gender differences in loneliness. *Personality and Social Psychology Bulletin, 11*(1), 63-74.
- Bosma, H., Jansen, M., Schefman, S., Hajema, K. J., & Feron, F. (2015). Lonely at the bottom: A cross-sectional study on being ill, poor, and lonely. *Public Health, 129*(2), 185-187. <https://doi.org/10.1016/j.puhe.2014.11.016>
- Brown, E. G., Creaven, A., & Gallagher, S. (2021). Loneliness and cardiovascular reactivity to acute stress in older adults. *Psychophysiology, 59*, 1-11.  
<https://doi.org/10.1111/psyp.14012>
- Brush, C. J., Kallen, A. M., Meynadasy, M. A., King, T., Hajcak, G., & Sheffler, J. L. (2022). The P300, loneliness, and depression in older adults. *Biological Psychology, 171*, 1-10. <https://doi.org/10.1016/j.biopsycho.2022.108339>

- Burholt, V., & Scharf, T. (2014). Poor health and loneliness in later life: The role of depressive symptoms, social resources, and rural environments. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 69(2), 311-324. <https://doi.org/10.1093/geronb/gbt121>
- Buz, J., & Pérez-Arechaederra, D. (2014). Psychometric properties and measurement invariance of the Spanish version of the 11-item de Jong Gierveld loneliness scale. *International Psychogeriatrics*, 26(9), 1553-1564. <https://doi.org/10.1017/S1041610214000507>
- Buz, J., Sanchez, M., Levenson, M. R., & Aldwin, C. M. (2014). Aging and social networks in Spain: The importance of pubs and churches. *International Journal of Aging and Human Development*, 78(1), 23-46. <https://doi.org/10.2190/AG.78.1.c>
- Caballer, A., Belmonte, O., Castillo, A., Gasco, A., Sansano, E., & Montoliu, R. (2020). Equivalence of chatbot and paper-and-pencil versions of the de Jong Gierveld loneliness scale. *Current Psychology*, 1-8. <https://doi.org/10.1007/s12144-020-01117-0>
- Canjuga, I., Železnik, D., Neuberg, M., Božicevic, M., & Cikac, T. (2018). Does an impaired capacity for self-care impact the prevalence of social and emotional loneliness among elderly people? *Working with Older People*, 22(4), 211-223. <https://doi.org/10.1108/wwop-01-2018-0001>
- Cannuscio, C., Block, J., & Kawachi, I. (2003). Social capital and successful aging: The role of senior housing. *Annals of Internal Medicine*, 139(5), 395-400.
- Cantor, M. H. (1979). Neighbors and friends. *Research on Aging*, 1(4), 434-463.
- Carr, D. C., Kail, B. L., Matz-Costa, C., & Shavit, Y. Z. (2018). Does becoming a volunteer attenuate loneliness among recently widowed older adults? *Journals of Gerontology -*

*Series B Psychological Sciences and Social Sciences*, 73(3), 501-510.

<https://doi.org/10.1093/geronb/gbx092>

Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312, 1913-1915.

Caycho-Rodriguez, T., Tomás, J. M., Hontangas, P. M., Ventura-León, J., Burga-León, A., Barboza-Palomino, M., Reyes-Bossio, M., Peña-Calero, B. N., & White, M. (2021). Validation of the de Jong Gierveld loneliness scale in Peruvian old adults: A study based on SEM and IRT multidimensional models. *The Journal of General Psychology*, 1-25. <https://doi.org/10.1080/00221309.2021.1913398>

Choi, N. G., Hammaker, S., DiNitto, D. M., & Marti, N. (2022). COVID-19 and loneliness among older adults: Associations with mode of family/friend contacts and social participation. *Clinical Gerontologist*, 45(2), 390-402. <https://doi.org/10.1080/07317115.2021.2013383>

Cohen-Mansfield, J., Hazan, H., Lerman, Y., & Shalom, V. (2016). Correlates and predictors of loneliness in older-adults: A review of quantitative results informed by qualitative insights. *International Psychogeriatrics*, 28(4), 557-576. <https://doi.org/10.1017/S1041610215001532>

Cohen, G. D., Perlstein, S., Chapline, J., Kelly, J., Firth, K. M., & Simmens, S. (2006). The impact of professionally conducted cultural programs on the physical health, mental health, and social functioning of older adults. *The Gerontologist*, 46(6), 726-734.

Coll-Planas, L., del Valle Gómez, G., Bonilla, P., Masat, T., Puig, T., & Monteserin, R. (2017). Promoting social capital to alleviate loneliness and improve health among older people in Spain. *Health & Social Care in the Community*, 25(1), 145-157. <https://doi.org/10.1111/hsc.12284>

- Compernelle, E. L., Finch, L. E., Hawkey, L. C., & Cagney, K. A. (2021). Momentary loneliness among older adults: Contextual differences and their moderation by gender and race/ethnicity. *Social Science and Medicine*, 285, 1-11.  
<https://doi.org/10.1016/j.socscimed.2021.114307>
- Conway, F., Magai, C., Jones, S., Fiori, K., & Gillespie, M. (2013). A six-year follow-up study of social network changes among African-American, Caribbean, and U.S.-born Caucasian urban older adults. *The International Journal of Aging and Human Development*, 76(1), 1-27. <https://doi.org/10.2190/AG.76.1.a>
- Cox, C. L., Spiro, M., & Sullivan, J. A. (1988). Social risk factors: Impact on elders' perceived health status. *Journal of Community Health Nursing*, 5(1), 59-73.
- Cumming, E., & Henry, W. E. (1961). *Growing old: The process of disengagement*. Basic Books Publishing.
- Dahlberg, L., Andersson, L., McKee, K. J., & Lennartsson, C. (2015). Predictors of loneliness among older women and men in Sweden: A national longitudinal study. *Aging and Mental Health*, 19(5), 409-417.  
<https://doi.org/10.1080/13607863.2014.944091>
- de-Jong Gierveld, J., & van Tilburg, T. (2010). The de Jong Gierveld short scales for emotional and social loneliness: Tested on data from 7 countries in the UN generations and gender surveys. *European Journal of Ageing*, 7, 121-130.  
<https://doi.org/10.1007/s10433-010-0144-6>
- de Jong-Gierveld, J. (1987). Developing and testing a model of loneliness. *Journal of Personality and Social Psychology*, 53(1), 119-128.
- de Jong-Gierveld, J., & Kamphuis, F. (1982). The development of a Rasch-type loneliness scale. *Applied Psychological Measurement*, 9(3), 289-299.

de Jong Gierveld, J. (1998). A review of loneliness: Concept and definitions, determinants and consequences. *Reviews in Clinical Gerontology, 8*, 73-80.

de Jong Gierveld, J., Dykstra, P. A., & Schenk, N. (2012). Living arrangements, intergenerational support types and older adult loneliness in Eastern and Western Europe. *Demographic Research, 27*, 167-200.

<https://doi.org/10.4054/DemRes.2012.27.7>

de Jong Gierveld, J., & van Tilburg, T. (2006). A 6-item scale for overall, emotional, and social loneliness: Confirmatory tests on survey data. *Research on Aging, 28*(5), 582-598. <https://doi.org/10.1177/0164027506289723>

de Jong Gierveld, J., & van Tilburg, T. (2010). The de Jong Gierveld short scales for emotional and social loneliness: Tested on data from 7 countries in the UN generations and gender surveys. *Eur J Ageing, 7*, 121-130. <https://doi.org/DOI.10.1007/s10433-010-0144-6>

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). John Wiley & Sons, Incorporated.

<https://ebookcentral.proquest.com/lib/massey/reader.action?docID=1762797>

Drennan, J., Treacy, M., Butler, M., Byrne, A., Fealy, G., Frazer, K., & Irving, K. (2008). The experience of social and emotional loneliness among older people in Ireland.

*Ageing and Society, 28*(8), 1113-1132. <https://doi.org/10.1017/s0144686x08007526>

Dulin, P. L., Gavala, J., Stephens, C., Kostick, M., & McDonald, J. (2012). Volunteering predicts happiness among older Māori and non-Māori in the New Zealand health, work, and retirement longitudinal study. *Ageing & Mental Health, 16*(5), 617-624.

<https://doi.org/10.1080/13607863.2011.641518>

- Durmuş, M., & Öztürk, Z. (2022). The effect of COVID-19 outbreak on older adults' hopelessness, loneliness and spiritual well-being in Turkey. *Journal of Religion and Health, 61*, 851-865. <https://doi.org/10.1007/s10943-021-01494-1>
- Dykstra, P. A., & Fokkema, T. (2007). Social and emotional loneliness among divorced and married men and women: Comparing the deficit and cognitive perspectives. *Basic and Applied Social Psychology, 29*(1), 1-12.
- English, T., & Carstensen, L. L. (2014). Selective narrowing of social networks across adulthood is associated with improved emotional experience in daily life. *International Journal of Behavioral Development, 38*(2), 195-202. <https://doi.org/10.1177/0165025413515404>
- Evans, I. E. M., Llewellyn, D. J., Matthews, F. E., Woods, R. T., Brayne, C., & Clare, L. (2019). Living alone and cognitive function in later life. *Archives of Gerontology and Geriatrics, 81*, 222-233. <https://doi.org/10.1016/j.archger.2018.12.014>
- Frieling, M. A., Davis, W. R., & Chiang, G. (2013). The SF-36v2 and SF-12v2 health surveys in New Zealand: Norms, scoring coefficients and cross-country comparisons. *Australian and New Zealand Journal of Public Health, 37*, 24-31. <https://doi.org/10.1111/1753-6405.12006>
- Fuller, H. R., & Huseth-Zosel, A. (2022). Older adults' loneliness in early COVID-19 social distancing: Implications of rurality. *Journals of Gerontology: Social Sciences, 77*(7), e100-e105.
- Gandek, B., Ware, J. E., Aaronson, N. K., Apolone, G., Bjorner, J. B., Brazier, J. E., Bullinger, M., Kaasa, S., Leplege, A., Prieto, L., & Sullivan, M. (1998). Cross-validation of item selection and scoring for the SF-12 health survey in nine countries: Results from the IQOLA project. *Journal of Clinical Epidemiology, 51*(11), 1171-1178.

- Garabrant, A. A., & Liu, C. (2021). Loneliness and activity engagement among rural homebound older adults with and without self-reported depression. *The American Journal of Occupational Therapy, 75*(5), 1-10.  
<https://doi.org/10.5014/ajot.2021.043828>
- Gibney, S., Zhang, M., & Brennan, C. (2019). Age-friendly environments and psychosocial wellbeing: A study of older urban residents in Ireland. *Aging & Mental Health, 24*(12), 1-12. <https://doi.org/10.1080/13607863.2019.1652246>
- Green, M. J., Whitley, E., Niedzwiedz, C. L., Shaw, R. J., & Katikireddi, S. V. (2021). Social contact and inequalities in depressive symptoms and loneliness among older adults: A mediation analysis of the English longitudinal study of ageing. *SSM - Population Health, 13*, 1-8. <https://doi.org/10.1016/j.ssmph.2021.100726>
- Grover, S., Avasthi, A., Sahoo, S., Lakdawala, B., Dan, A., Nebhinani, N., Dutt, A., Tiwari, S. C., Gania, A. M., Subramanyam, A. A., Kedare, J., & Suthar, N. (2018). Relationship of loneliness and social connectedness with depression in elderly: A multicentric study under the aegis of Indian Association for Geriatric Mental Health. *Journal of Geriatric Mental Health, 5*(2), 99-106.  
[https://doi.org/10.4103/jgmh.jgmh\\_26\\_18](https://doi.org/10.4103/jgmh.jgmh_26_18)
- Grusec, J. E., & Lytton, H. (1988). *Social development: History, theory, and research*. Springer-Verlag.
- Grygiel, P., Humenny, G., & Rębisz, S. (2019). Using the de Jong Gierveld loneliness scale with early adolescents: Factor structure, reliability, stability, and external validity. *Assessment, 26*(2), 151-165. <https://doi.org/10.1177/1073191116682298>
- Gul, S. N., Chishti, R., & Bano, M. (2018a). Gender differences in social support, loneliness, and isolation among old age citizens. *Peshawar Journal of Psychology and Behavioral Sciences, 4*(1), 15-31. <https://doi.org/10.32879/picp.2018.4.1.15>

- Gul, S. N., Chishti, R., & Bano, M. (2018b). Impact of educational qualification on social support, social isolation and social and emotional loneliness: A study of elderly people. *Peshawar Journal of Psychology and Behavioral Sciences*, 4(2), 153-170. <https://doi.org/10.32879/picp.2018.4.2.153>
- Havens, B., Hall, M., Sylvestre, G., & Jivan, T. (2004). Social isolation and loneliness: Differences between older rural and urban Manitobans. *Canadian Journal on Aging*, 23(2), 129-140. <https://doi.org/10.1353/cja.2004.0022>
- Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, 40(2), 218-227. <https://doi.org/10.1007/s12160-010-9210-8>
- Hemberg, J., Nyqvist, F., & Näsman, M. (2019). “Homeless in life” - Loneliness experienced as existential suffering by older adults living at home: A caring science perspective. *Scandinavian Journal Of Caring Sciences*, 33(2), 446-456. <https://doi.org/10.1111/scs.12642>
- Heywood, F., Oldman, C., & Means, R. (2002). *Housing and home in later life*. Open University Press.
- Ho, K. H. M., Cheung, D. S., K., Lee, P. H., Lam, S. C., & Kwan, R. Y. C. (2021). Co-living with migrant domestic workers is associated with a lower level of loneliness among community-dwelling older adults: A cross-sectional study. *Health and Social Care in the Community*, 30, e1123-e1133.
- Hoffnung, M., Hoffnung, R. J., Siefert, K. L., Burton Smith, R., Hine, A., Ward, L., & Pause, C. (2013). *Lifespan Development: A chronological approach*. Wiley.
- Holaday, L. W., Oladele, C. R., Miller, S. M., Dueñas, M. I., & Ross, J. S. (2021). Loneliness, sadness, and feelings of social disconnection in older adults during the

COVID-19 pandemic. *Journal of the American Geriatrics Society*, 70, 329-340.

<https://doi.org/10.1111/jgs.17599>

Holwerda, T. J., Deeg, D. J. H., Beekman, A. T. F., van Tilburg, T. G., Stek, M. L., Jonker, C., & Schoevers, R. A. (2014). Feelings of loneliness, but not social isolation, predict dementia onset: Results from the Amsterdam Study of the Elderly (AMSTEL).

*Journal of Neurology, Neurosurgery and Psychiatry*, 85, 135-142.

<https://doi.org/10.1136/jnnp-2012-302755>

Jaafar, M. H., Villiers-Tuthill, A., Lim, M. A., Ragnathan, D., & Morgan, K. (2019).

Validation of the Malay version of the de Jong Gierveld loneliness scale. *Australasian Journal on Ageing*, 39(1), e9-e15. <https://doi.org/10.1111/ajag.12672>

Jaremka, L. M., Fagundes, C. P., Glaser, R., Bennett, J. M., Malarkey, W. B., & Kiecolt-

Glaser, J. K. (2013). Loneliness predicts pain, depression, and fatigue: Understanding the role of immune dysregulation. *Psychoneuroendocrinology*, 38(8), 1310-1317.

<https://doi.org/10.1016/j.psyneuen.2012.11.016>

Jenkinson, C., Layte, R., Jenkinson, D., Lawrence, K., Petersen, S., Paice, C., & Stradling, J.

(1997). A shorter form health survey: Can the SF-12 replicate results from the SF-36 in longitudinal studies? *Journal of Public Health Medicine*, 19(2), 179-186.

Jensen, J., Spittal, M., Crichton, S., Sathiyandra, S., & Krishnan, V. (2002). *Direct*

*measurement of living standards: The New Zealand ELSI scale*. The Ministry of Social Development.

Jensen, J., Spittal, M., & Krishnan, V. (2005). *ELSI short form: User manual for a direct*

*measure of living standards*. Ministry of Social Development.

Jessen, M. A. B., Palleesen, A. V. J., Kriegbaum, M., & Kristiansen, M. (2018). The

association between loneliness and health: A survey-based study among middle-aged

and older adults in Denmark. *Aging & Mental Health*, 22(10), 1338-1343.

<https://doi.org/10.1080/13607863.2017.1348480>

Jiang, F., Zhang, J., Qin, W., Ding, G., & Xu, L. (2021). Hearing impairment and loneliness in older adults in Shandong, China: The modifying effect of living arrangement. *Aging Clinical and Experimental Research*, 33, 1015-1021.

Julsing, J. E., Kromhout, D., Geleijnse, J. M., & Giltay, E. J. (2016). Loneliness and all-cause, cardiovascular, and noncardiovascular mortality in older men: The Zutphen Elderly Study. *The American Journal of Geriatric Psychiatry*, 24(6), 475-484.  
<https://doi.org/10.1016/j.jagp.2016.01.136>

Kawachi, I., & Berkman, L. F. (2000). Social capital, social cohesion, and health. In L. F. Berkman, I. Kawachi, & M. M. Glymour (Eds.), *Social Epidemiology* (1st ed., pp. 290-319). Oxford University Press.

Kawachi, I., Subramanian, S. V., & Kim, D. (Eds.). (2008). *Social capital and health*. Springer.

Kemperman, A., van den Berg, P., Weijs-Perrée, M., & Uijtdewillegen, K. (2019). Loneliness of older adults: Social network and the living environment. *International Journal of Environmental Research and Public Health*, 16, 1-16.  
<https://doi.org/10.3390/ijerph16030406>

Kim, D. E., & Kim, E. (2022). Types of social activities associated with fewer insomnia symptoms and the mediating role of loneliness in older adults. *Psychogeriatrics*, 22, 299-307. <https://doi.org/10.1111/psyg.12813>

Kim, E. S., Whillans, A. V., Lee, M. T., Chen, Y., & VanderWeele, T. J. (2020). Volunteering and subsequent health and well-being in older adults: An outcome-wide longitudinal approach. *American Journal of Preventive Medicine*, 59(2), 176-186.  
<https://doi.org/10.1016/j.amepre.2020.03.004>

- Kim, M., & Clarke, P. (2015). Urban social and built environments and trajectories of decline in social engagement in vulnerable elders: Findings from Detroit's Medicaid home and community-based waiver population. *Research on Aging, 37*(4), 413-435. <https://doi.org/10.1177/0164027514540687>
- Ko, H., Park, Y. H., Cho, B., Lim, K. C., Chang, S. J., Yi, Y. M., Noh, E. Y., & Ryu, S. I. (2019). Gender differences in health status, quality of life, and community service needs of older adults living alone. *Archives of Gerontology and Geriatrics, 83*, 239-245. <https://doi.org/10.1016/j.archger.2019.05.009>
- Kolodinsky, J. M., DeSisto, T. M., Proppen, D., Putnam, M. E., Roche, E., & Sawyer, W. R. (2013). It is not how far you go, it is whether you can get there: Modeling the effects of mobility on quality of life in rural New England. *Journal of Transport Geography, 31*, 113-122. <https://doi.org/10.1016/j.trangeo.2013.05.011>
- Kotwal, A. A., Fuller, S. M., Myers, J. J., Hill, D., Tha, S. H., Smith, A. K., & Perissinotto, C. M. (2021). A peer intervention reduces loneliness and improves social well-being in low-income older adults: A mixed-methods study. *Journal of the American Geriatrics Society, 69*, 3365-3376. <https://doi.org/10.1111/jgs.17450>
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging, 17*(1), 125-139. <https://doi.org/10.1037/0882-7974.17.1.125>
- Lee, E. E., Depp, C., Palmer, B. W., Glorioso, D., Daly, R., Liu, J., Tu, X. M., Kim, H. C., Tarr, P., Yamada, Y., & Jeste, D. V. (2018). High prevalence and adverse health effects of loneliness in community-dwelling adults across the lifespan: Role of wisdom as a protective factor. *International Psychogeriatrics, 31*(10), 1447-1462. <https://doi.org/10.1017/S1041610218002120>

- Lee, S. (2021). Volunteering and loneliness in older adults: A parallel mediation model. *Aging & Mental Health*, 1-8. <https://doi.org/10.1080/13607863.2021.1913477>
- Liebler, C. A., & Sandefur, G. D. (2002). Gender differences in the exchange of social support with friends, neighbors, and co-workers at midlife. *Social Science Research*, 31, 364-391.
- Liu, L., Gou, Z., & Zuo, J. (2016). Social support mediates loneliness and depression in elderly people. *Journal of Health Psychology*, 21(5), 750-758. <https://doi.org/10.1177/1359105314536941>
- Lyons, R. A., Lo, S. V., & Littlepage, B. N. C. (1994). Comparative health status of patients with 11 common illnesses in Wales. *Journal of Epidemiology and Community Health*, 48, 388-390.
- Macrotrends. (2022). *New Zealand rural population 1960-2022*. Retrieved 15 December from <https://www.macrotrends.net/countries/NZL/new-zealand/rural-population>
- Margelisch, K., Schneewind, K. A., Violette, J., & Perrig-Chiello, P. (2017). Marital stability, satisfaction and well-being in old age: Variability and continuity in long-term continuously married older persons. *Aging & Mental Health*, 21(4), 389-398. <https://doi.org/10.1080/13607863.2015.1102197>
- Mason, M. G. (2011). *Adulthood and aging*. Pearson Education.
- McHugh Power, J., Hannigan, C., Hyland, P., Brennan, S., Kee, F., & Lawlor, B. A. (2020). Depressive symptoms predict increased social and emotional loneliness in older adults. *Aging & Mental Health*, 24(1), 110-118. <https://doi.org/10.1080/13607863.2018.1517728>
- Menec, V. H. (2017). Conceptualizing social connectivity in the context of age-friendly communities. *Journal of Housing For the Elderly*, 31(2), 99-116. <https://doi.org/10.1080/02763893.2017.1309926>

- Menec, V. H., Means, R., Keating, N., Parkhurst, G., & Eales, J. (2011). Conceptualizing age-friendly communities. *Canadian Journal on Aging, 30*(3), 479-493.  
<https://doi.org/10.1017/S0714980811000237>
- Montero-López Lena, M., Luna-Bazaldúa, D., & Shneidman, L. A. (2019). Loneliness in the elderly in Mexico, challenges to the public policies. *The Journal of Chinese Sociology, 6*(1). <https://doi.org/10.1186/s40711-019-0106-0>
- Newall, N. E. G., & Menec, V. H. (2019). Loneliness and social isolation of older adults: Why it is important to examine these social aspects together. *Journal of Social and Personal Relationships, 36*(3), 925-939. <https://doi.org/10.1177/0265407517749045>
- Ng, C. F., & Northcott, H. C. (2015). Living arrangements and loneliness of South Asian immigrant seniors in Edmonton, Canada. *Ageing & Society, 35*, 552-575.  
<https://doi.org/10.1017/So144686X13000913>
- Nicolaisen, M., & Thorsen, K. (2014). Loneliness among men and women: A five-year follow-up study. *Ageing & Mental Health, 18*(2), 194-206.  
<https://doi.org/10.1080/13607863.2013.821457>
- Olawa, B. D., Omolayo, B. O., & Azikiwe, J. C. (2019). Gender influence on loneliness and family and nonfamily support among older adults: The confounding role of widowhood. *Journal of Women and Aging, 33*(3), 1-20.  
<https://doi.org/10.1080/08952841.2019.1690370>
- Oswald, F., Schilling, O., Wahl, H.-W., Fänge, A., Sixsmith, J., & Iwarsson, S. (2006). Homeward bound: Introducing a four-domain model of perceived housing in very old age. *Journal of Environmental Psychology, 26*, 187-201.  
<https://doi.org/10.1016/j.jenvp.2006.07.002>
- Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). Routledge.

- Peerenboom, L., Collard, R. M., Naarding, P., & Comijs, H. C. (2015). The association between depression and emotional and social loneliness in older persons and the influence of social support, cognitive functioning and personality: A cross-sectional study. *Journal of Affective Disorders, 182*, 26-31.  
<https://doi.org/10.1016/j.jad.2015.04.033>
- Penning, M., Liu, G., & Chou, P. H. B. (2014). Measuring loneliness among middle-aged and older adults: The UCLA and de Jong Gierveld loneliness scales. *Social Indicators Research, 118*, 1147-1166. <https://doi.org/10.1007/s11205-013-0461-1>
- Peplau, L. A., Miceli, M., & Morasch, B. (1982). Loneliness and self-evaluation. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy* (pp. 135-151). Wiley.
- Peplau, L. A., & Perlman, D. (1982). *Loneliness: A sourcebook of current theory, research, and therapy*. Wiley.
- Perissinotto, C., Holt-Lunstad, J., Periyakoil, V. S., & Covinsky, K. E. (2019). A practical approach to assessing and mitigating loneliness and isolation in older adults. *Journal of the American Geriatrics Society, 67*, 657-662.  
<https://doi.org/10.1111/jgs.15746>
- Perissinotto, C. M., Stijacic Cenzer, I., & Covinsky, K. E. (2012). Loneliness in older persons: A predictor of functional decline and death. *Archives of Internal Medicine, 172*(14), 1078-1083. <https://doi.org/10.1001/archinternmed.2012.1993>
- Phillips, H. (2021). *Technical report: 2020 health, work and retirement (HWR) survey*. Massey University.
- Pinquart, M. (2003). Loneliness in married, widowed, divorced, and never-married older adults. *Journal of Social and Personal Relationships, 20*(1), 31-53.

- Pinquart, M., & Sörensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology*, *23*(4), 245-265.
- Rico-Urbe, L. A., Caballero, F. F., Olaya, B., Tobiasz-Adamczyk, B., Koskinen, S., Leonardi, M., Haro, J. M., Chatterji, S., Ayuso-Mateos, J. L., & Miret, M. (2016). Loneliness, social networks, and health: A cross-sectional study in three countries. *PLoS One*, *11*(1), e0145264. <https://doi.org/10.1371/journal.pone.0145264>
- Rodríguez-Blázquez, C., Ayala-García, A., Forjaz, M. J., & Gallardo-Peralta, L. P. (2020). Validation of the de Jong Gierveld loneliness scale, 6-item version, in a multiethnic population of Chilean older adults. *Australasian Journal on Ageing*, *40*, e100-e108. <https://doi.org/10.1111/ajag.12893>
- Rubinstein, R. L., & Parmelee, P. A. (1992). Attachment to place and the representation of the life course by the elderly. In I. Altman & S. M. Low (Eds.), *Place Attachment* (Vol. 12, pp. 139-163). Plenum Press.
- Rubio, L., Dumitrache, C., Cordon-Pozo, E., & Rubio-Herrera, R. (2016). Coping: Impact of Gender and Stressful Life Events in Middle and in Old Age. *Clinical Gerontologist*, *39*(5), 468-488. <https://doi.org/10.1080/07317115.2015.1132290>
- Sampson, R. J. (2001). Crime and public safety: Insights from community-level perspectives on social capital. In S. Saegert, J. P. Thompson, & M. R. Warren (Eds.), *Social capital and poor communities* (pp. 89-114). Russell Sage Foundation.
- Sanderson, K., & Andrews, G. (2002). The SF-12 in the Australian population: Cross-validation of item selection. *Australian and New Zealand Journal of Public Health*, *26*(4), 343-345.
- Santini, Z. I., Fiori, K. L., Feeney, J., Tyrovolas, S., Haro, J. M., & Koyanagi, A. (2016). Social relationships, loneliness, and mental health among older men and women in

- Ireland: A prospective community-based study. *Journal of Affective Disorders*, 204, 59-69. <https://doi.org/10.1016/j.jad.2016.06.032>
- Savikko, N., Routasalo, P., Tilvis, R. S., Strandberg, T. E., & Pitkälä, K. H. (2005). Predictors and subjective causes of loneliness in an aged population. *Archives of Gerontology and Geriatrics*, 41(3), 223-233. <https://doi.org/10.1016/j.archger.2005.03.002>
- Schrempft, S., Jackowska, M., Hamer, M., & Steptoe, A. (2019). Associations between social isolation, loneliness, and objective physical activity in older men and women. *BMC Public Health*, 19(74), 1-10. <https://doi.org/10.1186/s12889-019-6424-y>
- Schwartz, E., & Litwin, H. (2018). Social network changes among older Europeans: The role of gender. *European Journal of Ageing*, 15(4), 359-367. <https://doi.org/10.1007/s10433-017-0454-z>
- Shankar, A., McMunn, A., Demakakos, P., Hamer, M., & Steptoe, A. (2017). Social isolation and loneliness: Prospective associations with functional status in older adults. *Health Psychology*, 36(2), 179-187. <https://doi.org/10.1037/hea0000437>
- Siette, J., Berry, H., Jorgensen, M., Brett, L., Georgiou, A., McClean, T., & Westbrook, J. (2021). Social participation among older adults receiving community care services. *Journal of Applied Gerontology*, 40(9), 997-1007. <https://doi.org/10.1177/0733464820938973>
- Smale, B., Wilson, J., & Akubueze, N. (2022). Exploring the determinants and mitigating factors of loneliness among older adults. *Wellbeing, Space, and Society*, 3, 1-11. <https://doi.org/10.1016/j.wss.2022.100089>
- Srivastava, S., Ramanathan, M., Dhillon, P., Maurya, C., & Singh, S. K. (2021). Gender differentials in prevalence of loneliness among older adults in India: An analysis from

WHO study on global AGEing and adult health. *Ageing International*, 46, 395-421.

<https://doi.org/10.1007/s12126-020-09394-7>

Stafford, M., Bartley, M., Sacker, A., & Marmot, M. (2003). Measuring the social environment: Social cohesion and material deprivation in England and Scottish neighbourhoods. *Environment and Planning A*, 35(8), 1459-1475.

<https://doi.org/10.1068/a35257>

Statistics New Zealand. (2021, 20 April 2021). *National and subnational period life tables: 2017-2019*. New Zealand Government. Retrieved 24 February 2022 from

<https://www.stats.govt.nz/information-releases/national-and-subnational-period-life-tables-2017-2019>

Statistics New Zealand. (2022, 15 February 2022). *National population projections, by age and sex, 2020(base)-2073*. New Zealand Government. Retrieved 24 February 2022

from <https://nzdotstat.stats.govt.nz/wbos/Index.aspx>

Steinberg, L., Bornstein, M. H., Vandell, D. L., & Rook, K. S. (2011). *Lifespan development: Infancy through adulthood*. Wadsworth Cengage Learning.

Stocker, C. M., Gilligan, M., Klopach, E. T., Conger, K. J., Lanthier, R. P., Neppl, T. K., O'Neal, C. W., & Wickrama, K. A. S. (2020). Sibling relationships in older

adulthood: Links with loneliness and well-being. *Journal of Family Psychology*, 34(2), 175-185. <https://doi.org/10.1037/fam0000586>

Stolz, E., Mayerl, H., & Freidl, W. (2020). The impact of COVID-19 restriction measures on loneliness among older adults in Austria. *The European Journal of Public Health*,

31(1), 44-49. <https://doi.org/10.1093/eurpub/ckaa238>

Sum, S., Saboor, M., & Sahaf, R. (2015). Older people, loneliness and depression: Feeling of loneliness and depression among older adults with higher educational achievements.

*Medicinski Glasnik/Medical Gazette*, 20(56), 31-42.

Sundström, M., Blomqvist, K., & Edberg, A. (2021). Being a volunteer encountering older people's loneliness and existential loneliness: Alleviating loneliness for others and oneself. *Scandinavian Journal Of Caring Sciences*, 35, 538-547.

<https://doi.org/10.1111/scs.12869>

Szabó, Á., Kok, A. A. L., Beekman, A. T. F., & Huisman, M. (2019). Longitudinal examination of emotional functioning in older adults after spousal bereavement. *The Journals of Gerontology, Series B: Psychological Sciences & Social Sciences*, 75(8), 1668-1678. <https://doi.org/10.1093/geronb/gbz039>

Szabó, Á., Neely, E., & Stephens, C. (2021). The psychosocial benefits of providing non-kin childcare in older adults: A longitudinal study with older New Zealanders. *Journal of Health Psychology*, 26(11), 1926-1938. <https://doi.org/10.1177/1359105319893011>

Taylor, H. O., Taylor, R. J., Nguyen, A. W., & Chatters, L. (2018). Social isolation, depression, and psychological distress among older adults. *Journal of Aging and Health*, 30(2), 229-246. <https://doi.org/doi:10.1177/0898264316673511>

Teater, B., Chonody, J. M., & Davis, N. (2021). Risk and protective factors of loneliness among older adults: The significance of social isolation and quality and type of contact. *Social Work in Public Health*, 36(2), 128-141.

<https://doi.org/10.1080/19371918.2020.1866140>

The WHOQOL Group. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological Medicine*, 28, 551-558.

<https://doi.org/https://doi.org/10.1017/S0033291798006667>

Thurston, R. C., & Kubzansky, L. D. (2009). Women, loneliness, and incident coronary heart disease. *Psychosomatic Medicine*, 71(8), 836-842.

<https://doi.org/10.1097/PSY.0b013e3181b40efc>

Tomás, J. M., Pinazo-Hernandis, S., Donio-Bellegarde, M., & Hontangas, P. M. (2017).

Validity of the de Jong Gierveld loneliness scale in Spanish older population: Competitive structural models and item response theory. *European Journal of Ageing, 14*(4), 429-437. <https://doi.org/10.1007/s10433-017-0417-4>

Tomás, J. M., Pinazo-Hernandis, S., Oliver, A., Donio-Bellegarde, M., & Tomás-Aguirre, F.

(2019). Loneliness and social support: Differential predictive power on depression and satisfaction in senior citizens. *Journal of Community Psychology, 47*(5), 1225-1234. <https://doi.org/10.1002/jcop.22184>

Tomaszewski, W. (2013). Living environment, social participation and wellbeing in older

age: The relevance of housing and local area disadvantage. *Journal of Population Ageing, 6*(1-2), 119-156. <https://doi.org/10.1007/s12062-012-9077-5>

Torres, S. (2019). Aging alone, gossiping together: Older adults' talk as social glue. *Journals*

*of Gerontology - Series B Psychological Sciences and Social Sciences, 74*(8), 1474-1482. <https://doi.org/10.1093/geronb/gby154>

Townsend, P. (1973). Isolation and loneliness in the aged. In R. S. Weiss (Ed.), *Loneliness:*

*The experience of emotional and social isolation* (pp. 175-188). The MIT Press.

Uysal-Bozkir, O., Fokkema, T., MacNeil-Vroomen, J. L., van Tilburg, T., & de Rooij, S. E.

(2017). Translation and validation of the de Jong Gierveld loneliness scale among older migrants living in the Netherlands. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 72*(1), 109-119.

<https://doi.org/10.1093/geronb/gbv044>

van den Broek, T. (2017). Gender differences in the correlates of loneliness among Japanese persons aged 50-70. *Australasian Journal on Ageing, 36*(3), 234-237.

<https://doi.org/10.1111/ajag.12448>

- van Tilburg, T. G. (2022). Emotional, social, and existential loneliness before and during the COVID-19 pandemic: Prevalence and risk factors among Dutch older adults. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 77(7), 3179-3184. <https://doi.org/10.1093/geronb/gbab101>
- van Tilburg, T. G., & Suanet, B. (2019). Unmarried older people: Are they socially better off today? *The Journals of Gerontology, Series B: Psychological Sciences & Social Sciences*, 74(8), 1463-1473. <https://doi.org/10.1093/geronb/gby120>
- Verver, D., Merten, H., de Blok, C., & Wagner, C. (2019). A cross sectional study on the different domains of frailty for independent living older adults. *BMC Geriatrics*, 19(1), 61-72. <https://doi.org/10.1186/s12877-019-1077-3>
- Victor, C. R., Dobbs, C., Gilhooly, K., & Burholt, V. (2021). Loneliness in mid-life and older adults from ethnic minority communities in England and Wales: Measure validation and prevalence estimates. *European Journal of Ageing*, 18, 5-16. <https://doi.org/10.1007/s10433-020-00564-9>
- Victor, C. R., Scambler, S. J., Bowling, A. N. N., & Bond, J. (2005). The prevalence of, and risk factors for, loneliness in later life: A survey of older people in Great Britain. *Ageing and Society*, 25(6), 357-375. <https://doi.org/10.1017/s0144686x04003332>
- Victor, C. R., Scambler, S. J., Marston, L., Bond, J., & Bowling, A. (2006). Older people's experiences of loneliness in the UK: Does gender matter? *Social Policy and Society*, 5(1), 27-38. <https://doi.org/10.1017/s1474746405002733>
- Ware Jr, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-item short-form health survey. *Medical Care*, 34(3), 220-233.
- Warner, D. F., Adams, S. A., & Anderson, R. K. (2018). The good, the bad, and the indifferent: Physical disability, social role configurations, and changes in loneliness

- among married and unmarried older adults. *Journal of Aging and Health*, 31(8), 1423-1453. <https://doi.org/10.1177/0898264318781129>
- Warren, M. R., Thompson, J. P., & Saegert, S. (2001). The role of social capital in combating poverty. In S. Saegert, J. P. Thompson, & M. R. Warren (Eds.), *Social capital and poor communities* (pp. 1-28). Russell Sage Foundation.
- Weijs-Perrée, M., van den Berg, P., Arentze, T., & Kemperman, A. (2015). Factors influencing social satisfaction and loneliness: A path analysis. *Journal of Transport Geography*, 45, 24-31. <https://doi.org/10.1016/j.jtrangeo.2015.04.004>
- Weiss, R. S. (1974). *Loneliness: The experience of emotional and social isolation*. The MIT Press.
- Weiss, R. S. (1982). Issues in the study of loneliness. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 71-80). Wiley.
- Wenger, G. C. (1997). Social networks and the prediction of elderly people at risk. *Aging & Mental Health*, 1(4), 311-320. <https://doi.org/10.1080/13607869757001>
- Wenger, G. C., Davies, R., Shahtahmasebi, S., & Scott, A. (1996). Social isolation and loneliness in old age: Review and model refinement. *Ageing and Society*, 16(3), 333-358. <https://doi.org/10.1017/s0144686x00003457>
- Wiles, J. L., Allen, R. E. S., Palmer, A. J., Hayman, K. J., Keeling, S., & Kerse, N. (2009). Older people and their social spaces: A study of well-being and attachment to place in Aotearoa New Zealand. *Social Science & Medicine*, 68, 664-671. <https://doi.org/10.1016/j.socscimed.20>
- Windsor, T. D., Pearson, E. L., Crisp, D. A., Butterworth, P., & Anstey, K. J. (2021). *Neighbourhood characteristics: Shaping the wellbeing of older Australians*. (NSPAC Research Monograph, Issue. N. S. P. A. Centre.

- Wolf, L. D., & Davis, M. C. (2014). Loneliness, daily pain, and perceptions of interpersonal events in adults with fibromyalgia. *Health Psychology, 33*(9), 929-937.  
<https://doi.org/10.1037/hea0000059>
- World Health Organisation. (2007). *Global age-friendly cities: A guide*. WHO Press.
- World Health Organisation. (2020). *Decade of healthy ageing: Baseline report*. W. H. Organisation. <https://www.who.int/publications/i/item/9789240017900>
- World Health Organisation. (2022, 2022). *Global health estimates: Life expectancy and leading causes of death and disability*. World Health Organisation. Retrieved 24 February 2022 from <https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates>
- Yang, F., & Gu, D. (2021). Widowhood, widowhood duration, and loneliness among older adults in China. *Social Science & Medicine, 283*, 1-10.  
<https://doi.org/10.1016/j.socscimed.2021.114179>
- Young, J. E. (1982). Loneliness, depression and cognitive therapy: Theory and application. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 379–405). Wiley Interscience.
- Zhang, X., & Silverstein, M. (2022). Intergenerational emotional cohesion and psychological well-being of older adults in rural China: A moderated mediation model of loneliness and friendship ties. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences, 77*(3), 525-535. <https://doi.org/10.1093/geronb/gbab122>

**Appendix A: Health, Work, and Retirement (HWR) Survey 2020**

## General instructions for completing the survey Please read the following carefully

- You can decline to answer any particular question. If you choose not to answer a question, please leave it blank.
- There are no right or wrong answers; we want the response that is best for you.
- It is important that you give your own answers to the questions.
- Do not linger too long over each question; usually your first response is best.
- Completion and return of this survey implies consent to take part in this component of the study.

### For each question in the survey you will be asked to provide either:

- a single response. Please mark with a cross (e.g. ✕) inside one box on each line in pen. If you make a mistake, simply scribble it out and mark the correct answer.
- one or more responses, as appropriate. For these items you will be instructed to 'Please cross all that apply'.
- a written answer. To provide words, please print your answer as clearly as possible on the line provided.

**Example question and response:** Please cross 'Yes' to indicate if a health professional has told you that you have any of the following conditions:

(Please cross one box on each line)

	No	Yes, in the last 12 months	Yes, prior to the last 12 months
Sleep disorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stroke	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cancer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please specify cancer type: *melanoma*

- a number: where a number or date is required, print the figure in the box provided.

**Example question and response:** How many of the following people are you in regular contact with? Please place a zero or a number in the box provided.

Adult child(ren) and/or grandchild(ren)/mokokopuna	<input type="text"/>	<input type="text" value="5"/>
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Thank you for taking the time to complete this questionnaire.

If you need help to answer any questions, please contact us either on the HART free-phone

line **0800 100 134** or via email: [hart@massey.ac.nz](mailto:hart@massey.ac.nz)

## YOUR HEALTH, WELLBEING AND QUALITY OF LIFE

Q1 In general, would you say your health is: *(Please cross one box)*

Excellent	Very good	Good	Fair	Poor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q2 All things considered, how satisfied are you with your life as a whole these days? *(Please cross one box)*

Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q3 How would you rate your quality of life? *(Please cross one box)*

Very poor	Poor	Neither good nor poor	Good	Very good
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**The following questions are about activities you might do during a typical day.**

Q4 Does your health now limit you in these activities? If so how much?

*(Please cross one box on each line)*

	Yes, limited a lot	Yes, limited a little	No, not limited at all
Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climbing <u>several</u> flights of stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q5 During the past 4 weeks, how much of the time have you had any of the following problems with your work, or other regular daily activities as a result of your physical health?

*(Please cross one box on each line)*

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
<u>Accomplished less</u> than you would like	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were limited in the <u>kind</u> of work or other activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q6 During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

*(Please cross one box on each line)*

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
<u>Accomplished less</u> than you would like	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did work or other activities <u>less carefully</u> than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q7 During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)? *(Please cross one box)*

Not at all	A little bit	Moderately	Quite a bit	Extremely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Q8 These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much time during the past 4 weeks:

*(Please cross one box on each line)*

	<b>All of the time</b>	<b>Most of the time</b>	<b>Some of the time</b>	<b>A little of the time</b>	<b>None of the time</b>
Have you felt calm and peaceful?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you felt downhearted and depressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you have a lot of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Q9 During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, whānau, etc.)? *(Please cross one box).*

<b>All of the time</b>	<b>Most of the time</b>	<b>Some of the time</b>	<b>A little of the time</b>	<b>None of the time</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Q10 How would you rate your memory at the present time? *(Please cross one box).*

<b>Excellent</b>	<b>Very good</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Q11 Would you say your memory at the present time is better, about the same, or worse now than it was 2 years ago? *(Please cross one box).*

<b>Better</b>	<b>Same</b>	<b>Worse</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Q12 Please answer the following questions about yourself by indicating the extent of your agreement.

*(Please cross one box on each line)*

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
There is not enough purpose in my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To me, the things I do are all worthwhile.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most of what I do seems trivial and unimportant to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I value my activities a lot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't care very much about the things I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have lots of reasons for living.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q13 Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week (7 days).

<i>(Please cross <u>one</u> box on each line)</i>	<b>Rarely or none of the time</b>	<b>Some or a little of the time</b>	<b>Occasionally or a moderate amount of the time</b>	<b>All of the time</b>
I was bothered by things that usually don't bother me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt that everything I did was an effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt hopeful about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt fearful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I could not "get going."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q14 Please answer the items according to how you've felt in the last week. Indicate 'agree' if you mostly agree that the item describes you or indicate 'disagree' if you mostly disagree that the item describes you.

<i>(Please cross <u>one</u> box on each line)</i>	<b>Agree</b>	<b>Disagree</b>
I worry a lot of the time.	<input type="checkbox"/>	<input type="checkbox"/>
Little things bother me a lot.	<input type="checkbox"/>	<input type="checkbox"/>
I think of myself as a worrier.	<input type="checkbox"/>	<input type="checkbox"/>
I often feel nervous.	<input type="checkbox"/>	<input type="checkbox"/>
My own thoughts often make me nervous.	<input type="checkbox"/>	<input type="checkbox"/>

Q15 How often do you take part in sports or activities that are:

<i>(Please cross <u>one</u> box on each line)</i>	<b>More than once a week</b>	<b>Once a week</b>	<b>One to three times a month</b>	<b>Hardly ever or never</b>
...vigorous (e.g., running or jogging, swimming, aerobics)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...moderately energetic (e.g., gardening, brisk walking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...mildly energetic (e.g., vacuuming, laundry/washing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q16 Here is a list of statements that people have used to describe their lives or how they feel. We would like to know how often, if at all, you think the following applies to you.

(Please cross one box on each line)

	Often	Sometimes	Not often	Never
My age prevents me from doing the things I would like to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that what happens to me is out of my control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel left out of things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can do the things that I want to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I can please myself what I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortage of money stops me from doing things I want to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I look forward to each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that my life has meaning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy the things that I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel full of energy these days.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that life is full of opportunities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that the future looks good for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q17 In the last 12 months, how many times have you seen a doctor or been visited by a doctor about your own health? By 'doctor' we mean any GP or family doctor, but not a specialist. (Please cross one box)

Never	1 time	2 times	3-5 times	6-11 times	12 times or more
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q18 In the last 12 months, how many times have you yourself:

(Please cross one box on each line)

	Never	1 or 2 times	3 or 4 times	5 or more times
Been admitted to hospital for one night or longer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Used a service at, or been admitted to, a hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gone to a hospital emergency department as a patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consulted another health professional other than the above	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sought medical treatment for an accident or injury (including any of the above contacts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q19 To what degree would you say the COVID-19 pandemic has had a negative impact on your overall:

(Please cross one box on each line)

	Not at all	A little bit	Moderately	Quite a bit	Extremely
Physical health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mental health

Q20 Has a health professional or government health agency ever told you that you have COVID-19?

<sub>1</sub> No  <sub>2</sub> Yes

**We are interested in hearing about your experiences of the COVID-19 pandemic. There is space on the back page of the survey to write about these experiences if you wish.**

Q21 Please indicate whether a health professional has ever told you that you have any of the following conditions.

*(Please cross one box on each line)*

	No	Yes, in the last 12 months	Yes, prior to the last 12 months
Arthritis or rheumatism	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Disorder of the neck or back. (e.g. lumbago, sciatica, chronic back or neck pain, vertebrae or disc problems)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diabetes	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
A disability	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Please specify disability:			
Heart trouble (e.g., angina or heart attack)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
High blood pressure or hypertension	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Depression	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Other mental illness	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Please specify other mental illness:			
Respiratory condition (e.g., bronchitis, asthma)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Sleep disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stroke	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Active or chronic gout	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Active/chronic hepatitis, cirrhosis or other liver condition	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Cancer	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Please specify cancer (e.g. lung, leukaemia, melanoma):			
Other illness	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Please specify other illness: _____			

Q22 Can you see ordinary newsprint? (with glasses or contact lenses if you usually wear them)

*(Please cross one box)*

Easily	With difficulty	Not at all
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q23 Can you hear a conversation with one other person (whether or not you usually wear a hearing aid)?

*(Please cross one box)*

<b>Easily</b>	<b>With difficulty</b>	<b>Not at all</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q24 In the past six months, have you had any falls including a slip or trip in which you lost your balance and landed on the floor or ground (e.g., trip over on a footpath, slip down some stairs, fall from a ladder)? *(Please cross one box)*

<b>No, not at all</b>	<b>Yes, once</b>	<b>Yes, twice</b>	<b>Yes, 3 or more times</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q25 In the past six months, have you slipped or tripped but managed to stop yourself falling (e.g., by grabbing furniture for support, or, regaining your balance)? *(Please cross one box)*

<b>No, not at all</b>	<b>Yes, once</b>	<b>Yes, twice</b>	<b>Yes, 3 or more times</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q26 How many hours of sleep do you usually get in a 24-hour period, including all naps and sleeps?

		<b>Hours (range 1 – 24)</b>
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Q27 How satisfied are you with your sleep? *(Please cross one box).*

<b>Very dissatisfied</b>	<b>Dissatisfied</b>	<b>Neither satisfied nor dissatisfied</b>	<b>Satisfied</b>	<b>Very satisfied</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q28a What is your current driving status? *(Please cross one box)*

<input type="checkbox"/> <b>Current driver</b>	<input type="checkbox"/> <b>Past driver</b>	<input type="checkbox"/> <b>Never been a driver (please go to Q29)</b>
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Q28b In the last two years, have you been a driver in an auto accident (including minor bumps)? If so, in how many accidents? *(Please cross one box)*

<input type="checkbox"/> <b>Yes, one</b>	<input type="checkbox"/> <b>Yes, two or more</b>	<input type="checkbox"/> <b>No, I have not (please go to Q29)</b>
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Q28c Within these accident(s), in how many:

<i>(Please cross <u>one</u> box on each line)</i>	<b>None</b>	<b>One</b>	<b>Two or more</b>
Was an insurance claim submitted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were the police contacted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did someone need urgent medical attention or treatment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**The following questions are about your health and health related behaviours. Please cross the box that best answers each question.**

Q29 Have you, at any stage of your life, ever been a regular smoker? *(Please cross one box)*

<input type="checkbox"/> <b>Yes</b>	<input type="checkbox"/> <b>No</b>
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Q30 If you currently consider yourself a regular smoker, how many do you think you would smoke on an average day? *(Please cross one box)*

<b>1 to 10</b>	<b>11 to 20</b>	<b>21 to 30</b>	<b>31 or more</b>	<b>Not a regular smoker</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q31 How often do you have a drink containing alcohol? (*Please cross one box*)

Never	Monthly or less	Two to four times per month	Two to three times per week	Four or more times a week
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q32a If you answered 'Never' at Q31, have you ever drunk alcohol in the past? (*Please cross one box*)

Yes	No	If 'No', go to Q33a
<input type="checkbox"/>	<input type="checkbox"/>	

Q32b How many drinks containing alcohol do you have on a typical day when drinking? (*Please cross one box*)

1 or 2	3 or 4	5 or 6	7 to 9	10 or more
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q32c How often do you have six or more drinks on one occasion? (*Please cross one box*)

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q33a Have you ever used or tried smoking cannabis (marijuana, grass, dope etc.)? (*Please cross one box*)

<input type="checkbox"/>	<b>Yes</b>	<input type="checkbox"/>	<b>No</b>	<b>If 'No', go to Q34</b>
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Q33b How often do you use cannabis at present? (*Please cross one box*)

Not at all	Less than once a month	At least once a month	At least once a week	Several times a week	Daily	Several times a day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q33c If you do use cannabis what reason are you most likely to use it for? (*Please cross one box*)

<input type="checkbox"/>	For recreational purposes
<input type="checkbox"/>	For physical pain relief
<input type="checkbox"/>	For mental health purposes
<input type="checkbox"/>	Other (please specify): _____

## WHĀNAU, FAMILY AND FRIENDS

Q34 Do you provide unpaid care for:

<i>(Please cross <u>one</u> box on each line)</i>	Yes, daily	Yes, weekly	Yes, occasionally	No, never	Not applicable (I have none)
Your mokopuna/grandchildren?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other people's whāngai/children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q35 I contribute my time and/or labour to volunteer activities: *(Please cross one box)*

Very often	Often	Sometimes	Rarely	Never
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q36 How many hours do you contribute to volunteer activities per week?

<input type="text"/>	<input type="text"/>	<b>Hours per week</b>
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Q37 Please indicate whether or not you belong to any of these types of organisations:

<i>(Please cross <u>one</u> box on each line)</i>	No	Yes
Sports clubs	<input type="checkbox"/>	<input type="checkbox"/>
Community or service organisations that help people	<input type="checkbox"/>	<input type="checkbox"/>
Political party, or professional association, or business organisation	<input type="checkbox"/>	<input type="checkbox"/>
A trade union	<input type="checkbox"/>	<input type="checkbox"/>
Religious, church, or other spiritual organisation	<input type="checkbox"/>	<input type="checkbox"/>
Hobby, leisure time, or arts association/group	<input type="checkbox"/>	<input type="checkbox"/>
Group that supports cultural traditions, knowledge or arts	<input type="checkbox"/>	<input type="checkbox"/>
Any other, club, lodge or similar organisation	<input type="checkbox"/>	<input type="checkbox"/>

Q38 Please indicate for each of the statements below, the extent to which they apply to the way you feel now.

<i>(Please cross <u>one</u> box on each line)</i>	Yes	More or less	No
I experience a general sense of emptiness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are plenty of people I can rely on when I have problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are many people I can trust completely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are enough people I feel close to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I miss having people around.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often feel rejected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q39 Think about your current relationships with friends, whānau/family members, co-workers, community members and so on. To what extent do you agree that each statement describes your current relationships with other people?

(Please cross one box on each line)

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
There are people I can depend on to help me if I really need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I do not have close personal relationships with other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no one I can turn to for guidance in times of stress.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are people who depend on me for help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are people who enjoy the same social activities I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other people do not view me as competent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel personally responsible for the well-being of another person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel part of a group of people who share my attitudes and beliefs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not think other people respect my skills and abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If something went wrong, no one would come to my assistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have close relationships that provide me with a sense of emotional security and well-being.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
There is someone I could talk to about important decisions in my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have relationships where my competence and skills are recognised.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no one who shares my interests and concerns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no one who really relies on me for their wellbeing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is a trustworthy person I could turn to for advice if I were having problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel a strong emotional bond with at least one other person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no one I can depend on for aid if I really need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no one I feel comfortable talking about problems with.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are people who admire my talents and abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I lack a feeling of intimacy with another person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no one who likes to do the things I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are people I can count on in an emergency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No one needs me to care for them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CAREGIVING

**These questions are about providing care for someone with a long-term illness, disability or frailty.  
By 'providing care', we mean practical assistance for at least 3 hours a week.**

Q40 Have you provided care for someone with a long-term illness, disability or frailty within the last 12 months?  
(Please cross one box)

**Yes**                       **No**                      **If 'No', go to Q63 on page 14**

Q41 In total, how many people with a long-term illness, disability or frailty do/did you regularly provide care for in the last 12 months? (Please cross one box)

**One person**

**Two people**

**More than two people**




Q42 Do you receive a *Supported Living Payment* for providing care for another person?

**Yes**                       **No**

**Please select the person you spent the most time caring for within the last 12 months. Tell us  
about that person and their circumstances at the time of care.**

Q43 Approximately how old is/was the person you care(d) for?

**Years**

Q44 How long have/had you been caring for this person?

**Years**                        **Months**

Q45 How often on average do (did) you provide this care or assistance? (Please cross one box)

**Every day**

**Several times per  
week**

**Once a week**

**Once every few  
weeks**

**Less often**






Q46 On average, how many hours per week did/do you care for this person?

**Hours per week**

Q47 Is the person you care(d) for your: (Please cross one box)

Spouse or partner

Mother-in-law or father-in-law

Mother or father

Brother or sister

Son or daughter

Friend

Other whanau member/relative

Other

Q48 Does/did the person you care(d) for: (Please cross one box)

Live with you

Live alone

Live with their whānau/family

Live in a nursing home or care facility

Live with their friends

Other

Q49 Does/did the person you care(d) for have any of the following major medical conditions or disabilities? *(Please cross all that apply)*

<input type="checkbox"/> Frailty in old age	<input type="checkbox"/> Stroke
<input type="checkbox"/> Intellectual disability	<input type="checkbox"/> Mental health problem (e.g., depression)
<input type="checkbox"/> Visual impairment	<input type="checkbox"/> Cancer
<input type="checkbox"/> Alzheimer's disease/dementia	<input type="checkbox"/> Respiratory condition (e.g., asthma, emphysema)
<input type="checkbox"/> Severe arthritis / rheumatism	<input type="checkbox"/> Other (please specify): _____

Q50 In your opinion, how severe are the symptoms of these major medical conditions or disabilities experienced by the person you care(d) for? *(Please cross one box)*

<b>None</b>	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>	<b>Very severe</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q51 Have there been occasions during the past 12 months when you provided help for the person you cared for in a crisis (e.g. an illness, accident, or family crisis) that has interfered with your other commitments?

<input type="checkbox"/> <b>Yes</b>	<input type="checkbox"/> <b>No</b>
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Q52 How many separate crises did you help with in the past 12 months?

<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>	<b>Number of crises in the past 12 months</b>
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Q53 In all, how many days in the past 12 months were you away from work because of these crises?

<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>	<b>Days in the past 12 months</b>	<b>OR</b>	<input style="width: 30px; height: 20px;" type="text"/>	<b>N/A</b>
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Q54 Has the person you cared for been admitted to hospital in the past 12 months? *(Please cross one box)*

<b>No</b>	<b>Yes</b>	<b>Yes, spent one night or more</b>	<b>Don't know</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q55 Do you provide help to the person you care(d) for with any of the following activities?

(Please cross one box on each line)

	Yes	No
Dressing (including putting on shoes and socks)	<input type="checkbox"/>	<input type="checkbox"/>
Eating (such as cutting up food)	<input type="checkbox"/>	<input type="checkbox"/>
Drinking	<input type="checkbox"/>	<input type="checkbox"/>
Using the toilet (including getting up and down)	<input type="checkbox"/>	<input type="checkbox"/>
Managing continence	<input type="checkbox"/>	<input type="checkbox"/>
Bathing and showering	<input type="checkbox"/>	<input type="checkbox"/>
Getting in and out of bed	<input type="checkbox"/>	<input type="checkbox"/>
Getting in and out of a chair	<input type="checkbox"/>	<input type="checkbox"/>
Personal grooming	<input type="checkbox"/>	<input type="checkbox"/>
Preparing meals	<input type="checkbox"/>	<input type="checkbox"/>
Shopping for groceries	<input type="checkbox"/>	<input type="checkbox"/>
Making telephone calls	<input type="checkbox"/>	<input type="checkbox"/>
Managing their money (e.g., paying bills, keeping track of expenses)	<input type="checkbox"/>	<input type="checkbox"/>
Housekeeping	<input type="checkbox"/>	<input type="checkbox"/>
Laundry	<input type="checkbox"/>	<input type="checkbox"/>
Transportation	<input type="checkbox"/>	<input type="checkbox"/>
Mobility (walking, wheelchair or stairs)	<input type="checkbox"/>	<input type="checkbox"/>
Taking medications	<input type="checkbox"/>	<input type="checkbox"/>
Recreation or hobbies	<input type="checkbox"/>	<input type="checkbox"/>

Q56 Do you receive help in providing this care from any of the following?

(Please cross one box on each line)

	Yes	Help is needed but not provided	Help is not needed	N/A
Your children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your siblings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your spouse/partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other whānau/family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publicly funded services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support agencies you or your family pay for	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voluntary support agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q57 If the person you care for **does not live with you**, please indicate the time it usually takes you to travel from your home and your work to the residence of the person you care for:

(a) Time it usually takes you to travel from your home to the person's residence?

<input type="text"/>	<b>Hours</b>	<input type="text"/>	<input type="text"/>	<b>Minutes</b>
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(b) Time from your workplace to the person's residence.

<input type="text"/>	<b>Hours</b>	<input type="text"/>	<input type="text"/>	<b>Minutes</b>	<b>OR</b>	<input type="checkbox"/>	<b>I am not in the work force (go to Q59)</b>
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Q58 In the last 12 months, please indicate if you used any of the following methods to provide help and support to the person you care for:

*(Please cross one box on each line)*

	Never	Once	More than once	No, I do not have access to this
Taken leave without pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taken annual leave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Used your own sick leave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taken "domestic" leave	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taken time in lieu, or worked flexitime in consultation with supervisor/colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paid someone else to provide care which you would have preferred to provide yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arranged with another whānau/family member to provide the care you normally provide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Made phone calls or provided care yourself in work time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced hours of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formalised care leave arrangement with employer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working more from home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexible work hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changed work role or tasks to be less demanding (temporarily)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Postponement of certain tasks/activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q59 Do you have a good relationship with the person you care for? *(Please cross one box)*

<b>Never</b>	<b>Sometimes</b>	<b>Often</b>	<b>Always</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q60 Overall, what is the effect on your life of providing care? My life is: *(Please cross one box)*

<b>A lot better for it</b>	<b>A little better for it</b>	<b>Neither better nor worse for it</b>	<b>A little worse for it</b>	<b>A lot worse for it</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q61 In the past 12 months, has assisting someone caused you:

*(Please cross one box on each line)*

	<b>No</b>	<b>Yes</b>
To reduce the time spent on social activities?	<input type="checkbox"/>	<input type="checkbox"/>
To cancel holiday plans?	<input type="checkbox"/>	<input type="checkbox"/>
To postpone plans to enrol in education or training programme?	<input type="checkbox"/>	<input type="checkbox"/>
To move in with him or her?	<input type="checkbox"/>	<input type="checkbox"/>
To turn down a job offer or a promotion?	<input type="checkbox"/>	<input type="checkbox"/>
To have extra expenses?	<input type="checkbox"/>	<input type="checkbox"/>

Q62 In the past 12 months, has assisting someone:

*(Please cross one box on each line)*

	<b>No</b>	<b>Yes</b>
Caused your health to suffer?	<input type="checkbox"/>	<input type="checkbox"/>
Caused you to miss full days of work?	<input type="checkbox"/>	<input type="checkbox"/>
Caused you to reduce your hours of work?	<input type="checkbox"/>	<input type="checkbox"/>
Caused you to quit your job?	<input type="checkbox"/>	<input type="checkbox"/>
Caused you to lose your job?	<input type="checkbox"/>	<input type="checkbox"/>
Caused you to spend less time with your tamariki/children?	<input type="checkbox"/>	<input type="checkbox"/>
Caused you to spend less time with spouse/partner?	<input type="checkbox"/>	<input type="checkbox"/>

## WHERE YOU LIVE

Q63 Which one of the following options best describes the type of residence that you currently live in (your primary residence)? *(Please cross one box)*

<input type="checkbox"/> House or townhouse (detached or 'stand alone')
<input type="checkbox"/> House, townhouse, unit or apartment (joined to one or more other houses, townhouses, units or apartments)
<input type="checkbox"/> Unit, villa or apartment in Retirement Village
<input type="checkbox"/> Moveable dwelling (e.g., caravan, motor home, boat, tent)
<input type="checkbox"/> Rest home or continuing care hospital
<input type="checkbox"/> Other (Please specify): _____

Q64 In terms of the ownership arrangements your primary residence is: *(Please cross one box)*

<input type="checkbox"/>	1	Owned by yourself and/or spouse/partner <b>with a mortgage</b>
<input type="checkbox"/>	2	Owned by yourself and/or spouse/partner <b>without a mortgage</b>
<input type="checkbox"/>	3	Owned by whānau/family
<input type="checkbox"/>	4	Owned by a whānau/family trust
<input type="checkbox"/>	5	Private rental
<input type="checkbox"/>	6	State, Council or Kaumātua housing
<input type="checkbox"/>	7	Licence to occupy
<input type="checkbox"/>	8	Other (Please specify):

Q65 How long have you lived in your present home?

<input type="text"/>	<input type="text"/>	<b>Years</b>	<input type="text"/>	<input type="text"/>	<b>Months</b>
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Q66 Please rate your level of agreement to each of these statements in relation to your present home.

<i>(Please cross <u>one</u> box on each line)</i>	<b>No, definitely not</b>		<b>Neutral</b>		<b>Yes, definitely</b>	
I am satisfied with my house.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am satisfied with my neighbourhood.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am happy with the living conditions of my house.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My house enables me to see friends and whānau/family as often as I like.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My house enables me to participate in community activities as often as I like.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My house supports all my daily activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My home does not meet all my needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to keep my house warm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My house is difficult for me to clean.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can get to the shops easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am close enough to any help I need.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am close enough to important facilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel safe at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel safe in my neighbourhood.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The neighbourhood is peaceful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have peace of mind at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q67 How would you describe the condition of your current residence? *(Please cross one box)*

No repairs or maintenance needed right now	Minor maintenance needed	Some repairs and maintenance needed	Immediate repairs and maintenance needed	Immediate and extensive repairs and maintenance needed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q68 Does your residence have a problem with dampness or mould? *(Please cross one box)*

No	Minor problem	Moderate problem	Major problem
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q69 In winter, is your current residence colder than you would like? *(Please cross one box)*

Yes - always	Yes - often	Yes - sometimes	No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q70 Please rate your level of agreement to each of these statements in relation to your present neighbourhood:

<i>(Please cross <u>one</u> box on each line)</i>	Strongly disagree		Neutral		Strongly Agree
People in this area would do something if a house was being broken into.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In this area people would stop children if they saw them vandalising things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People would be afraid to walk alone after dark.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People in this area will take advantage of you.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you were in trouble, there are lots of people in this area who would help you.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most people in this area can be trusted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## WORK AND RETIREMENT

Q71 Since the COVID-19 pandemic was declared by the World Health Organisation (WHO) on March 11, 2020:

<i>(Please cross <u>one</u> box on each line)</i>	Yes	No
Have you engaged in any paid employment?	<input type="checkbox"/>	<input type="checkbox"/>
Have you been considered an essential worker?	<input type="checkbox"/>	<input type="checkbox"/>
Have you worked from home?	<input type="checkbox"/>	<input type="checkbox"/>
Has your hourly wage or salary been reduced?	<input type="checkbox"/>	<input type="checkbox"/>
Have your hours of paid employment been reduced?	<input type="checkbox"/>	<input type="checkbox"/>
Have you lost or left your job?	<input type="checkbox"/>	<input type="checkbox"/>
Have you been offered skills training from your employer to support how you do your job during the COVID-19 pandemic?	<input type="checkbox"/>	<input type="checkbox"/>

Q72 Has/will the COVID-19 pandemic be a factor in your decision to retire (i.e., earlier or later than you had previously planned)?

**Yes, plan to retire *earlier***     **No change to plans**     **Yes, plan to retire *later***

Q73 Have you received any hardship assistance as a result of the COVID-19 pandemic?

(Please cross one box on each line)

**No**                      **Yes**

Government assistance to support your business (if applicable)    

Government assistance such as welfare benefits    

Material assistance from non-government organisations, such as food banks    

Assistance from lenders, such as a mortgage holiday from your bank    

A Kiwisaver hardship withdrawal    

Q74 If you are retired, at what age did you retire?

**Age at retirement**                       **I am not retired**

Q75 How many hours do you currently work in paid employment per week?

**Hours**

Q76 Which of the following best describes your **preferred** work status? (i.e., what you would like to be doing)  
(Please cross one box)

Full-time paid work, for an employer  <sub>1</sub>

Part-time paid work, for an employer  <sub>2</sub>

Full-time self-employed paid employment  <sub>3</sub>

Part-time self-employed paid employment  <sub>4</sub>

Flexible work schedule negotiated with employer  <sub>5</sub>

Project or contract work (short term and full-time)  <sub>6</sub>

Project or contract work (short term and part-time)  <sub>7</sub>

Fully retired, no paid work  <sub>8</sub>

Full-time homemaker  <sub>9</sub>

Full-time student  <sub>10</sub>

Other (Please specify):  <sub>11</sub>

Q77 Which of the following best describes your **current** work status? *(Please cross one box in this column)*

Full-time paid work, for an employer	<input type="checkbox"/>	<b>go to Q79</b>
Part-time paid work, for an employer	<input type="checkbox"/>	
Full-time self-employed paid employment	<input type="checkbox"/>	
Part-time self-employed paid employment	<input type="checkbox"/>	
Flexible work schedule negotiated with employer	<input type="checkbox"/>	
Project or contract work (short term and full time)	<input type="checkbox"/>	
Project or contract work (short term and part time)	<input type="checkbox"/>	
Fully retired, no paid work	<input type="checkbox"/>	<b>go to Q107</b>
Full-time homemaker	<input type="checkbox"/>	
Full-time student	<input type="checkbox"/>	
Unable to work due to health or disability issue	<input type="checkbox"/>	
Unemployed and seeking work	<input type="checkbox"/>	<b>go to Q78</b>
Other (Please specify):	<input type="checkbox"/>	<b>go to Q107</b>

Q78 Please indicate how much you agree with the following statements about your own job-search process.

<i>(Please cross <u>one</u> box on each line)</i>	<b>Strongly disagree</b>				<b>Strongly agree</b>
I have had one or more job applications rejected based on my age.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have omitted or modified my age/job history in an application out of concern that I would be discriminated against based on my age.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Thank you. If you were instructed to go to Q78 from Q77, please now go to Q107.**

Q79 Which of the following best describes your current occupation? *(Please cross one box)*

<input type="checkbox"/> Labourer (e.g., cleaner, food packer, farm worker)
<input type="checkbox"/> Machinery operator/driver (e.g., machine operator, store person)
<input type="checkbox"/> Sales worker (e.g., insurance agent, sales assistant, cashier)
<input type="checkbox"/> Clerical/administrative worker (e.g., administrator, personal assistant)
<input type="checkbox"/> Community or personal service worker (e.g., teacher aide, armed forces, hospitality worker, carer)
<input type="checkbox"/> Technician/trades worker (e.g., engineer, carpenter, hairdresser)
<input type="checkbox"/> Professional (e.g., accountant, doctor, nurse, teacher)
<input type="checkbox"/> Manager (e.g., general manager, farm manager)
<input type="checkbox"/> Other (Please specify): _____

Q80 How long have you worked for your current employer?

<input type="text"/>	<input type="text"/>	<b>Years</b>	<input type="text"/>	<input type="text"/>	<b>Months</b>	<b>OR</b>	<input type="checkbox"/>	<b>N/A</b>
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Q81 If you are self-employed, how long have you been self-employed?

<input type="text"/>	<input type="text"/>	<b>Years</b>	<input type="text"/>	<input type="text"/>	<b>Months</b>
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Q82 Which of the following best describes your current work?

*(Please cross one box on each line)*

	<b>Disagree</b>	<b>Somewhat disagree</b>	<b>Neither agree nor disagree</b>	<b>Somewhat agree</b>	<b>Agree</b>	<b>N/A</b>
I feel fairly well satisfied with my present job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work should only be a small part of one's life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am satisfied with the progress I have made toward meeting my overall career goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find my job to be very stressful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My job makes it difficult to be the kind of spouse or parent I'd like to be	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q83 Assume that your ability to work at your best has a value of 10 points. How many points would you give your current work ability? (0 means that you cannot currently work at all) *(Please cross one box)*

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q84 How do you rate your current work ability with respect to the **physical** demands of your work? *(Please cross one box)*

<b>Very good</b>	<b>Rather good</b>	<b>Moderate</b>	<b>Rather poor</b>	<b>Very poor</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q85 How do you rate your current work ability with respect to the **mental** demands of your work? *(Please cross one box)*

<b>Very good</b>	<b>Rather good</b>	<b>Moderate</b>	<b>Rather poor</b>	<b>Very poor</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**The following questions relate to health and work impairment due to diseases**

Q86 Is any illness or injury a hindrance to your current job? *(cross more than one alternative if needed)*

There is no hindrance/I have no diseases.	<input type="checkbox"/>
I am able to do my job, but it causes some symptoms.	<input type="checkbox"/>
I must <b>sometimes</b> slow down my work pace or change my work methods.	<input type="checkbox"/>
I must <b>often</b> slow down my work pace or change my work methods.	<input type="checkbox"/>
Because of my disease, I feel I am able to do only part time work.	<input type="checkbox"/>
In my opinion, I am entirely unable to work.	<input type="checkbox"/>

Q87 How many whole days have you been off work because of a health problem (disease or health care or for examination) during the past year (12 months)? *(Please cross one box)*

None at all	<input type="checkbox"/>
At the most, 9 days	<input type="checkbox"/>
10 – 24 days	<input type="checkbox"/>
25 – 99 days	<input type="checkbox"/>
100 – 365 days	<input type="checkbox"/>

Q88 Do you believe that – from the standpoint of your health – you will be able to do your current job **two years from now?** *(Please cross one box)*

<b>Unlikely</b>	<b>Not certain</b>	<b>Relatively certain</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q89 Have you recently been able to enjoy your regular daily activities? *(Please cross one box)*

<b>Often</b>	<b>Rather often</b>	<b>Sometimes</b>	<b>Rather seldom</b>	<b>Never</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q90 Have you recently been active and alert? *(Please cross one box)*

<b>Often</b>	<b>Rather often</b>	<b>Sometimes</b>	<b>Rather seldom</b>	<b>Never</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q91 Have you recently felt yourself to be full of hope for the future? *(Please cross one box)*

<b>Continuously</b>	<b>Rather often</b>	<b>Sometimes</b>	<b>Rather seldom</b>	<b>Never</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q92 Please indicate how much you agree or disagree with the following statements.  
*(Please cross one box on each line)*

	<b>Strongly disagree</b>					<b>Strongly agree</b>
I value being a member of my age group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My age group membership is important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My age group is central to who I am as a person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a strong sense of belonging to my own age group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I identify with being a member of my age group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q93 Please indicate how much you agree or disagree with the following statements.  
*(Please cross one box on each line)*

	<b>Strongly disagree</b>				<b>Strongly agree</b>	<b>N/A</b>
Some people in my workplace feel I have less ability because of my age.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Younger people find it easier to work at my workplace than older people do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My manager expects me to do poorly because of my age.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At my workplace, people my age often face biased evaluations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

My age does not affect people's perception of my ability.

Q94 Please indicate to what degree you agree with each item.

<i>(Please cross <u>one</u> box on each line)</i>	<b>Totally disagree</b>				<b>Totally agree</b>
Older workers are passed over or left out in cases of promotion or internal recruitment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Older workers do not have equal opportunities for training during work time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Younger workers are preferred when new equipment, activities or working methods are introduced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Older workers less often take part in development appraisals with their superior than younger workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Older workers have less wage increases than younger workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Older workers are not expected to take part in change processes and new working methods to the same degree as their younger peers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q95 The following statements refer to your current occupation. Please indicate the extent to which you disagree or agree with each statement.

<i>(Please cross <u>one</u> box on each line)</i>	<b>Strongly disagree</b>				<b>Strongly agree</b>	<b>N/A</b>
I have constant time pressures due to a heavy work load.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have many interruptions and disturbances while performing my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Over the past few years, my job has become more and more demanding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I receive the respect I deserve from my superior or a respective relevant person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My job promotion prospects are poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have experienced or I expect to experience an undesirable change in my work situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My job security is poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Considering all my efforts and achievements, I receive the respect and prestige I deserve at work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Strongly disagree</b>				<b>Strongly agree</b>	<b>N/A</b>
Considering all my efforts and achievements, my job promotion prospects are adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Considering all my efforts and achievements, my salary/income is adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get easily overwhelmed by time pressures at work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As soon as I get up in the morning I start thinking about work problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When I get home, I can easily relax and 'switch off' work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People close to me say I sacrifice too much for my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work rarely lets me go, it is still on my mind when I go to bed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If I postpone something that I was supposed to do today, I'll have trouble sleeping at night.

Q96 The following questions are about flexibility in the work place. Do you have access to the following options at your work place? **If yes**, do you take advantage of these options?

<i>(Please cross <u>one</u> box on each line)</i>	<b>Yes, I have access to this, and <u>I do this</u></b>	<b>Yes, I have access to this, but <u>I do not</u> <u>do this</u></b>	<b>No, I do not have access to this</b>	<b>N/A</b>
If you do shift work, can you choose which shift you work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Choose a work schedule that varies from the typical schedule at your worksite.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control when you take breaks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have input into the amount of overtime hours you work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have input into the number of hours you work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take extra "unpaid" vacation days.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take paid time off to volunteer in the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally request changes in starting and quitting times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequently request changes in starting and quitting times, such as on a daily basis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce your work hours and work on a part-time basis while remaining in the same position or at the same level.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Structure jobs as a job share with another person where both receive their "fair share" of compensation and benefits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compress the work week by working longer hours on fewer days for at least part of the year.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take sabbaticals or career breaks. That is, take leave, paid or unpaid, of one or more months and return to a comparable job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take paid or unpaid time for education or training to improve job skill.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take a paid leave for care giving or other personal or whānau/family responsibilities (e.g., parental or elder caregiving responsibilities).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work part-year; that is work for a reduced amount of time on an annual basis (e.g., work full-time during the autumn, winter, and spring and then take the summer off).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work for part of the year at one worksite, and then part of the year at another worksite.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work from an off-site location (such as home) for part (or all) of the regular work week, possibly linked by telephone and computer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transfer to a job with reduced responsibilities and reduced pay, if you want to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Phase into retirement by working reduced hours over a period of time prior to full retirement.

Q97 To what extent do you have access to the flexible work options you need to fulfil your work and personal needs? *(Please cross one box)*

Not at all	To a limited extent	To a moderate extent	To a great extent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q98 Please indicate how much you agree or disagree with the following statements about your workplace.

*(Please cross one box on each line)*

	Strongly disagree						Strongly agree	N/A
I am very happy being a member of this organisation/business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy discussing about my organisation/business with people outside it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I really feel as if this organisation/businesses' problems are my own.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not feel like 'part of the family' at my organisation/business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not feel 'emotionally attached' to this organisation/business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This organisation/business has a great deal of personal meaning for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think that I could easily become as attached to another organisation/business as I am to this one.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q99 The following statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have had this feeling, indicate how often you felt it by indicating the option that best describes how frequently you feel that way. If you have never had this feeling, indicate "Never".

*(Please cross one box on each line)*

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
At my work, I feel that I am bursting with energy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At my job, I feel strong and vigorous.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am enthusiastic about my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My job inspires me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When I get up in the morning, I feel like going to work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel happy when I am working intensely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am proud of the work that I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am immersed in my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get carried away when I'm working.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q100 The following questions ask about opportunities for training available to you.

*(Please cross one box on each line)*

	Yes	No	N/A
Have you received training from your <u>employer/business</u> in the past 12 months?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been offered training by your <u>employer/business</u> , but not trained in the past 12 months?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever been offered training by your <u>employer/business</u> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q101 Please rate your level of agreement to each of these statements in relation to training opportunities in your present employment situation:

*(Please cross one box on each line)*

	Strongly disagree			Strongly agree		
I try to learn as much as I can from training programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I tend to learn more from training programmes than most people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am usually motivated to learn the skills emphasised in training programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to exert considerable effort in training programmes in order to improve my skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe I can improve my skills by participating in training programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe I can learn the material presented in most training programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation in training programmes is of little use to me because I have all the knowledge and skills I need to successfully perform my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to invest effort to improve skills and competencies related to my current job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to invest effort to improve skills and competencies in order to prepare myself for a promotion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q102 How often do you consider leaving your current job? *(Please cross one box)*

Never						Always
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q103 What is the likelihood that you will be looking for a new job within the next year? *(Please cross one box)*

Low						High
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q104 The following section contains questions that ask you to describe your thoughts and feelings toward retirement. It is important that you respond to a question even if it appears similar to others

*(Please cross one box on each line)*

	Disagree strongly					Agree strongly				
I would like to retire in the near future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I expect to retire in the near future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q105 Please indicate how much you agree or disagree with the following statement: *(Please cross one box)*

	Strongly disagree	Somewhat disagree	Moderately disagree	Neither agree nor disagree	Moderately agree	Somewhat agree	Strongly agree
I can financially afford to retire now	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q106 At what age do you intend to permanently retire from paid work?

<input type="text"/>	<input type="text"/>	Years of age	<b>OR</b>	<input type="checkbox"/>	I never intend to retire from paid work
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## YOUR FINANCIAL WELLBEING

**In this section we ask about your financial circumstances. Please be assured that your answers to these questions are completely confidential.**

Please see notes at the back of the questionnaire to help work out your income, if needed.

Q107a From all sources of income, what do you expect your annual personal income **before tax** to be this financial year?  
*(Please cross one box)*

Q107b From all sources of income, what do you expect your annual household income **before tax** to be this financial year?  
*(Please cross one box)*

<input type="checkbox"/>	loss
<input type="checkbox"/>	zero income
<input type="checkbox"/>	\$1 - \$5,000
<input type="checkbox"/>	\$5,001 - \$10,000
<input type="checkbox"/>	\$10,001 - \$15,000
<input type="checkbox"/>	\$15,001 - \$20,000
<input type="checkbox"/>	\$20,001 - \$25,000
<input type="checkbox"/>	\$25,001 - \$30,000
<input type="checkbox"/>	\$30,001 - \$35,000
<input type="checkbox"/>	\$35,001 - \$40,000
<input type="checkbox"/>	\$40,001 - \$50,000
<input type="checkbox"/>	\$50,001 - \$60,000
<input type="checkbox"/>	\$60,001 - \$70,000
<input type="checkbox"/>	\$70,001 - \$100,000
<input type="checkbox"/>	\$100,001 - \$150,000
<input type="checkbox"/>	\$150,001 - \$200,000
<input type="checkbox"/>	\$200,001 or more

<input type="checkbox"/>	loss
<input type="checkbox"/>	zero income
<input type="checkbox"/>	\$1 - \$5,000
<input type="checkbox"/>	\$5,001 - \$10,000
<input type="checkbox"/>	\$10,001 - \$15,000
<input type="checkbox"/>	\$15,001 - \$20,000
<input type="checkbox"/>	\$20,001 - \$25,000
<input type="checkbox"/>	\$25,001 - \$30,000
<input type="checkbox"/>	\$30,001 - \$35,000
<input type="checkbox"/>	\$35,001 - \$40,000
<input type="checkbox"/>	\$40,001 - \$50,000
<input type="checkbox"/>	\$50,001 - \$60,000
<input type="checkbox"/>	\$60,001 - \$70,000
<input type="checkbox"/>	\$70,001 - \$100,000
<input type="checkbox"/>	\$100,001 - \$150,000
<input type="checkbox"/>	\$150,001 - \$200,000
<input type="checkbox"/>	\$200,001 or more

Q108 Do you currently receive New Zealand Superannuation? *(Please cross one box)*

**Single rate**                       **Couple rate**                       **No**

Q109 Do you currently receive a Veteran's Pension? *(Please cross one box)*

**Single rate**                       **Couple rate**                       **No**

Q110 Other than New Zealand Superannuation, please indicate what sources of financial support you and your partner (if applicable) currently have which will support you in your retirement years:

*(Please cross all that apply)*

	<b>Yourself</b>	<b>Your partner (if applicable)</b>
None	<input type="checkbox"/>	<input type="checkbox"/>
Kiwisaver	<input type="checkbox"/>	<input type="checkbox"/>
Other employer sponsored superannuation	<input type="checkbox"/>	<input type="checkbox"/>
Overseas superannuation or pension	<input type="checkbox"/>	<input type="checkbox"/>
Other pension or superannuation	<input type="checkbox"/>	<input type="checkbox"/>
Personal savings	<input type="checkbox"/>	<input type="checkbox"/>
Inheritance or trust fund	<input type="checkbox"/>	<input type="checkbox"/>
Iwi dividends	<input type="checkbox"/>	<input type="checkbox"/>
Rental income (from property you own)	<input type="checkbox"/>	<input type="checkbox"/>
Other personal investments	<input type="checkbox"/>	<input type="checkbox"/>

Q111 For the following questions, please indicate whether or not you have (or have access to) the item:

*(Please cross one box on each line)*

	<b>Yes, I have it</b>	<b>No, because I don't want it</b>	<b>No, because of the cost</b>	<b>No, for some other reason</b>
Telephone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Washing machine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At least two pair of good shoes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suitable clothes for important or special occasions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home contents insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enough room for whānau/family to stay the night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q112 For the following questions, please indicate whether or not you do the activity:

<i>(Please cross <u>one</u> box on each line)</i>	<b>Yes, I do it</b>	<b>No, because I don't want to</b>	<b>No, because of the cost</b>	<b>No, for some other reason</b>
Keep the main rooms of your home adequately heated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Give presents to whānau/family or friends on birthdays, Christmas or other special occasions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visit the hairdresser at least once every three months	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have holidays away from home for at least a week every year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a holiday overseas at least every three years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a night out for entertainment or socialising at least once a fortnight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have whānau/family or friends over for a meal at least once every few months	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q113 The following are a list of things some people do to help keep costs down. In the last 12 months, have you done any of these things?

<i>(Please cross <u>one</u> box on each line)</i>	<b>Not at all</b>	<b>A little</b>	<b>A lot</b>
Gone without or cut back on fresh fruit and vegetables to help keep down costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continued wearing clothing that was worn out because you couldn't afford a replacement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put off buying clothes for as long as possible to help keep down costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stayed in bed longer to save on heating costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Postponed or put off visits to the doctor to help keep down costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NOT picked up a prescription to help keep down costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spent less time on hobbies than you would like to help keep down costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gone without or cut back on trips to the shops or other local places to help keep down costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**The following questions are about your material standard of living – the things that money can buy. Your material standard of living does NOT include your capacity to enjoy life. You should NOT take your health into account.**

Q114 Generally, how would you rate your material standard of living? *(Please cross one box)*

<b>High</b>	<b>Fairly high</b>	<b>Medium</b>	<b>Fairly low</b>	<b>Low</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q115 Generally, how satisfied are you with your current material standard of living? *(Please cross one box)*

<b>Very satisfied</b>	<b>Satisfied</b>	<b>Neither satisfied nor dissatisfied</b>	<b>Dissatisfied</b>	<b>Very dissatisfied</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q116 How well does your total income meet your everyday needs for such things as accommodation, food, clothing and other necessities? *(Please cross one box)*

<b>Not enough</b>	<b>Just enough</b>	<b>Enough</b>	<b>More than enough</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q117 Below are statements that people have made about their standard of living. Please indicate how true these statements are for you.

*(Please cross one box on each line)*

	<b>Not true for me at all</b>				<b>Definitely true for me</b>
I can afford to go to a medical specialist if I need to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to visit people whenever I wish.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to give to others as much as I want.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to do all the things I love.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I expect a future without money problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My choices are limited by money.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can afford to go to a dentist if I need to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q118 To what degree has the COVID-19 pandemic had a negative impact on your economic wellbeing?  
*(Please cross one box)*

<b>Not at all</b>	<b>A little bit</b>	<b>Moderately</b>	<b>Quite a bit</b>	<b>Extremely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**We are interested in hearing about your experiences of the COVID-19 pandemic. There is space on the back page of the survey to write about these experiences if you wish.**

## YOUR PERSONAL SITUATION

Q119 What gender do you identify as? *(Please cross one box)*

<input type="checkbox"/>	<input type="checkbox"/> 1 Tāne/Male
<input type="checkbox"/>	<input type="checkbox"/> 2 Wāhine/Female
<input type="checkbox"/>	<input type="checkbox"/> 3 Gender diverse (please specify)

Q120 Do you identify as: *(Please cross one box)*

<input type="checkbox"/> Heterosexual/Straight	<input type="checkbox"/> Gay/Lesbian
<input type="checkbox"/> Bisexual	<input type="checkbox"/> Other sexual identity
<input type="checkbox"/> Uncertain	<input type="checkbox"/> Prefer not to answer

Q121 When were you born?

<b>Day:</b>	<input type="text"/>	<input type="text"/>	<b>Month:</b>	<input type="text"/>	<input type="text"/>	<b>Year:</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Q122 Which one of these statements is true about you? (Please answer for your **current** marriage, partnership or situation). (Please cross one box)

<input type="checkbox"/> I am married.	<input type="checkbox"/> I am a widow or widower.
<input type="checkbox"/> I am in a civil union/de facto/partnered relationship.	<input type="checkbox"/> I am single.
<input type="checkbox"/> I am divorced or permanently separated from my legal husband or wife.	

Q123 What is your highest educational qualification? (Please cross one box)

<input type="checkbox"/> No qualifications
<input type="checkbox"/> Secondary school qualifications (e.g., School Certificate, University Entrance, NCEA)
<input type="checkbox"/> Post-secondary certificate, diploma, or trade diploma
<input type="checkbox"/> University degree

Q124 Please cross as many options as you need to indicate all the people who live in the same household as you. Please also put in the number of people. If you live alone, please cross the option at the top of the table.

(Please cross all that apply)

	Yes	Number 18yrs or over	Number under 18yrs
I live alone	<input type="checkbox"/>		
My spouse, partner or de facto, boyfriend or girlfriend	<input type="checkbox"/>		
My parent(s) and/or parent(s)-in-law	<input type="checkbox"/>		
My son(s) and/or daughter(s)	<input type="checkbox"/>		
My sister(s) and/or brother(s)	<input type="checkbox"/>		
My flatmate(s)	<input type="checkbox"/>		
My mokopuna/grandchild(ren)	<input type="checkbox"/>		
My friend(s)	<input type="checkbox"/>		
My boarder(s)	<input type="checkbox"/>		
Others (Please specify):	<input type="checkbox"/>		

Q125 Please indicate below which ethnic group or groups you belong to: (Please cross all that apply)

<input type="checkbox"/> Māori	<input type="checkbox"/> Niuean
<input type="checkbox"/> New Zealand European	<input type="checkbox"/> Chinese
<input type="checkbox"/> Samoan	<input type="checkbox"/> Indian
<input type="checkbox"/> Cook Island Māori	<input type="checkbox"/> Tongan
<input type="checkbox"/> Other (please specify e.g., Dutch, Japanese, Tokelauan):	

Q126a Which country were you born in? (Please cross one box)

<input type="checkbox"/> New Zealand	<input type="checkbox"/> India
<input type="checkbox"/> Australia	<input type="checkbox"/> South Africa
<input type="checkbox"/> England	<input type="checkbox"/> Samoa
<input type="checkbox"/> People's Republic of China	<input type="checkbox"/> Cook Islands
<input type="checkbox"/> Other (print the name of the country): _____	

Q126b If you were **not** born in New Zealand, please indicate below the approximate date that you first arrived to live in New Zealand.

<input type="text"/>	<input type="text"/>	<b>Month (e.g. 04)</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<b>Year (e.g. 1985)</b>
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Q127 What term best describes how you generally identify yourself when asked what your religion or belief system is? (Please cross one box)

<input type="checkbox"/> Rātana	<input type="checkbox"/> Islam	<input type="checkbox"/> Hinduism
<input type="checkbox"/> Ringatū	<input type="checkbox"/> Sikh	<input type="checkbox"/> Judaism
<input type="checkbox"/> Christianity	<input type="checkbox"/> Buddhism	<input type="checkbox"/> Taoism
<input type="checkbox"/> Agnostic	<input type="checkbox"/> Atheist	
<input type="checkbox"/> Other (please specify): _____		

Q128 How often do you take part in religious services? (Please cross one box)

<b>More than once a week</b>	<b>Once a week</b>	<b>One or three times a month</b>	<b>A few times a year</b>	<b>Less often</b>	<b>Never</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q129 How often do you pray? (Please cross one box)

<b>Several times a day</b>	<b>Once a day</b>	<b>More than once a week</b>	<b>Once a week</b>	<b>One to three times a month</b>	<b>A few times a year</b>	<b>Less often</b>	<b>Never</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q130 How often do you meditate? (Please cross one box)

<b>Several times a day</b>	<b>Once a day</b>	<b>More than once a week</b>	<b>Once a week</b>	<b>One to three times a month</b>	<b>A few times a year</b>	<b>Less often</b>	<b>Never</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q131 How important is it to take part in religious services? (Please cross one box)

<b>Very much so</b>	<b>Quite a bit</b>	<b>Moderately</b>	<b>Not very much</b>	<b>Not at all</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q132 How important is personal prayer for you? *(Please cross one box)*

<b>Very much so</b>	<b>Quite a bit</b>	<b>Moderately</b>	<b>Not very much</b>	<b>Not at all</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q133 How important is meditation for you? *(Please cross one box)*

<b>Very much so</b>	<b>Quite a bit</b>	<b>Moderately</b>	<b>Not very much</b>	<b>Not at all</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q134 To what extent does any connection to a spiritual being help you to get through hard times? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q135 To what extent does faith give you comfort in daily life? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q136 To what extent do you feel your life has a purpose? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q137 How much does spiritual strength help you to live better? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q138 To what extent do you have inner peace? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q139 To what extent are you hopeful about your life? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q140 How satisfied are you that you have a balance between mind, body and soul? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q141 To what extent are you able to experience awe? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q142 To what extent do you feel life to be meaningful? *(Please cross one box)*

<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Mostly</b>	<b>Completely</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**If you have Māori ancestry, continue with Q143,**

**if you DO NOT, please turn to page 33.**

Q143 How would you rate your overall ability with Māori language? *(Please cross one box)*

Excellent	Very good	Good	Fair	Poor	None
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q144 The scale has been designed so that you will probably find that you agree with some statements but disagree with others to varying degrees. There are no right or wrong answers.

*(Please cross one box on each line)*

	Strongly disagree						Strongly agree
I reckon being Māori is awesome.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I love that I am Māori.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being Māori is NOT important to who I am as a person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to kōrero (speak) Māori whenever I can.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know how to behave the right way when I am on a marae.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a clear sense of my Māori heritage and what it means for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that my taha wairua (my spiritual side) is an important part of my Māori identity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can sometimes feel my Māori ancestors watching over me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have never felt a spiritual connection with my ancestors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Strongly disagree						Strongly agree
I stand up for Māori rights.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
What the European settlers did to Māori in the past has nothing to do with me personally. I wasn't there and I don't think it affects me at all.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think that Māori have been wronged in the past, and that we should stand up for what is ours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think it is easy to tell that I am Māori just by looking at me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People would never know that I am of Māori descent just by looking at me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think it is hard to tell that I am Māori just by looking at me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If a problem arises that people cannot solve by themselves, the whānau as a whole will be able to solve it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People in my whānau have always been able to discuss problems that affect everyone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whenever my whānau undertake a project together, we know that we will all work hard until it is accomplished.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## GUIDE NOTES

### Why do you want to know my income?

Information such as income are used to help determine how well respondents to the New Zealand Health, Work and Retirement survey represent the general New Zealand population and whether income is a feature in ageing well. All of the answers you give are kept confidential.

### How do I work out my annual personal/household income?

Remember:

- If you and your spouse/partner earn income jointly, only include your part of that income when reporting your personal income.
- Count any payments that are taken out of your income **before** you get it, such as repayments of student loans, union fees, fines or child support.
- DON'T count loans (including student loans), inheritances, sale of household or business assets, lottery wins, matrimonial / civil union / de facto property settlements or one-off lump sum payments.
- DON'T count money given by members of the same household to each other. For example, pocket money given to children, or money given for housekeeping expenses by a flatmate.

**Calculating annual income before tax:** If you know your weekly or fortnightly income **after tax**, use this table to work out your annual income **before tax**.

After tax weekly income\$	After tax fortnightly income \$	Before tax annual income \$
up to 86	up to 172	21 – 5,000
87 – 172	173 – 343	5,001 – 10,000
173 – 256	344 – 512	10,001 – 15,000
257 – 335	513 – 671	15,001 – 20,000
336 – 414	672 – 829	20,001 – 25,000
415 – 493	830 – 987	25,001 – 30,000
494 – 573	988 – 1,145	30,001 – 35,000
574 – 652	1,146 – 1,303	35,001 – 40,000
653 – 805	1,304 – 1,610	40,001 – 50,000
806 – 939	1,611 – 1,879	50,001 – 60,000
940 – 1,074	1,880 – 2,147	60,001 – 70,000
1,075 – 1,459	2,148 – 2,918	70,001 – 100,000
1,460 – 2,102	2,919 – 4,203	100,001 – 150,000
2,103+	4,204+	150,001+

**Standard NZ Super:** these are the approximate standard **before tax** rates for NZ Super.

	Fortnightly before tax	Annual before tax
Single, living alone	\$981.46	\$25,517.96
Single, sharing accommodation	\$902.58	\$23,467.08
Married person or partner in a civil union or de facto relationship	\$705.26	\$18,336.76
Married or in a civil union or de facto relationship, both qualify	\$744.54	\$19,358.04



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**Appendix B: Additional Tables**

*Table B1: Percentage of Loneliness Responses to de Jong Gierveld Loneliness Scale Items for Categorical Variables*

*Table B2: Loneliness Correlations between Individual Loneliness Items and Continuous Variables*

*Table B3: T-test Results for Individual Health Conditions*

*Table B4: T-test Results for Individual Social Groups*

*Table B5: Logistic Regression excluding Housing Satisfaction*

LONELINESS IN OLDER ADULTS

**Table B1**

*Percentage of Loneliness Responses to de Jong Gierveld Loneliness Scale Items for Categorical Variables*

	Gender		Marital Status		Living Status		Chronic Health Conditions	
	Males	Females	Married/ de facto	Not Married/ de facto	Alone	With Others	1+ Conditions	No conditions
I experience a general sense of emptiness	13.5	13.3	10.7	20.3	21.1	11.5	11.5	7.3
There are plenty of people I can rely on when I have problems	39.0	30.6	32.8	37.3	35.8	33.9	35.0	26.5
There are many people I can trust completely	42.0	35.6	36.5	42.9	41.1	37.7	38.5	29.9
There are enough people I feel close to	27.3	20.6	21.4	28.6	28.3	22.3	23.0	19.4
I miss having people around	36.0	34.1	32.1	42.4	44.1	32.7	32.9	29.9
I often feel rejected	14.9	11.7	9.7	17.6	17.4	10.5	11.3	6.1

**Table B1 cont...**

	Economic Living Standards Index			Volunteer in Community		Belonging to Groups	
	Hardship	Comfortable	Good	Volunteer	Non-volunteer	Group Member	Non-member
I experience a general sense of emptiness	31.8	14.4	7.2	9.7	16.9	11.8	20.0
There are plenty of people I can rely on when I have problems	52.9	37.4	27.2	30.8	37.5	33.3	38.9
There are many people I can trust completely	57.5	42.9	30.8	34.5	42.0	36.5	44.9
There are enough people I feel close to	41.3	26.4	17.2	20.4	26.3	22.5	27.3
I miss having people around	50.1	41.7	28.0	33.3	36.4	34.5	35.8
I often feel rejected	28.2	14.5	6.3	10.8	12.8	11.1	15.1

LONELINESS IN OLDER ADULTS

**Table B1 cont...**

	Age (years)						
	55–59	60–64	65–69	70–74	75–79	80–84	85+
I experience a general sense of emptiness	18.3	15.4	12.0	11.5	9.5	10.6	5.9
There are plenty of people I can rely on when I have problems	36.4	38.1	35.1	33.0	28.1	25.6	23.5
There are many people I can trust completely	42.6	44.1	38.2	34.1	31.5	30.0	25.7
There are enough people I feel close to	25.0	25.9	23.8	22.5	18.8	18.9	22.9
I miss having people around	34.2	34.4	35.0	35.7	35.9	35.7	33.3
I often feel rejected	15.2	14.3	11.1	9.5	10.4	7.4	5.9

**Table B2***Correlations between Loneliness Item Scores and Continuous Variables*

	Chronic Health Conditions	SF-12 Physical	SF-12 Mental	Quality of Life	Time at Current Residence	Housing Satisfaction	Neighbourhood Satisfaction	Social Cohesion
I experience a general sense of emptiness	.18	-.17	-.51	-.40	-.04	-.29	-.29	-.23
There are plenty of people I can rely on when I have problems	.10	-.10	-.31	-.29	-.05	-.31	-.27	-.27
There are many people I can trust completely	.11	-.10	-.30	-.28	-.04	-.32	-.31	-.31
There are enough people I feel close to	.10	-.08	-.31	-.28	-.07	-.30	-.29	-.24
I miss having people around	.10	-.11	-.26	-.20	-.01	-.17	-.16	-.14
I often feel rejected	.18	-.14	-.39	-.31	-.04	-.30	-.29	-.23

LONELINESS IN OLDER ADULTS

**Table B3**

*T-test Results showing differences in Loneliness Scores for each Health Condition*

	<i>T</i>	<i>df</i>	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		Cohen's d
						Lower	Upper	
Arthritis*	-2.98	3857.96	.002	-.15	.05	-.26	-.05	.09
Neck and Back*	-5.49	3419.34	<.001	-.29	.05	-.40	-.19	.18
Diabetes	-4.05	4175	.30	-.32	.08	-.48	-.17	.20
Heart*	-4.21	826.18	.03	-.32	.07	-.46	-.17	.19
Disability*	-6.68	670.51	<.001	-.56	.08	-.72	-.39	.34
Blood Pressure	-3.26	4194	.06	-.17	.05	-.27	-.07	.10
Depression*	-12.35	720.61	<.001	-1.06	.09	-1.23	-.89	.66
Other Mental Illness*	-6.33	151.39	<.001	-1.05	.17	-1.38	-.73	.65
Respiratory*	-3.83	1631.12	.005	-.24	.06	-.36	-.12	.14
Sleep*	-11.03	789.80	<.001	-.87	.08	-1.03	-.72	.54
Stroke	-2.91	4180	.382	-.39	.13	-.65	-.13	.24
Gout	-2.44	4173	.134	-.22	.09	-.39	-.04	.13
Hepatitis*	-4.02	157.34	.032	-.60	.15	-.90	-.31	.36
Cancer	1.22	4130	.737	.09	.07	-.05	.23	.05
Other Illness*	-2.54	1017.60	.006	-.20	.08	-.35	-.04	.12

LONELINESS IN OLDER ADULTS

**Table B4**

*T-test Results showing Differences in Loneliness Scores for each Social Group*

	<i>T</i>	<i>df</i>	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		Cohen's d
						Lower	Upper	
Sports*	4.17	1897.88	<.001	.24	.06	.13	.35	.14
Helping*	2.59	2099.80	.001	.15	.06	.04	.26	.09
Political*	2.72	794.31	.018	.20	.07	.05	.34	.12
Union	-.90	3999	.567	-.08	.09	-.24	.09	.05
Religious*	3.01	1819.85	<.001	.18	.06	.06	.29	.11
Hobby*	4.67	2747.38	<.001	.25	.05	.15	.36	.15
Cultural*	1.38	953.09	<.001	.09	.07	-.04	.23	.06
Other Group*	1.36	1594.42	.018	.08	.06	-.04	.20	.05



**Table B5***Logistic Regression Predicting Loneliness with Housing Satisfaction Excluded*

	<i>B</i>	<i>SE</i>	Wald	<i>df</i>	<i>p</i>	Odds	95% CI for	
						Ratio	Odds Ratio	
							Lower	Upper
Age	.01	.01	.66	1	.42	1.01	.99	1.02
Gender	.56	.11	23.83	1	<.001	1.74	1.40	2.18
Marital Status	-.01	.23	.00	1	.97	.99	.63	1.55
Live Alone	.16	.25	.40	1	.53	1.17	.72	1.90
SF-12 Physical	.02	.01	5.41	1	.02	1.02	1.00	1.03
SF-12 Mental	-.06	.01	64.84	1	<.001	.94	.93	.96
Chronic Conditions	.00	.04	.00	1	.97	1.00	.93	1.07
Quality of Life	-.35	.10	11.18	1	<.001	.71	.58	.98
Neighbourhood								
Satisfaction	-.06	.02	12.03	1	<.001	.95	.92	.98
Social Cohesion	-.08	.02	22.34	1	<.001	.93	.90	.96
Groups	.02	.14	.03	1	.87	1.02	.78	1.34
Volunteer	-.21	.12	3.04	1	.08	.82	.65	1.03
Time at Residence	-.01	.01	1.90	1	.17	.99	.99	1.00
ELSI	-.06	.01	24.18	1	<.001	.94	.92	.96
Constant	8.23	.87	90.31	1	<.001	3732.24		